

MEMORANDUM

To: Indiana State Board of Education

From: Dr. Pamela Wright, Director, Office of Special Education
Robin LeClaire, Director, Office of School Improvement

Date: June 6, 2018

Re: Request for SBOE approval of Alternate Achievement Standards

In the coming months, the Indiana Department of Education (IDOE) will be developing a new Alternate Assessment, I AM, for students with significant cognitive disabilities. The Department revisited the existing Content Connectors (Alternate Achievement Standards) to address missing or incomplete standards to ensure the assessment fully measures depth and breadth, while considering this student population.

Led by Mark Keen, Office of School Improvement, supported by Public Consulting Group (PCG) Project SUCCESS, the Department worked with various stakeholders to plan, design and facilitate the review, revision and development of Content Connectors. The committees established to do this work included a balance of content experts, special education teachers and leaders from a representative sample across the state.

The Department recommends the attached Content Connectors for approval based on the steps undertaken across collaborative teams to ensure they are appropriately aligned to Indiana Academic Standards. Upon approval, the Content Connectors will be made available to teachers, parents, and students across the state.

The following Content Connectors are presented to the State Board of Education for review and approval:

- Science (assessed and non-assessed grades, high school course specific))
- ELA (grades 3-8, high school course specific)
- Math (grades 3-8, high school course specific)
- Social Studies (assessed and non-assessed grades, high school course specific)

The attached Executive Summary provides background and a summary of the work.



Indiana's Alternate Academic Standards: Content Connectors

Phase I and II Executive Summary

June 5, 2018

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PROJECT SUMMARY

The purpose of this project was to facilitate a thorough and transparent process to review, revise, and develop Indiana’s Alternate Standards (Content Connectors) to ensure they are appropriately aligned to Indiana Academic Standards and readily available to teachers, parents, and students across the state. Alternate standards are necessary to ensure all students have access to grade level aligned content and to achieve educational accountability for all students.

Public Consulting Group staff worked collaboratively with the Indiana Department of Education (IDOE) and various stakeholders to plan, design, and facilitate the review, revision, and development of Content Connectors. The stakeholders included a balance of content experts, special education teachers, and leaders from a representative sample across the state. The project was completed in two phases to meet the timelines while maintaining high-quality work that reflects input from key stakeholders and the public.

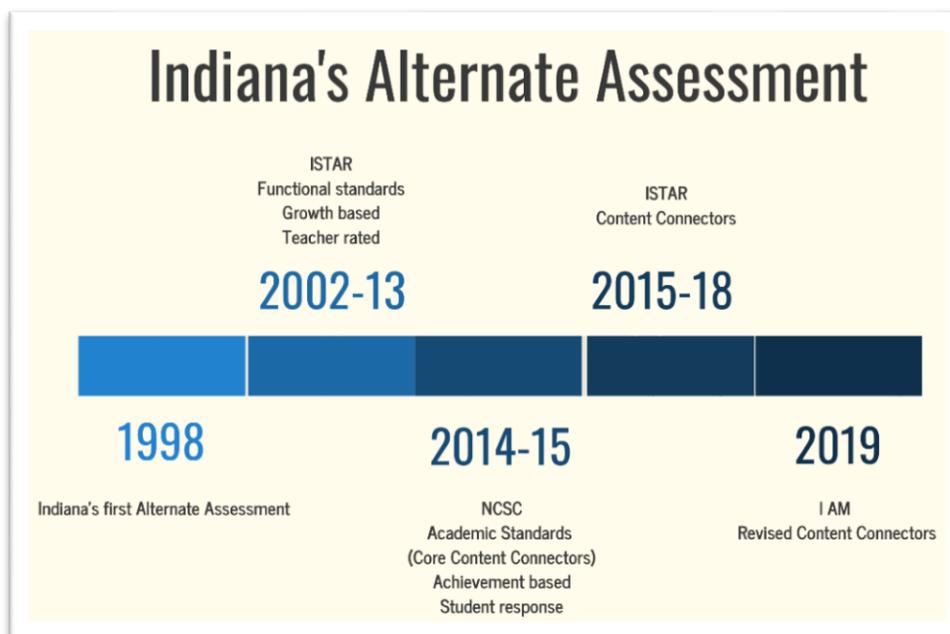
BACKGROUND

Alternate Assessment

Alternate academic standards are designed to measure the knowledge and skills of students with significant cognitive disabilities and are assessed with an alternate assessment. Indiana’s Alternate Assessment has seen many changes in format, content, and vendors in the past several years. Prior to 2014-15, students with significant cognitive disabilities were assessed using a teacher-rated, growth-based assessment of functional skills called Indiana’s Standard Tool for Alternate Reporting (ISTAR). The standards assessed on ISTAR were functional in nature and were used by teachers to plan instruction and write Individualized Education Plan (IEP) goals. However, The No Child Left Behind Act of 2001 (NCLB) specifies that each state, district, and school must be held accountable for the achievement of all students. Alternate assessments are developed to provide a tool to include students with

significant cognitive disabilities in state assessments. The December 9, 2003 regulation on alternate achievement standards and resulting guidance led to the development and implementation of alternate academic standards and assessments across the country. Indiana participated in The National Center and State Collaborative (NCSC), a multi-state, multi-organizational consortium that led the development of an alternate assessment system and related content to assess achievement in

English Language Arts and Mathematics for students with the most significant cognitive disabilities. Through the collaboration with NCSC, Indiana adopted the Core Content Connectors as the alternate academic standards for English Language Arts and Mathematics for 2014-15. Following that year, Indiana left NCSC and chose an



outside vendor to provide the alternate assessment for Indiana (ISTAR). This process led to the review and development of alternate standards (Content Connectors). Like NCSC, the new ISTAR was a student response, achievement-based assessment of academic content.

When Indiana partnered with NCSC, the Office of Special Education also added a resource center, Project SUCCESS, to support the needs of the field related to the assessment and implementation of the new academic standards. The central goal of Project SUCCESS is to assist the IDOE in providing technical assistance to districts with implementation of the Indiana Alternate Academic Standards for students with significant cognitive disabilities.

Project SUCCESS continues to work with IDOE as Indiana prepares to shift its summative assessment for all students from ISTEP to ILEARN and the alternate assessment from ISTAR to I AM, both of which will measure student achievement and growth according to Indiana Academic Standards or aligned Alternate Standards (Content Connectors). As part of the assessment development process, a series of discussions related to Indiana's Academic Standards and aligned Content Connectors led to an analysis of a sample of assessed Content Connectors and uncovered a concern that there were missing and/or incomplete standards, and that the process of original development and approval was unclear. This discovery prompted the work of this project.

Indiana Academic Standards

Following is a summary of the development of Indiana Academic Standards (IAS) in the assessed content areas from the [IDOE website](#). These standards are the foundation of this project and critical for this work because the Content Connectors need to reflect the key concepts and skills within the IAS. Alternate standards capture the academic intent of the IAS, but may vary in depth, breadth, and complexity. Students with significant cognitive disabilities need to have access to standards aligned to grade level content with appropriately high expectations.

ENGLISH LANGUAGE ARTS

In April of 2014, the Indiana State Board of Education approved the adoption of new standards for English/Language Arts. These new standards have been validated as college and career ready by the Indiana Commission for Higher Education, the Indiana Department of Education, and the Indiana Center for Education and Career Innovation. This means that students who successfully master these English/Language Arts objectives for what they should know and be able to do by the time they graduate from high school will be ready to go directly into the workplace or a postsecondary educational opportunity without the need of remediation.

Instruction in English (literature, composition and speech) and language arts (reading, writing, speaking, listening and viewing) provides vital content for lifelong learning and problem solving in our increasingly complex technological world. English/Language Arts (ELA) instruction engages students in the essential thinking skills and processes used across subject areas.

MATHEMATICS

In April of 2014, the Indiana State Board of Education approved the adoption of new standards for Mathematics. The 2014 Indiana Academic Standards for Mathematics are the result of a process designed to identify, evaluate, synthesize, and create the most high-quality, rigorous standards for Indiana students. The standards are designed to ensure that Indiana students are prepared to enter and successfully complete postsecondary education, and that they are prepared for long-term, economically-viable career opportunities.

The Indiana Academic Standards for Mathematics demonstrate what students should know and be able to do in the areas of K-8 Mathematics; Algebra I, II, and Geometry; and higher-level high school Mathematics courses. Instruction in Mathematics provides vital content and skills for lifelong learning and problem solving in our

increasingly complex technological world and engages students in the essential thinking skills and processes used across subject areas.

This means that students who successfully master these objectives for what they should know and be able to do in Mathematics disciplines by the time they graduate from high school will be ready to go directly into the workplace or a postsecondary educational opportunity without the need for remediation.

SOCIAL STUDIES

In March of 2014, the Indiana State Board of Education approved the adoption of new academic standards for Social Studies. These new standards went through a rigorous review process. Classroom teachers, higher education, and social studies organizations were involved in the review process.

In addition to the new academic standards, the Indiana State Board of Education also approved the adoption of Content Area Literacy Standards for History/Social Studies (Grades 6-12) in April of 2014. These standards are to provide guidance to social studies teachers on expectations for integrating reading and writing skills into their classrooms.

SCIENCE

Indiana's Academic Standards for Science were last revised in 2010. This new document, Indiana's Academic Standards for Science – 2016, reflects the ever-changing science content and the underlying premise that science education should be an inquiry-based, hands-on experience. These standards were adopted by the Indiana State Board of Education in April 2016, and will be implemented in the 2016-2017 school year.

The science standards focus on the following topics; physical science; earth and space science; life science; and literacy. For K-8, there are computer science and engineering standards.

PROCESS

PCG staff operated collaboratively with the IDOE Offices of Assessment, Special Education and School Improvement to ensure a unified approach to this work. A phased approach provided an opportunity to review, revise and develop Content Connectors with the support of a diverse group of stakeholders from across Indiana. Following is a summary of the process utilized for thorough review and high-quality development.

The work of the stakeholders began with an overview of the Content Connectors, including their purpose, alignment to Indiana Academic standards and examples of use in instruction. The group received information on criteria of quality standards and how to determine critical access points for each standard. Stakeholders were reminded that all students need access to rigorous content standards and were encouraged to include all depths of knowledge in their work. Facilitators during the sessions guided stakeholders to remain focused and committed to developing Content Connectors that:

- Identified the key knowledge and skills aligned to Indiana Academic Standards
- Connected learning within and across grade levels
- Used clear and precise language
- Clarified what students are expected to do or know by the end of the grading period or course

Facilitators reminded stakeholders that standards do not focus on teacher actions and are not designed to be instructional strategies. The groups reviewed Content Connectors by content area vertically to ensure critical information was not omitted and that gaps or inconsistencies did not exist.

The following table outlines the key tasks of this project.

Timeline	Task	Details
PHASE 1		
February 22-March 1	Recruitment of stakeholders	Stakeholders recruited via IDOE website and advertised using various Learning Connection Communities and distribution lists.
March 12	Phase I Session	Review, revision and development of the following Content Connectors: <ul style="list-style-type: none"> • Science – ISTAR assessed grades • ELA – Grades 3-8 classroom and ISTAR assessed • Math – Grades 3-8 classroom and ISTAR assessed • Social Studies – ISTAR assessed grades • ELA – High School (9th-10th) • Math – Algebra
PHASE 2		
February 22-March 1 Additional inquires added as received	Recruitment of stakeholders	Stakeholders recruited via IDOE website and advertised using various Learning Connection Communities and distribution lists.
April 4	Phase II Session	Review, revision and development of the following Content Connectors: <ul style="list-style-type: none"> • Science – Non-assessed grades, classroom and ISTAR assessed • Social Studies – Non-assessed grades, classroom and ISTAR assessed • ELA - High school course specific standards • Math - Geometry, measurement • High school – Course specific
April 24	Phase II Session Follow-up	Key stakeholders with high level content knowledge, specifically in high school Social Studies

		<p>and Math, participated in follow up session to review and complete content connectors for the following high school courses:</p> <ul style="list-style-type: none"> • Algebra • Geometry • Math 10 • Government • Economics • US History
May 14-19	Content Connectors Public Review	Draft Content Connectors were posted and public comment was sought via electronic survey posted on the IDOE website and advertised using various Learning Connection Communities and distribution lists.

CONCLUSION

The process implemented for the review, revision and development of rigorous alternate academic standards aligned to grade level Indiana Academic standards was completed with input from IDOE staff and a diverse group of stakeholders. The draft Content Connectors presented for approval are believed to be appropriate content for instruction of students with significant cognitive disabilities and should be used in the development of the new alternate assessment, I AM. Once approved, any additional changes would not impact content and would only be made in the case of preparation for use in instructional tools and resources or typographical errors.



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GRADE 3

READING

Guiding Principle: *Students read a wide range of fiction, nonfiction, classic, and contemporary works, to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They read a wide range of literature in many genres from a variety of time periods and cultures from around the world to build an understanding of the many dimensions (e.g., philosophical, ethical, aesthetic) of human experience. They draw on their prior experience, their interactions with other readers and writers, and reading skills that they have developed and refined.¹*

READING: Foundations

There are four key areas found in the Reading: Foundations section for grades K-5: Print Concepts, Phonological Awareness, Phonics, and Fluency. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Foundations.

Learning Outcome

Indiana Academic Standards	Content Connectors
3.RF.1: Apply foundational reading skills to build reading fluency and comprehension.	3.RF.1.a.1: Apply foundational reading skills to build fluency. Apply foundational skills to build comprehension.
3.RF.4.2: Understand the six major syllable patterns (CVC, CVr, V, VV, VCe, Cle) to aid in decoding unknown words.	3.RF.4.2.a.1: Understand the six major syllable patterns.
3.RF.4.4: Read grade-appropriate words that have blends (e.g., walk, play) and common spelling patterns (e.g., qu-; doubling the consonant and adding -ing, such as cut/cutting; changing the ending of a word from -y to -ies to make a plural).	3.RF.4.4.a.1: Read blends and common spelling patterns.
3.RF.4.5: Know and use more difficult word families when reading unfamiliar words (e.g., -ight).	3.RF.4.5.a.1: Know and use common word families when reading unfamiliar words.
3.RF.4.6: Read multi-syllabic words composed of roots and related prefixes and suffixes; read irregular contractions (e.g., will not = won't) and	3.RF.4.6.a.1 Read multi-syllabic words composed of roots and related prefixes and suffixes

possessives (e.g., children’s, Dennis’s).	3.RF.4.6.a.2 Read irregular contractions (e.g., will not = won’t)
	3.RF.4.6.a.3 Read possessives (e.g., children’s, Dennis’s).
3.RF.5: Orally read grade-level appropriate or higher texts smoothly and accurately, with expression that connotes comprehension at the independent level.	3.RF.5.a.1: Read grade level appropriate texts smoothly and accurately
	3.RF.5.a.2: Read grade level appropriate text and demonstrate comprehension.

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READING: Literature

There are three key areas found in the Reading: Literature section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, and Synthesis and Connection of Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Literature.

Learning Outcome

- 3.RL.1** Read and comprehend a variety of literature within a range of complexity appropriate for grades 2-3. By the end of grade 3, students interact with texts proficiently and independently.

Key Ideas and Textual Support

Indiana Academic Standards	Content Connectors
3.RL.1: Read and comprehend a variety of literature within a range of complexity appropriate for grades 2-3. By the end of grade 3, students interact with texts proficiently and independently.	3.RL.1.a.1: Read a variety of grade level appropriate literature.
	3.RL.1.a.2: Comprehend a variety of grade level appropriate literature.
3.RL.2.1: Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	3.RL.2.1.a.1 Answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
3.RL.2.2: Retell folktales, fables, and tall tales from diverse cultures; identify the themes in these works.	3.RL.2.2.a.1: Retell folktales, fables, and tall tales from diverse cultures.
	3.RL.2.2.a.2: Identify a theme in a folktale, fable, and tall tale.
3.RL.2.3: Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the plot.	3.RL.2.3.a.1: Describe characters in a story (e.g., their traits, motivations or feelings).
	3.RL.2.3.a.2: Explain how characters' actions contribute to the plot.
3.RL.3.1: Use terms such as chapter, scene, and stanza to refer to the parts of stories, plays, and poems; describe how each successive part builds on earlier sections.	3.RL.3.1.a.1: Use terms such as chapter, scene, and stanza to refer to the parts of stories, plays, and poems.
	3.RL.3.1.a.2: Describe how each successive part of a story, play, or poem builds on earlier sections.
3.RL.3.2: Distinguish personal point of view from that of the narrator or those	3.RL.3.2.a.1: Identify narrator or character's point of view.

of the characters.	3.RL.3.2.a.2: Distinguish their own point of view from that of the narrator or those of the characters.
3.RL.4.1: Explain how specific aspects of a text’s illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting).	
3.RL.4.2: Compare and contrast the themes, settings, and plots of stories written by the same author about the same or similar characters (e.g., in books from a series).	3.RL.4.2.a.1: Compare and contrast two stories written by the same author about the same or similar characters.

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READING: Nonfiction

There are three key areas found in the Reading: Nonfiction section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, and Synthesis and Connection of Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Nonfiction.

Learning Outcome

Indiana Academic Standards	Content Connectors
3.RN.1: Read and comprehend a variety of nonfiction within a range of complexity appropriate for grades 2-3. By the end of grade 3, students interact with texts proficiently and independently.	3.RN.1.a.1: Read a variety of grade level appropriate nonfiction texts
3.RN.2.1: Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	3.RN.2.1.a.1: Answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
3.RN.2.2: Determine the main idea of a text; recount the key details and explain how they support the main idea.	3.RN.2.2.a.1: Determine the main idea of a text.
	3.RN.2.2.a.2: Recount the key details and explain how they support the main idea.
3.RN.2.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in processes or procedures in a text, using words such as first, next, finally, because, problem, solution, same, and different.	3.RN.2.3.a.1 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in processes or procedures in a text, using words such as first, next, finally, because, problem, solution, same, and different
3.RN.3.1: Apply knowledge of text features to locate information and gain meaning from a text (e.g., maps, illustrations, charts, font/format).	3.RN.3.1.a.1: Identify the purpose of a variety of text features.
	3.RN.3.1.a.2: Apply knowledge of text features to locate information and gain meaning from a text (e.g., maps, illustrations, charts, font/format).
3.RN.3.2: Identify how a nonfiction text can be structured to indicate a problem and solution or to put events in chronological order.	3.RN.3.2.a.1: Identify how a nonfiction text can be structured to indicate a problem and solution.
	3.RN.3.2.a.2: Identify how a nonfiction text can be structured to put events in chronological order.

<p>3.RN.3.3: Distinguish one’s own perspective from that of the author of the text.</p>	<p>3.RN.3.3.a.1: Identify the author’s perspective in a text.</p>
<p>3.RN.4.1: Distinguish between fact and opinion; explain how an author uses reasons and facts to support specific points in a text.</p>	<p>3.RN.4.1.a.1: Distinguish between fact and opinion.</p>
	<p>3.RN.4.1.a.2: Explain how an author uses reasons and facts to support specific points in a text.</p>
<p>3.RN.4.2: Compare and contrast the most important points and key details presented in two texts on the same topic.</p>	<p>3.RN.4.2.a.1: Compare and contrast the most important points and key details presented in two texts on the same topic.</p>

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READING: Vocabulary

There are two key areas found in the Reading: Vocabulary section for grades K-5: Vocabulary Building and Vocabulary in Literature and Nonfiction Texts. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Vocabulary.

Learning Outcome

Indiana Academic Standards	Content Connectors
3.RV.1: Build and use accurately conversational, general academic, and content-specific words and phrases.	3.RV.1.a.1: Use general academic and content-specific words and phrases accurately.
3.RV.2.1: Apply context clues (e.g., word, phrase, and sentence clues) and text features (e.g., maps, illustrations, charts) to determine the meanings of unknown words.	3.RV.2.1.a.1: Use context clues and text features to determine the meanings of unknown words.
3.RV.2.2: Identify relationships among words, including synonyms, antonyms, homographs, homonyms, and multiple-meaning words (e.g., puzzle, fire).	3.RV.2.2.a.1: Identify relationships among words, including synonyms and antonyms.
3.RV.2.4: Use a known word as a clue to the meaning of an unknown word with the same root, and identify when an affix is added to a known root word.	3.RV.2.4.a.1: Use a known root word as a clue to the meaning of an unknown word with the same root.
	3.RV.2.4.a.2: Identify when an affix is added to a known root word.
3.RV.2.5: Consult reference materials, both print and digital (e.g., dictionary), to determine or clarify the meanings of words and phrases.	
3.RV.3.1: Determine how the author uses words and phrases to provide meaning to works of literature, distinguishing literal from nonliteral language, including figurative language (e.g., similes).	3.RV.3.1.a.1: Determine the meaning of literal and nonliteral words and phrases as they are used in a work of literature.
3.RV.3.2: Determine the meanings of general academic and content-specific words and phrases in a nonfiction text relevant to a third grade topic or subject area.	3.RV.3.2.a.1: Determine the meaning of general academic and content-specific words and phrases in a nonfiction text relevant to a third- grade topic or subject area.



DEPARTMENT OF EDUCATION

Dr. Jennifer McCormick
Superintendent of Public Instruction

Working Together for Student Success

3.RV.3.3: Recognize the meanings of idioms in context.

3.RV.3.3.a.1: Recognize the meaning of idioms in context.

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WRITING

Guiding Principle: *Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes. Students apply knowledge of language structure, language conventions, media techniques, figurative language, and genre to create, critique, and discuss writing. Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources to communicate their discoveries in ways that suit their purpose and audience.*ⁱⁱ

WRITING

There are four key areas found in the Writing section for grades 6-12: Writing Genres, the Writing Process, the Research Process, and Conventions of Standard English. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Writing.

Learning Outcome

Indiana Academic Standards	Content Connectors
3.W.1: Write routinely over a variety of time frames and for a range of discipline-specific tasks, purposes, and audiences; apply reading standards to write in response to literature and nonfiction texts.	3.W.1.a.1: Write routinely over a variety of time frames for varying tasks, purposes, and audiences. 3.W.1.a.2: Apply reading standards to write in response to literature and nonfiction texts.
3.W.2.1: Write legibly in print or cursive, leaving space between letters in a word, words, in a sentence, and words and the edges of the paper.	3.W.2.a.1: Produce a written response in print, cursive, or digital format, using appropriate spacing and alignment.
3.W.3.1: Write persuasive compositions in a variety of forms that – <ul style="list-style-type: none"> ● State the opinion in an introductory statement or section. ● Support the opinion with reasons in an organized way. ● Connect opinion and reasons using words and phrases. ● Provide a concluding statement or section. 	3.W.3.a.1: State the opinion in an introductory statement or section in a persuasive composition.
	3.W.3.a.2: Support the opinion with reasons in an organized way in a persuasive composition.
	3.W.3.a.3: Connect opinion and reasons using words and phrases in a persuasive composition.
	3.W.3.a.4: Provide a concluding statement or section in a persuasive composition.
	3.W.3.a.5: Write persuasive compositions in a variety of formats.

<p>3.W.3.2: Write informative compositions on a variety of topics that –</p> <ul style="list-style-type: none"> ● State the topic, develop a main idea for the introductory paragraph, and group related information together. ● Develop the topic with facts and details. ● Connect ideas within categories of information using words and phrases. ● Use text features (e.g., pictures, graphics) when useful to aid comprehension. ● Provide a concluding statement or section. 	<p>3.W.3.2.a.1: State the topic including a main idea for the introductory paragraph in an informative composition.</p>
	<p>3.W.3.2.a.2: Develop a main idea for the introductory paragraph in an informative composition.</p>
	<p>3.W.3.2.a.3: Group related information together in an informative composition.</p>
	<p>3.W.3.2.a.4: Develop the topic with facts and details in an informative composition.</p>
	<p>3.W.3.2.a.5: Connect ideas within categories of information using words and phrases in an informative composition.</p>
	<p>3.W.3.2.a.6: Use text features when useful to aid comprehension in an informative composition.</p>
	<p>3.W.3.2.a.7: Provide a concluding statement or section in an informative composition.</p>
	<p>3.W.3.2.a.8: Write informative compositions on a variety of topics.</p>
<p>3.W.3.3: Write narrative compositions in a variety of forms that –</p> <ul style="list-style-type: none"> ● Establish an introduction (e.g., situation, narrator, characters). ● Include specific descriptive details and clear event sequences. ● Include dialogue. ● Connect ideas and events using introduction and transition words. ● Provide an ending. 	<p>3.W.3.3.a.1: Create an introduction (e.g., situation, narrator, characters) in a narrative composition.</p>
	<p>3.W.3.3.a.2: Include specific descriptive details in a narrative composition.</p>
	<p>3.W.3.3.a.3: Include clear event sequences in a narrative composition.</p>
	<p>3.W.3.3.a.4: Include dialogue in a narrative composition.</p>
	<p>3.W.3.3.a.5: Connect ideas and events using introduction and transition words in a narrative composition.</p>
	<p>3.W.3.3.a.6: Provide an ending in a narrative composition.</p>
	<p>3.W.3.3.a.7: Write narrative compositions in a variety of forms.</p>
<p>3.W.4: Apply the writing process to –</p> <ul style="list-style-type: none"> ● Generate a draft by developing, selecting and organizing ideas relevant to 	<p>3.W.4.a.1: Develop, organize, and select ideas relevant to topic, purpose, and genre when applying the writing process.</p>

<p>topic, purpose, and genre; revise to improve writing, using appropriate reference materials (e.g., quality of ideas, organization, sentence fluency, word choice); and edit writing for format and conventions (e.g., spelling, capitalization, usage, punctuation).</p> <ul style="list-style-type: none"> ● Use technology to interact and collaborate with others to publish legible documents. 	<p>3.W.4.a.2: Revise to improve the quality of the writing (e.g., quality of ideas, organization, sentence fluency, word choice).</p>
<p>3.W.5: Conduct short research on a topic.</p> <ul style="list-style-type: none"> ● Identify a specific topic or question of interest (e.g., where did Benjamin Harrison grow up?). ● Locate information in reference texts, electronic resources, or through interviews. ● Recognize that some sources may be more reliable than others. ● Record relevant information in their own words. ● Present the information, choosing from a variety of formats. 	<p>3.W.4.a.3: Edit writing for format and conventions.</p>
<p>3.W.6.1: Demonstrate command of English grammar and usage, focusing on:</p>	<p>3.W.4.a.4: Use technology to interact and collaborate with others.</p>
<p>3.W.6.1a: Nouns/Pronouns – Writing sentences using abstract nouns (e.g., hope, thought).</p>	<p>3.W.4.a.5: Use technology to publish legible documents.</p>
<p>3.W.6.1b: Verbs – Writing sentences that use regular and irregular verbs and simple verb tenses to convey various times, sequences, states, and conditions.</p>	<p>3.W.5.a.1: Identify a specific topic or question of interest.</p>
<p>3.W.6.1c: Adjectives/ Adverbs – Writing sentences that include comparative and superlative adjectives and adverbs, choosing between them depending on what is to be modified, and explaining their functions in the sentence.</p>	<p>3.W.5.a.2: Locate information in reference texts, electronic resources, or through interviews.</p>
<p>3.W.6.1e: Usage – Writing correctly complete simple, compound, and complex declarative, interrogative, imperative, and exclamatory sentences, using coordinating and subordinating conjunctions (e.g., and, for, but, or).</p>	<p>3.W.5.a.3: Recognize that some sources may be more reliable than others.</p>
	<p>3.W.5.a.4: Summarize relevant information in their own words.</p>
	<p>3.W.5.a.5: Present the information, choosing from a variety of formats.</p>
	<p>3.W.5.a.6: Complete a short research project.</p>
	<p>3.W.6.a.1: Effectively use English grammar.</p>
	<p>3.W.6.1a.a.1: Write sentences using abstract nouns.</p>
	<p>3.W.6.1b.a.1: Write sentences that use regular and irregular verbs to convey various times, sequences, states, and conditions.</p>
	<p>3.W.6.1b.a.2: Write sentences that use simple verb tenses to convey various times, sequences, states, and conditions.</p>
	<p>3.W.6.1c.a.1: Write sentences that include comparative and superlative adjectives and adverbs accurately.</p>
	<p>3.W.6.1e.a.1: Correctly write simple sentences.</p>
	<p>3.W.6.1e.a.2: Correctly write compound sentences.</p>

	3.W.6.1e.a.3: Correctly write complex sentences.
	3.W.6.1e.a.4: Use coordinating and subordinating conjunctions.
3.W.6.2: Demonstrate command of capitalization, punctuation, and spelling, focusing on:	3.W.6.1e.a.5: Effectively use capitalization, punctuation, and spelling.
3.W.6.2a: Capitalization – Capitalizing appropriate words in titles, historical periods, company names, product names, and special events.	3.W.6.2.a.1: Appropriately use capitalization.
3.W.6.2b: Punctuation – <ul style="list-style-type: none"> • Correctly using apostrophes to form contractions and singular and plural possessives. • Using quotation marks to mark direct speech. • Using commas in locations and addresses; to mark direct speech; and for coordinating adjectives (e.g., a small, red bicycle). 	3.W.6.2b.a.1: Use apostrophes to form contractions.
	3.W.6.2b.a.2: Use contractions to form singular and plural possessives.
	3.W.6.2b.a.3: Use quotation marks to indicate direct speech.
	3.W.6.2b.a.4: Appropriately use commas.
3.W.6.2d: Spelling – <ul style="list-style-type: none"> • Using conventional spelling for high-frequency and other studied words and for adding affixes to base words. • Using spelling patterns and generalizations (e.g., word families, position-based spellings, syllable patterns, ending rules, meaningful word parts, homophones/ homographs) when writing. 	3.W.6.2d.a.1: Use conventional spelling for high-frequency and other studied words.

SPEAKING AND LISTENING

Guiding Principle: *Students listen actively and communicate effectively for a variety of purposes, including for learning, enjoyment, persuasion, and the exchange of information and ideas. Students adjust their use of language to communicate effectively with a variety of audiences and for different purposes. Students develop an understanding of and respect for diversity in language use, patterns, and dialects.*ⁱⁱⁱ

SPEAKING AND LISTENING

There are three key areas found in the Speaking and Listening section for grades 6-12: Discussion and Collaboration, Comprehension, and Presentation of Knowledge and Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Speaking and Listening.

Learning Outcome

Indiana Academic Standard	Content Connector
3.SL.1: Listen actively and adjust the use of spoken language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.	3.SL.1.a.1: Listen actively and adjust the use of language.
	3.SL.1.a.2: Adjust the use of language to communicate effectively with a variety of audiences and for different purposes.
3.SL.2.1: Engage effectively in a range of collaboration discussions (one-on-one, in groups, and teacher-let) on grade-appropriate topics and texts, building on others' ideas and expressing personal ideas clearly	3.SL.2.1.a.1: Participate in collaborative discussions (one-on-one and in groups) on grade appropriate topics or texts by identifying key ideas of the discussion.
	3.SL.2.1.a.2: Participate in collaborative discussions (one-on-one and in groups) on grade appropriate topics or texts by adding relevant ideas and expressing personal ideas.
3.SL.2.2: Explore ideas under discussion by drawing on readings and other information.	3.SL.2.2.a.1: Provide evidence of being prepared for discussions on a topic or text, through appropriate statements made during discussion.
	3.SL.2.2.a.2: Demonstrate knowledge and use of agreed-upon rules for discussions
3.SL.2.3: Demonstrate knowledge and use of agreed-upon rules for discussions and identify and serve in roles for small group discussions or projects.	3.SL.2.2.a.3: Identify and serve in roles for small group discussions or projects.
	3.SL.2.4: Ask questions to check understanding of information presented, stay
	3.SL.2.4.a.1: Ask questions to check understanding of information

on topic, and link comments to the remarks of others.	presented in collaborative discussions.
	3.SL.2.4.a.2: Stay on topic in collaborative discussions
	3.SL.2.4.a.3: Link personal ideas and comments to the ideas shared by others in collaborative discussions.
3.SL.2.5: Explain personal ideas and understanding in reference to the discussion.	3.SL.2.5.a.1: Explain personal ideas and understanding during classroom discussions
3.SL.3.1: Retell, paraphrase, and explain the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively (e.g., charts and graphs), and orally.	3.SL.3.1.a.1: Retell, paraphrase, and explain the main ideas of a text read aloud or information presented in diverse media and formats, including visually, quantitatively.
	3.SL.3.1.a.2: Retell, paraphrase, and explain the supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively.
3.SL.3.2: Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.	3.SL.2.5.a.1: Ask questions about information from a speaker.
	3.SL.2.5.a.2: Answer questions about information from a speaker.
	3.SL.2.5.a.3: Offer appropriate elaboration and detail when answering questions.
3.SL.4.1: Using appropriate language, report on a topic or text, or provide a narrative that organizes ideas chronologically or around major points of information, with appropriate facts and relevant, descriptive details, speaking at an understandable pace, in a clear, concise manner.	3.SL.4.1.a.1: Using appropriate language, speak in a clear, concise manner when reporting on a topic.
	3.SL.4.1.a.2: Using appropriate language, speak in a clear, concise manner when providing a narrative.
3.SL.4.2: Create oral presentations that maintain a clear focus, using various media when appropriate to emphasize or enhance certain facts or details.	3.SL.4.2.a.1: Create a presentation with a clear focus, using various media to emphasize facts or details.

ⁱ Adapted from Standards for the English Language. National Council of Teachers of English and International Reading Association, 1996. Available at <http://www.ncte.org/library/NCTEFiles/Resources/Books/Sample/StandardsDoc.pdf>.

ⁱⁱ Ibid.

ⁱⁱⁱ Ibid.

GRADE 4

READING

Guiding Principle: *Students read a wide range of fiction, nonfiction, classic, and contemporary works, to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They read a wide range of literature in many genres from a variety of time periods and cultures from around the world to build an understanding of the many dimensions (e.g., philosophical, ethical, aesthetic) of human experience. They draw on their prior experience, their interactions with other readers and writers, and reading skills that they have developed and refined.ⁱ*

READING: Foundations

There are four key areas found in the Reading: Foundations section for grades K-5: Print Concepts, Phonological Awareness, Phonics, and Fluency. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Foundations.

Learning Outcome

Indiana Academic Standards	Content Connector
4.RF.1: Apply foundational reading skills to demonstrate reading fluency and comprehension.	4.RF.1.a.1: Apply foundational reading skills to build fluency. 4.RF.1.a.2: Apply foundational skills to build comprehension.
4.RF.4.2: Use the six major syllable patterns (CVC, CVr, V, VV, VCe, Cle) to read unknown words.	4.RF.4.2.a.1: Understand the six major syllable patterns.
4.RF.4.6: Use knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multi-syllabic words in context.	
4.RF.5: Orally read grade-level appropriate or higher texts smoothly and accurately, with expression that connotes comprehension at the independent level.	4.RF.5.a.1: Read grade level appropriate text smoothly and accurately.



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Superintendent of Public Instruction

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	4.RF.5.a.2: Read grade level appropriate text and demonstrate comprehension.

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READING: Literature

There are three key areas found in the Reading: Literature section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, and Synthesis and Connection of Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Literature.

Learning Outcome

Indiana Academic Standards	Content Connector
<p>4.RL.1: Read and comprehend a variety of literature within a range of complexity appropriate for grades 4-5. By the end of grade 4, students interact with texts proficiently and independently at the low end of the range and with scaffolding as needed at the high end.</p>	<p>4.RL.1.a.1: Read a variety of grade level appropriate literature.</p>
	<p>4.RL.1.a.2: Comprehend a variety of grade level appropriate literature.</p>
<p>4.RL.2.1: Refer to details and examples in a text when explaining what a text says explicitly and when drawing inferences from the text.</p>	<p>4.RL.2.1.a.1: Refer to details and examples in a text when explaining what the text says explicitly.</p>
	<p>4.RL.2.1.a.2: Refer to details and examples in a text when drawing basic inferences from a work of literature.</p>
<p>4.RL.2.2: Paraphrase or retell the main events in a story, myth, legend, or novel; identify the theme and provide evidence for the interpretation.</p>	<p>4.RL.2.2.a.1: Paraphrase or retell the main events in story, myth, legend, or novel.</p>
	<p>4.RL.2.2.a.2: Identify the theme within a story, myth, legend or novel.</p>
	<p>4.RL.2.2.a.3: Provide evidence for the interpretation of the theme.</p>
<p>4.RL.2.3: Describe a character, setting, or event in a story or play, drawing on specific details in the text, and how that impacts the plot.</p> <p>4.RL.2.3: (cont.)</p>	<p>4.RL.2.3.a.1: Describe a character, setting, or event in a story or play, drawing on specific details in the text.</p>
	<p>4.RL.2.3.a.2: Explain how a character, setting, or event impacts the plot.</p>
<p>4.RL.3.1: Explain major differences between poems, plays, and prose, and refer to the structural elements of poems and drama.</p>	<p>4.RL.3.1.a.1: Explain major differences between poems, plays, and prose.</p>

Indiana Academic Standards	Content Connector
	4.RL.3.1.a.2: Refer to the structural elements of poems or drama.
4.RL.3.2: Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations.	4.RL.3.2.a.1: Compare and contrast the point of view from which different stories are narrated.
4.RL.4.1: Describe how visual and multimedia presentations and representations can enhance the meaning of a text.	4.RL.4.1.a.1: Identify how visual and multimedia presentations and representations can enhance the meaning of a text.
4.RL.4.2: Compare and contrast the treatment of similar themes and topics and patterns of events in stories, myths, and traditional literature from different cultures.	4.RL.4.2.a.1: Compare the treatment of similar themes and topics in stories, myths, and traditional literature from different cultures.

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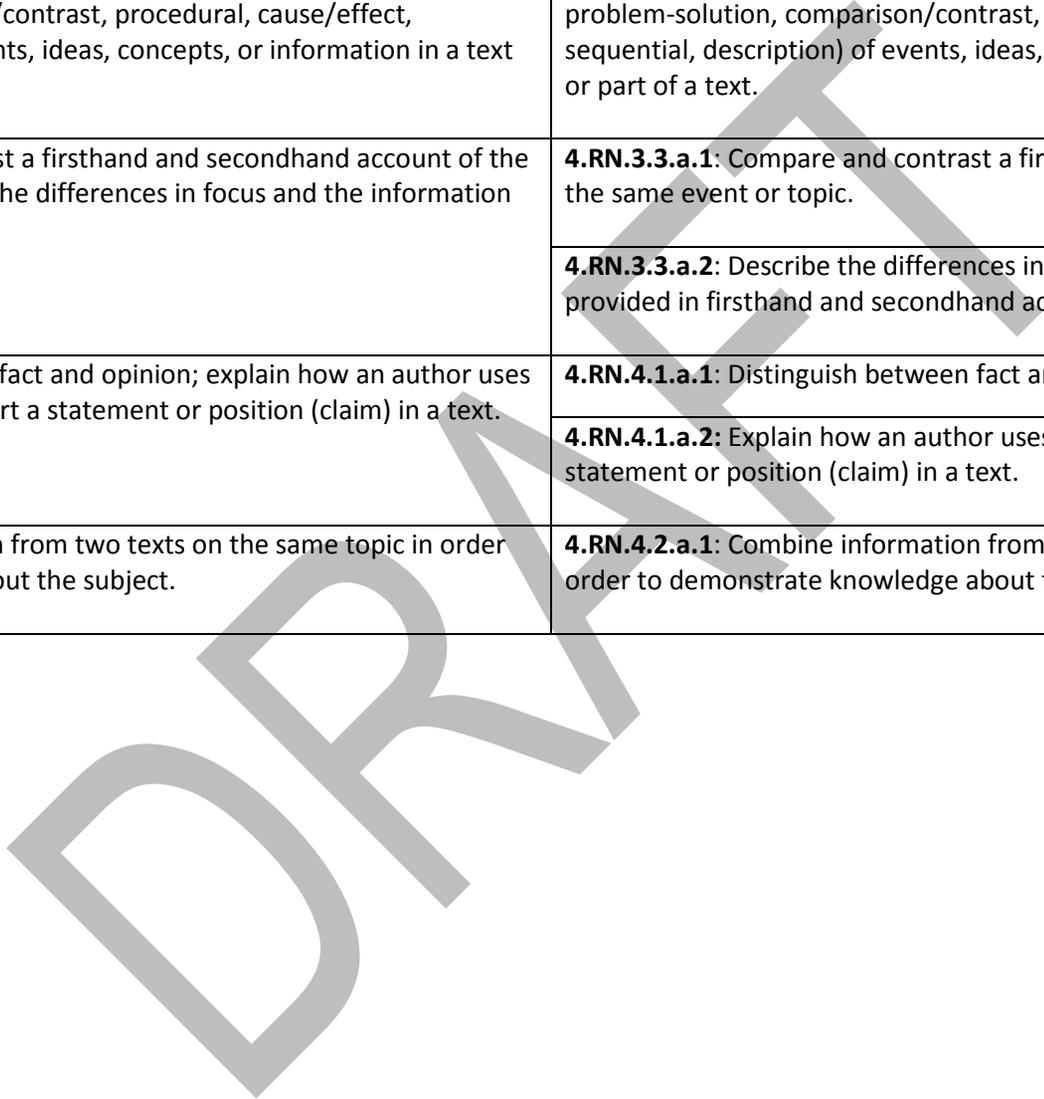
READING: Nonfiction

There are three key areas found in the Reading: Nonfiction section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, and Synthesis and Connection of Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Nonfiction.

Learning Outcome

Indiana Academic Standards	Content Connector
<p>4.RN.1: Read and comprehend a variety of nonfiction within a range of complexity appropriate for grades 4-5. By the end of grade 4, students interact with texts proficiently and independently at the low end of the range and with scaffolding as needed at the high end.</p>	<p>4.RN.1.a.1: Read a variety of nonfiction grade level texts.</p>
	<p>4.RN.1.a.2: Comprehend a variety of non-fiction within a range of complexity</p>
<p>4.RN.2.1: Refer to details and examples in a text when explaining what a text says explicitly and when drawing inferences from the text.</p>	<p>4.RN.2.1.a.1: Refer to details and examples in a text when explaining what the text says explicitly.</p>
	<p>4.RN.2.1.a.2: Refer to details and examples in a text when drawing inferences from the text.</p>
<p>4.RN.2.2: Determine the main idea of a text and explain how it is supported by key details; summarize the text.</p>	<p>4.RN.2.2.a.1: Determine the main idea of a text.</p>
	<p>4.RN.2.2.a.2: Explain how the main idea is supported by key details.</p>
	<p>4.RN.2.2.a.3: Summarize the text.</p>
<p>4.RN.2.3: Explain the relationships between events, procedures, ideas, or concepts in a historical, scientific, or technical text, based on specific information in the text.</p>	<p>4.RN.2.3.a.1: Explain the relationships between events, procedures, ideas, or concepts in a historical, scientific, or technical text, based on specific information in the text.</p>
<p>4.RN.3.1: Apply knowledge of text features to locate information and gain meaning from a text (e.g., charts, tables, graphs, headings, subheadings, font/format).</p>	<p>4.RN.3.1.a.1: Apply knowledge of text features to locate information and gain meaning from a text (e.g., charts, tables, graphs, headings, subheadings, font/format).</p>
<p>4.RN.3.2: Describe the organizational structure (e.g., chronological,</p>	<p>4.RN.3.2.a.1: Describe the organizational structure (e.g., chronological,</p>

Indiana Academic Standards	Content Connector
problem-solution, comparison/contrast, procedural, cause/effect, sequential, description) of events, ideas, concepts, or information in a text or part of a text.	problem-solution, comparison/contrast, procedural, cause/effect, sequential, description) of events, ideas, concepts, or information in a text or part of a text.
4.RN.3.3: Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided in the accounts.	4.RN.3.3.a.1: Compare and contrast a firsthand and secondhand account of the same event or topic.
	4.RN.3.3.a.2: Describe the differences in focus and the information provided in firsthand and secondhand accounts.
4.RN.4.1: Distinguish between fact and opinion; explain how an author uses reasons and evidence to support a statement or position (claim) in a text.	4.RN.4.1.a.1: Distinguish between fact and opinion.
	4.RN.4.1.a.2: Explain how an author uses reasons and evidence to support a statement or position (claim) in a text.
4.RN.4.2: Combine information from two texts on the same topic in order to demonstrate knowledge about the subject.	4.RN.4.2.a.1: Combine information from two texts on the same topic in order to demonstrate knowledge about the subject.



READING: Vocabulary

There are two key areas found in the Reading: Vocabulary section for grades 6-12: Vocabulary Building and Vocabulary in Literature and Nonfiction Texts. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Vocabulary.

Learning Outcome

Indiana Academic Standards	Content Connector
4.RV.1: Build and use accurately general academic and content-specific words and phrases.	4.RV.1.a.1: Use general academic and content-specific words and phrases accurately.
4.RV.2.1: Apply context clues (e.g., word, phrase, sentence, and paragraph clues) and text features (e.g., charts, headings/subheadings, font/format) to determine the meanings of unknown words.	4.RV.2.1.a.1: Use context clues and text features to determine the meaning of unknown words.
4.RV.2.2: Identify relationships among words, including more complex homographs, homonyms, synonyms, antonyms, and multiple meanings.	4.RV.2.2.a.1: Identify relationships among words, including homographs, homonyms, synonyms, antonyms, and multiple meanings.
4.RV.2.4: Apply knowledge of word structure elements (e.g., suffixes, prefixes, common Greek and Latin affixes and roots), known words, and word patterns to determine meaning.	4.RV.2.4.a.1: Apply knowledge of word structure elements (e.g., suffixes, prefixes, common Greek and Latin affixes and roots), known words, and word patterns to determine meaning.
4.RV.2.5: Consult reference materials, both print and digital (e.g., dictionary), to find the pronunciation and clarify the precise meanings of words and phrases.	4.RV.2.5.a.1: Identify the appropriate reference materials, print or digital, to use to find the pronunciation and clarify the meanings of words and phrases.
4.RV.3.1: Determine how words and phrases provide meaning to works of literature, including figurative language (e.g., similes, metaphors, or hyperbole).	4.RV.3.1.a.1: Determine how words and phrases provide meaning to works of literature, including figurative language (e.g., similes, metaphors, or hyperbole).
4.RV.3.2: Determine the meanings of general academic and content-specific words and phrases in a nonfiction text relevant to a fourth grade topic or subject area.	4.RV.3.2.a.1: Determine the meaning of general academic and content-specific words and phrases in a nonfiction text.
4.RV.3.3: Explain the meanings of proverbs, adages, and idioms in context.	4.RV.3.3.a.1: Explain the meanings of proverbs, adages, and idioms in context.

WRITING

Guiding Principle: *Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes. Students apply knowledge of language structure, language conventions, media techniques, figurative language, and genre to create, critique, and discuss writing. Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources to communicate their discoveries in ways that suit their purpose and audience.ⁱⁱ*

WRITING

There are four key areas found in the Writing section for grades 6-12: Writing Genres, the Writing Process, the Research Process, and Conventions of Standard English. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Writing.

Learning Outcome

Indiana Academic Standards	Content Connector
4.W.1: Write routinely over a variety of time frames and for a range of discipline-specific tasks, purposes, and audiences; apply reading standards to support reflection and response to literature and nonfiction texts.	4.W.1.a.1: Write routinely over a variety of time frames for varying tasks, purposes, and audiences.
	4.W.1.a.2: Apply reading standards to write in response to literature and nonfiction texts.
4.W.2.1: Write legibly in print or cursive, forming letters and words that can be read by others.	4.W.2.1.a.1: Produce a written response in print, cursive, or digital format, using appropriate spacing and alignment.
4.W.3.1: Write persuasive compositions in a variety of forms that – <ul style="list-style-type: none"> • In an introductory statement, clearly state an opinion to a particular audience. • Support the opinion with facts and details from various sources, including texts. • Use an organizational structure to group related ideas that support the purpose. • Connect opinion and reasons using words and phrases. 	4.W.3.1.a.1: Introduce the topic or text within persuasive writing by stating an opinion.
	4.W.3.1.a.2: Support a given opinion with facts and details in a persuasive composition.
	4.W.3.1.a.3: Use an organizational structure to group related ideas that support the purpose in a persuasive composition.
	4.W.3.1.a.4: Connect opinions and reasons using words and phrases in a

Indiana Academic Standards	Content Connector
<ul style="list-style-type: none"> • Provide a concluding statement or section related to the position presented. 	<p>persuasive composition.</p> <p>4.W.3.1.a.5: Provide a concluding statement or paragraph related to the position presented in a persuasive composition.</p> <p>4.W.3.1.a.6: Write persuasive compositions in a variety of formats.</p>
<p>4.W.3.2: Write informative compositions on a variety of topics that –</p> <ul style="list-style-type: none"> • Provide an introductory paragraph with a clear main idea. • Provide supporting paragraphs with topic and summary sentences. • Provide facts, specific details, and examples from various sources and texts to support ideas and extend explanations. • Connect ideas using words and phrases. • Include text features (e.g., formatting, pictures, graphics) and multimedia when useful to aid comprehension. • Use language and vocabulary appropriate for audience and topic. • Provide a concluding statement or section. 	<p>4.W.3.2.a.1: Provide an introductory paragraph with a clear main idea in an informative composition.</p> <p>4.W.3.2.a.2: Provide body paragraphs with topic and summary sentences in an informative composition.</p> <p>4.W.3.2.a.3: Provide evidence from various sources and texts to support ideas and extend explanations in an informative composition.</p> <p>4.W.3.2.a.4: Connect ideas using words and phrases in an informative composition.</p> <p>4.W.3.2.a.5: Include text features and multimedia when useful to aid comprehension in an informative composition.</p> <p>4.W.3.2.a.6: Use language and vocabulary appropriate for audience and topic in an informative composition.</p> <p>4.W.3.2.a.7: Provide a concluding statement or paragraph to support the information presented in an informative composition.</p> <p>4.W.3.2.a.8: Write informative compositions on a variety of topics.</p>
<p>4.W.3.3: Write narrative compositions in a variety of forms that –</p> <ul style="list-style-type: none"> • Establish an introduction, with a context to allow the reader to imagine the world of the event or experience. • Organize events that unfold naturally, using meaningful paragraphing and transitional words and phrases. • Use dialogue and descriptive details to develop events and reveal characters’ personalities, feelings, and responses to situations. • Employ vocabulary with sufficient sensory (sight, sound, smell, touch, taste) details to give clear pictures of ideas and events. 	<p>4.W.3.3.a.1: Create an introduction (e.g., situation, narrator, characters) in a narrative composition.</p> <p>4.W.3.3.a.2: Organize events using meaningful transitional words and phrases in a narrative composition.</p> <p>4.W.3.3.a.3: Use dialogue and descriptive details to develop events and reveal characters’ personalities, feelings, and responses to situations in a narrative composition.</p> <p>4.W.3.3.a.4: Utilize vocabulary with sensory details to give clear pictures of ideas and events in a narrative composition.</p>

Indiana Academic Standards	Content Connector
<ul style="list-style-type: none"> • Provide an ending that follows the narrated experiences or events. 	<p>4.W.3.3.a.5: Provide an ending that follows the narrated experiences or events in a narrative composition.</p> <p>4.W.3.3.a.6: Write narrative compositions in a variety of forms.</p>
<p>4.W.4: Apply the writing process to –</p> <ul style="list-style-type: none"> • Generate a draft by developing, selecting and organizing ideas relevant to topic, purpose, and genre; revise to improve writing, using appropriate reference materials (e.g., quality of ideas, organization, sentence fluency, word choice); edit writing for format and conventions (e.g., spelling, capitalization, usage, punctuation). • Use technology to interact and collaborate with others to publish legible documents. 	<p>4.W.4.a.1: Generate a draft by developing, organizing, and selecting ideas relevant to topic, purpose, and genre.</p> <p>4.W.4.a.2: Revise to improve writing, using appropriate reference materials (e.g., quality of ideas, organization, sentence fluency, word choice).</p> <p>4.W.4.a.3: Edit writing for format and conventions (e.g., spelling, capitalization, usage, punctuation).</p> <p>4.W.4.a.4: Use technology to interact and collaborate with others to publish legible documents.</p>
<p>4.W.5: Conduct short research on a topic.</p> <ul style="list-style-type: none"> • Identify a specific question to address (e.g., what is the history of the Indy 500?). • Use organizational features of print and digital sources efficiently to locate further information. • Determine the reliability of the sources. • Summarize and organize information in their own words, giving credit to the source. • Present the research information, choosing from a variety of formats. 	<p>4.W.5.a.1: Identify a specific topic or question of interest.</p> <p>4.W.5.a.2: Use organizational features of print and digital sources efficiently to locate further information.</p> <p>4.W.5.a.3: Determine the reliability of the sources.</p> <p>4.W.5.a.4: Summarize relevant information in their own words, giving credit to the source.</p> <p>4.W.5.a.5: Present the research information, choosing from a variety of formats.</p>
<p>4.W.6.1: Demonstrate command of English grammar and usage, focusing on:</p>	<p>4.W.6.1.a.1: Effectively use English grammar.</p>
<p>4.W.6.1a: Nouns/Pronouns – Writing sentences that include relative pronouns (e.g., who, which) and reflexive pronouns (e.g., myself, ourselves) and explaining their functions in the sentence.</p>	<p>4.W.6.1a.a.1: Write sentences using personal nouns.</p> <p>4.W.6.1a.a.2: Write sentences that include relative and reflexive pronouns.</p>
<p>4.W.6.1b: Verbs –</p>	<p>4.W.6.1b.a.1: Write sentences that use the progressive verb tenses.</p>

Indiana Academic Standards	Content Connector
<ul style="list-style-type: none"> • Writing sentences that use the progressive verb tenses. • Recognizing and correcting inappropriate shifts in verb tense. • Using modal auxiliaries (e.g., can, may, must). 	<p>4.W.6.1b.a.2: CC1. Recognize inappropriate shifts in verb tense.</p> <p>4.W.6.1b.a.3: CC2. Correct inappropriate shifts in verb tense.</p> <p>4.W.6.1b.a.4: Use modal auxiliaries (e.g. can, may, must).</p>
<p>4.W.6.1c: Adjectives/ Adverbs –Writing sentences using relative adverbs (e.g., where, when) and explaining their functions in the sentence.</p>	<p>4.W.6.1c.a.1: Write sentences using adjectives.</p> <p>4.W.6.1c.a.2: Write sentences using relative adverbs (e.g. where, when).</p>
<p>4.W.6.1d: Prepositions – Writing sentences that include prepositions, explaining their functions in the sentence.</p>	<p>4.W.6.1d.a.1: Write sentences that include prepositions.</p>
<p>4.W.6.1e: Usage – Writing correctly complete simple, compound, and complex declarative, interrogative, imperative, and exclamatory sentences, using coordinating and subordinating conjunctions (e.g., yet, nor, so).</p>	<p>4.W.6.1e.a.1: Correctly write simple sentences.</p> <p>4.W.6.1e.a.2: Correctly write compound sentences.</p> <p>4.W.6.1e.a.3: Correctly write complex sentence.</p> <p>4.W.6.1e.a.4: Use coordinating and subordinating conjunctions.</p>
<p>4.W.6.2: Demonstrate command of capitalization, punctuation, and spelling, focusing on:</p>	<p>4.W.6.2.a.1: Effectively use capitalization, punctuation, and spelling.</p>
<p>4.W.6.2a: Capitalization – Capitalizing names of magazines, newspapers, works of art, musical compositions, organizations, and the first word in quotations, when appropriate.</p>	<p>4.W.6.2a.a.1: Appropriately use capitalization.</p>
<p>4.W.6.2b: Punctuation –</p> <ul style="list-style-type: none"> • Correctly using apostrophes to form possessives and contractions. • Correctly using quotation marks and commas to mark direct speech. • Using a comma before a coordinating conjunction in a compound 	<p>4.W.6.2b.a.1: Correctly using apostrophes to form possessives and contractions.</p> <p>4.W.6.2b.a.2: Use quotation marks to indicate direct speech.</p>

Indiana Academic Standards	Content Connector
sentence.	4.W.6.2b.a.3: Use a comma before a coordinating conjunction in a compound sentence.
4.W.6.2d: Spelling – Using spelling patterns and generalizations (e.g., word families, position-based spellings, syllable patterns, ending rules, meaningful word parts, homophones/homographs) in writing single and multi-syllable words.	4.W.6.2d.a.1: Use spelling patterns (e.g., word families, position-based spellings, syllable patterns) in writing single and multi-syllable words.

DRAFT

Guiding Principle: *Students listen actively and communicate effectively for a variety of purposes, including for learning, enjoyment, persuasion, and the exchange of information and ideas. Students adjust their use of language to communicate effectively with a variety of audiences and for different purposes. Students develop an understanding of and respect for diversity in language use, patterns, and dialects.ⁱⁱⁱ*

SPEAKING AND LISTENING

There are three key areas found in the Speaking and Listening section for grades 6-12: Discussion and Collaboration, Comprehension, and Presentation of Knowledge and Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Speaking and Listening.

Learning Outcome

Indiana Academic Standards	Content Connector
4.SL.1: Listen actively and adjust the use of spoken language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.	
4.SL.2.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) on grade-appropriate topics and texts, building on others' ideas and expressing personal ideas clearly.	4.SL.2.1.a.1: Participate in collaborative discussions (one-on-one and in groups) on grade appropriate topics or texts by identifying key ideas of the discussion.
	4.SL.2.1.a.2: Participate in collaborative discussions (one-on-one and in groups) on grade appropriate topics or texts by adding relevant ideas and expressing personal ideas.
4.SL.2.2: Explore ideas under discussion by drawing on readings and other information.	
4.SL.2.3: Demonstrate knowledge and use of agreed-upon rules for discussions and carry out assigned roles.	4.SL.2.3.a.1: Demonstrate knowledge and use of agreed-upon rules for discussions
	4.SL.2.3.a.2: Identify and serve in roles for small group discussions or projects.
4.SL.2.4: Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link	4.SL.2.4.a.1: Ask questions to check understanding of information presented in collaborative discussions

Indiana Academic Standards	Content Connector
to the remarks of others.	4.SL.2.4.a.2: Stay on topic in collaborative discussions
	4.SL.2.4.a.3: Link personal ideas and comments to the ideas shared by others in collaborative discussions.
4.SL.2.5: Review the key ideas expressed and explain personal ideas in reference to the discussion.	
4.SL.3.1: Summarize major ideas and supportive evidence from text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	4.SL.3.1.a.1: Summarize the main ideas and supporting details of a text read aloud.
4.SL.3.2: Identify and use evidence a speaker provides to support particular points.	4.SL.3.1.a.2: Summarize the main ideas and supporting details of information presented in diverse media and formats, including visually, quantitatively

DRAFT

MEDIA LITERACY

Guiding Principle: *Students develop critical thinking about the messages received and created by media. Students recognize that media are a part of culture and function as agents of socialization and develop understanding that people use individual skills, beliefs, and experiences to construct their own meanings from media messages. Students develop media literacy skills in order to become more informed, reflective, and engaged participants in society.^{iv}*

MEDIA LITERACY

By demonstrating the skills listed in Media Literacy, students should be able to meet the Learning Outcome for Media Literacy.

Learning Outcome

Indiana Academic Standards	Content Connector
4.ML.2.1: Recognize claims in print, image, and multimedia and identify evidence used to support these claims.	4.ML.2.1.a.1: Recognize claims in print, image, and multimedia.
	4.ML.2.1.a.2: Identify evidence used to support these claims.

ⁱ Adapted from Standards for the English Language. National Council of Teachers of English and International Reading Association, 1996. Available at <http://www.ncte.org/library/NCTEFiles/Resources/Books/Sample/StandardsDoc.pdf>.

ⁱⁱ Ibid.

ⁱⁱⁱ Ibid.

^{iv} Adapted from Standards for the English Language. National Council of Teachers of English and International Reading Association, 1996. Available at <http://www.ncte.org/library/NCTEFiles/Resources/Books/Sample/StandardsDoc.pdf>.

GRADE 5

READING

Guiding Principle: *Students read a wide range of fiction, nonfiction, classic, and contemporary works, to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They read a wide range of literature in many genres from a variety of time periods and cultures from around the world to build an understanding of the many dimensions (e.g., philosophical, ethical, aesthetic) of human experience. They draw on their prior experience, their interactions with other readers and writers, and reading skills that they have developed and refined.¹*

READING: Foundations

There are four key areas found in the Reading: Foundations section for grades K-5: Print Concepts, Phonological Awareness, Phonics, and Fluency. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Foundations.

Learning Outcome

Indiana Academic Standards	Content Connector
5.RF.1: Apply foundational reading skills to demonstrate reading fluency and comprehension.	5.RF.1.a.1: Apply foundational reading skills to build fluency.
	5.RF.1.a.2: Apply foundational skills to build comprehension.
5.RF.4.6: Use knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multi-syllabic words in context.	5.RF.4.6.a.1: Use knowledge of all letter-sound correspondences.
5.RF.5: Orally read grade-level appropriate or higher texts smoothly and accurately, with expression that connotes comprehension at the independent level.	5.RF.5.a.1: Orally read age appropriate instructional level text smoothly and accurately.
	5.RF.5.a.2: Orally read age appropriate instructional level text and demonstrate comprehension.

READING: Literature

There are three key areas found in the Reading: Literature section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, and Synthesis and Connection of Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Literature.

Learning Outcome

Indiana Academic Standards	Content Connector
<p>5.RL.1: Read and comprehend a variety of literature within a range of complexity appropriate for grades 4-5. By the end of grade 5, students interact with texts proficiently and independently.</p>	<p>5.RL.1.a.1: Read a variety of grade level appropriate literature.</p>
	<p>5.RL.1.a.2: Comprehend a variety of grade level appropriate literature.</p>
<p>5.RL.2.1: Quote accurately from a text when explaining what a text says explicitly and when drawing inferences from the text.</p>	<p>5.RL.2.1.a.1: Refer to details and examples in a text when explaining what the text says explicitly.</p>
	<p>5.RL.2.1.a.2: Refer to specific text evidence to support inferences.</p>
<p>5.RL.2.2: Determine a theme of a story, play, or poem from details in the text, including how characters respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text.</p>	<p>5.RL.2.2.a.1: Summarize the text.</p>
	<p>5.RL.2.2.a.2: Determine the theme of a story, drama, or poem including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic.</p>
<p>5.RL.2.3: Describe two or more characters, settings, or events in a story or play, drawing on specific details in the text, and how they impact the plot.</p>	<p>5.RL.2.3.a.1: Describe characters, settings, events within a story; provide or identify specific details in the text to support the description.</p>
<p>5.RL.3.1: Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, play, or poem.</p>	<p>5.RL.3.1.a.1: Explain how a series of chapters, scenes, or stanzas fit together to provide the overall structure of a particular text.</p>
<p>5.RL.3.2: Describe how a narrator’s or speaker’s point of view influences how events are portrayed.</p>	<p>5.RL.3.2.a.1: Describe how a narrator’s or speaker’s point of view influences how events are portrayed.</p>
<p>5.RL.4.1: Analyze how visual and multimedia presentations and representations can enhance the meaning of a text.</p>	<p>5.RL.4.1.a.1: Identify how visual and multimedia presentations and representations can enhance the meaning of a text.</p>

Indiana Academic Standards	Content Connector
5.RL.4.2: Compare and contrast stories in the same genre on their approaches to similar themes and topics.	5.RL.4.2.a.1: Compare and contrast stories in the same genre on their approaches to similar themes and topics.

READING: *Nonfiction*

There are three key areas found in the Reading: Nonfiction section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, and Synthesis and Connection of Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Nonfiction.

Learning Outcome

Indiana Academic Standards	Content Connector
5.RN.1: Read and comprehend a variety of nonfiction within a range of complexity appropriate for grades 4-5. By the end of grade 5, students interact with texts proficiently and independently.	5.RN.1.a.1: Read a variety of nonfiction texts.
5.RN.2.1: Quote accurately from a text when explaining what a text says explicitly and when drawing inferences from the text.	5.RN.2.1.a.1: Quote accurately from a text when explaining what the text says explicitly.
	5.RN.2.1.a.2: Quote accurately from a text to support inferences.
5.RN.2.2: Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.	5.RN.2.2.a.1: Determine main ideas, and identify key details to support main ideas.
	5.RN.2.2.a.2: Summarize the text.
5.RN.2.3: Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.	5.RN.2.3.a.1: Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information across texts.
5.RN.3.1: Apply knowledge of text features in multiple print and digital sources to locate information, gain meaning from a text, or solve a problem.	5.RN.3.1.a.1: Apply knowledge of text features in multiple print and digital sources to locate information, gain meaning from a text, or solve a problem.
5.RN.3.2: Compare and contrast the organizational structure of events,	5.RN.3.2.a.1: Compare and contrast the overall structure of events, ideas,

Indiana Academic Standards	Content Connector
ideas, concepts, or information in two or more texts.	concepts, or information in two or more texts.
5.RN.3.3: Analyze multiple accounts of the same event or topic, noting important similarities and differences in the perspectives the accounts represent.	5.RN.3.3.a.1: Determine important similarities and differences in the perspectives of multiple accounts of the same event or topic.
5.RN.4.1: Explain how an author uses reasons and evidence to support claims in a text, identifying which reasons and evidence support which claims.	5.RN.4.1.a.1: Explain how an author uses reasons and evidence to support particular points in a text.
5.RN.4.2: Combine information from several texts or digital sources on the same topic in order to demonstrate knowledge about the subject.	5.RN.4.2.a.1: Combine information from several texts or digital sources on the same topic in order to demonstrate knowledge about the subject.

READING: *Vocabulary*

There are two key areas found in the Reading: Vocabulary section for grades 6-12: Vocabulary Building and Vocabulary in Literature and Nonfiction Texts. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Vocabulary.

Learning Outcome

Indiana Academic Standards	Content Connector
5.RV.1: Build and use accurately general academic and content-specific words and phrases.	5.RV.1.a.1: Use general academic and content specific words and phrases accurately.
5.RV.2.1: Select and apply context clues (e.g., word, phrase, sentence, and paragraph clues) and text features to determine the meanings of unknown words.	5.RV.2.1.a.1: Use context-and text features to determine the meanings of unknown words.
5.RV.2.2: Identify relationships among words, including multiple meanings, synonyms and antonyms, homographs, metaphors, similes, and analogies.	5.RV.2.2.a.1: Identify relationships among words, including multiple meanings, synonyms and antonyms, homographs, metaphors, similes, and analogies.
5.RV.2.4: Apply knowledge of word structure elements, known words, and word patterns to determine meaning (e.g., word origins, common Greek and Latin affixes and roots, parts of speech).	5.RV.2.4.a.1: Use common grade-appropriate known words and word patterns to as clues to the meaning of an unknown word.
5.RV.2.5: Consult reference materials, both print and digital (e.g.,	5.RV.2.5.a.1: Consult reference materials (e.g., dictionaries, glossaries,

Indiana Academic Standards	Content Connector
dictionary, thesaurus), to find the pronunciation and clarify the precise meanings of words and phrases.	thesauruses) to find the <i>pronunciation</i> of a word.
	5.RV.2.5.a.2: Consult reference materials (e.g., dictionaries, glossaries, thesauruses) to find the <i>precise meaning</i> of a word.
5.RV.3.1: Determine how words and phrases provide meaning to works of literature, including imagery, symbolism, and figurative language (e.g., similes, metaphors, hyperbole, or allusion).	5.RV.3.1.a.1: Determine the meaning of figurative language in works of literature, including imagery, symbolism, and figurative language.
5.RV.3.2: Determine the meaning of general academic and content-specific words and phrases in a nonfiction text relevant to a fifth grade topic or text.	5.RV.3.2.a.1: Determine the meaning of general academic and content-specific words and phrases in a nonfiction text relevant to a fifth grade topic or text.
5.RV.3.3: Analyze the meanings of proverbs, adages, and idioms in context.	5.RV.3.3.a.1: Identify the meaning of common idioms, proverbs, or adages.

WRITING

Guiding Principle: *Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes. Students apply knowledge of language structure, language conventions, media techniques, figurative language, and genre to create, critique, and discuss writing. Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources to communicate their discoveries in ways that suit their purpose and audience.ⁱⁱ*

WRITING

There are four key areas found in the Writing section for grades 6-12: Writing Genres, the Writing Process, the Research Process, and Conventions of Standard English. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Writing.

Learning Outcome

Indiana Academic Standards	Content Connector
5.W.1: Write routinely over a variety of time frames and for a range of discipline-specific tasks, purposes, and audiences; apply reading standards to support reflection and response to literature and nonfiction texts.	5.W.1.a.1: Write routinely over a variety of time frames for varying tasks, purposes, and audiences.
	5.W.1.a.2: Apply reading standards to write in response to literature and nonfiction texts.

Indiana Academic Standards	Content Connector
<p>5.W.3.1: Write persuasive compositions in a variety of forms that –</p> <ul style="list-style-type: none"> • Clearly present a position in an introductory statement to an identified audience. • Support the position with qualitative and quantitative facts and details from various sources, including texts. • Use an organizational structure to group related ideas that support the purpose. • Use language appropriate for the identified audience. • Connect reasons to the position using words, phrases, and clauses. • Provide a concluding statement or section related to the position presented. 	<p>5.W.3.1.a.1: Provide an introduction that states own position within persuasive composition.</p>
	<p>5.W.3.1.a.2: Use language appropriate to the identified audience in a persuasive composition.</p>
	<p>5.W.3.1.a.3: Provide relevant facts and reasons to support stated opinion within persuasive writing.</p>
	<p>5.W.3.1.a.4: Organize ideas to support the purpose in a persuasive composition.</p>
	<p>5.W.3.1.a.5: Links positions and reasons using words, phrases, and clauses in a persuasive composition.</p>
	<p>5.W.3.1.a.6: Provide a clear concluding statement or paragraph related to the opinion stated in a persuasive composition.</p>
	<p>5.W.3.1.a.7: Write persuasive compositions in a variety of forms.</p>
<p>5.W.3.2: Write informative compositions on a variety of topics that –</p> <ul style="list-style-type: none"> • Introduce a topic; organize sentences and paragraphs logically, using an organizational form that suits the topic. • Employ sufficient examples, facts, quotations, or other information from various sources and texts to give clear support for topics. • Connect ideas within and across categories using transition words (e.g., therefore, in addition). • Include text features (e.g., formatting, pictures, graphics) and multimedia when useful to aid comprehension. • Use appropriate language, vocabulary, and sentence variety to convey meaning; for effect; and to support a tone and formality appropriate to the topic and audience. • Provide a concluding statement or section related to the information or explanation presented. 	<p>5.W.3.2.a.1: Introduce a topic in an informative composition.</p>
	<p>5.W.3.2.a.2: Arrange sentences and paragraphs logically, in an organizational form appropriate to the topic in an informative composition.</p>
	<p>5.W.3.2.a.3: Provide examples, facts, quotations, or other information to support a topic in an informative composition.</p>
	<p>5.W.3.2.a.4: Use appropriate language, vocabulary, and sentence variety to support a tone and formality in an informative composition.</p>
	<p>5.W.3.2.a.5: Use transitional words, phrases, and clauses to connect ideas and create cohesion in an informative composition.</p>
	<p>5.W.3.2.a.6: Provide a concluding statement or paragraph related to the information or explanation presented in an informative composition.</p>

Indiana Academic Standards	Content Connector
	<p>5.W.3.2.a.7: Include text features and multimedia when useful to aid comprehension in an informative composition.</p>
	<p>5.W.3.2.a.8: Write informative compositions on a variety of topics.</p>
<p>5.W.3.3: Write narrative compositions in a variety of forms that –</p> <ul style="list-style-type: none"> • Develop the exposition (e.g., describe the setting, establish the situation, introduce the narrator and/or characters). • Develop an event sequence (e.g., conflict, climax, resolution) that unfolds naturally, connecting ideas and events using transitions. • Use narrative techniques, such as dialogue, description, and pacing to develop experiences and events or show the responses of characters to situations. • Use precise and expressive vocabulary and figurative language for effect. • Provide an ending that follows from the narrated experiences or events. 	<p>5.W.3.3.a.1: Develop the exposition (e.g., describe the setting, establish the situation, introduce the narrator and/or characters) in a narrative composition.</p>
	<p>5.W.3.3.a.2: Develop an event sequence (e.g., conflict, climax, resolution) that unfolds naturally, connecting ideas and events using transitions in a narrative composition.</p>
	<p>5.W.3.3.a.3: Use narrative techniques, such as dialogue, description, and pacing, to develop experiences and events or show the responses of characters to situations in a narrative composition.</p>
	<p>5.W.3.3.a.4: Use precise and expressive vocabulary in a narrative composition.</p>
	<p>5.W.3.3.a.5: Use figurative language in a narrative composition.</p>
	<p>5.W.3.3.a.6: Provide an ending that follows from the narrated events in a narrative composition.</p>
<p>5.W.4: Apply the writing process to –</p> <ul style="list-style-type: none"> • Generate a draft by developing, selecting and organizing ideas relevant to topic, purpose, and genre; revise to improve writing, using appropriate reference materials (e.g., quality of ideas, organization, sentence fluency, word choice); and edit writing for format and standard English conventions. • Use technology to interact and collaborate with others to publish legible documents. 	<p>5.W.3.3.a.7: Write narrative compositions in a variety of forms.</p>
	<p>5.W.4.a.1: Generate a draft by developing, organizing, and selecting ideas relevant to topic, purpose, and genre.</p>
	<p>5.W.4.a.2: Revise to improve writing, using appropriate reference materials (e.g., quality of ideas, organization, sentence fluency, word choice).</p> <p>5.W.4.a.3: Edit writing for format and conventions (e.g., spelling, capitalization, usage, punctuation).</p>

Indiana Academic Standards	Content Connector
	5.W.4.a.4: Use technology to interact and collaborate with others to publish legible documents.
<p>5.W.5: Conduct short research assignments and tasks on a topic.</p> <ul style="list-style-type: none"> • With support, formulate a research question (e.g., what were John Wooden’s greatest contributions to college basketball?). • Identify and acquire information through reliable primary and secondary sources. • Summarize and paraphrase important ideas and supporting details, and include direct quotations where appropriate, citing the source of information. • Avoid plagiarism and follow copyright guidelines for use of images, pictures, etc. • Present the research information, choosing from a variety of sources. 	5.W.5.a.1: Formulate a research question.
	5.W.5.a.2: Gather information through reliable primary and secondary sources.
	5.W.5.a.3: Summarize and paraphrase important ideas and supporting details, and include direct quotations where appropriate, citing the source of information.
	5.W.5.a.4: Follow copyright guidelines for use of images, pictures, etc. to avoid plagiarism.
5.W.6.1: Demonstrate command of English grammar and usage, focusing on:	5.W.6.1.a.1: Effectively use English grammar.
<p>5.W.6.1b: Verbs –</p> <ul style="list-style-type: none"> • Writing sentences that use the perfect (e.g., I have walked, I had walked, I will have walked) verb tenses. • Correctly using verbs that are often misused (e.g., lie/lay, sit/set, rise/raise). 	5.W.6.1b.a.1: Write sentences that use the perfect verb tenses (e.g., I have walked, I had walked, I will have walked).
	5.W.6.1b.a.2: Correctly use verbs that are often misused.
<p>5.W.6.1d: Prepositions – Writing sentences that include prepositional phrases and explaining their functions in the sentence.</p>	5.W.6.1d.a.1: Write sentences that use prepositional phrases.
	5.W.6.1d.a.2: Explain the functions of prepositional phrases in the sentence.
5.W.6.1e: Usage – Writing correctly simple, compound, and complex declarative, interrogative, imperative, and exclamatory sentences, using correlative conjunctions (e.g., either/or, neither/nor).	5.W.6.1e.a.1: Correctly write simple, compound, and complex declarative, interrogative, imperative, and exclamatory sentences, using correlative conjunctions.

Indiana Academic Standards	Content Connector
5.W.6.2: Demonstrate command of capitalization, punctuation, and spelling, focusing on:	5.W.6.2.a.1: Effectively use capitalization, punctuation, and spelling.
5.W.6.2a: Capitalization – Applying correct usage of capitalization in writing.	5.W.6.2a.a.1: Apply correct usage of capitalization in writing.
5.W.6.2b: Punctuation – <ul style="list-style-type: none"> Applying correct usage of apostrophes and quotation marks in writing. Using a comma for appositives, to set off the words yes and no, to set off a tag question from the rest of the sentence, and to indicate direct address. 	5.W.6.2b.a.1: Apply correct usage of apostrophes in writing.
	5.W.6.2b.a.2: Apply correct usage of quotation marks in writing.
5.W.6.2c: Spelling – Applying correct spelling patterns and generalizations in writing.	5.W.6.2c.a.1: Apply correct spelling patterns and generalizations in writing.

SPEAKING AND LISTENING

Guiding Principle: *Students listen actively and communicate effectively for a variety of purposes, including for learning, enjoyment, persuasion, and the exchange of information and ideas. Students adjust their use of language to communicate effectively with a variety of audiences and for different purposes. Students develop an understanding of and respect for diversity in language use, patterns, and dialects.ⁱⁱⁱ*

SPEAKING AND LISTENING

There are three key areas found in the Speaking and Listening section for grades 6-12: Discussion and Collaboration, Comprehension, and Presentation of Knowledge and Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Speaking and Listening.

Learning Outcome

Indiana Academic Standards	Content Connector
5.SL.1: Listen actively and adjust the use of spoken language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.	5.SL.1.a.1: Provide evidence of being prepared for discussions on a topic or text through appropriate statements made during discussion.
5.SL.2.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) on grade-appropriate topics and texts, building on others’ ideas and expressing personal ideas clearly.	5.SL.2.1.a.1: Participate in collaborative discussions (one-on-one and in groups) on grade appropriate topics or texts by identifying key ideas of the discussion.

Indiana Academic Standards	Content Connector
	5.SL.2.1.a.2: Participate in collaborative discussions (one-on-one and in groups) on grade appropriate topics or texts by adding relevant ideas and expressing personal ideas.
5.SL.2.2: Reflect on and contribute to ideas under discussion by drawing on readings and other resources.	5.SL.2.2.a.1: Provide evidence of being prepared for discussions on a topic or text through appropriate statements made during discussion.
5.SL.2.3: Establish and follow agreed-upon rules for discussion.	5.SL.2.3.a.1: Demonstrate knowledge and use of agreed-upon rules for discussions 5.SL.2.3.a.2: Identify and serve in roles for small group discussions or projects.
5.SL.2.4: Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.	5.SL.2.4.a.1: Ask questions to check understanding of information presented in collaborative discussions 5.SL.2.4.a.2: Stay on topic in collaborative discussions
5.SL.2.5: Review the key ideas expressed and draw conclusions in reference to information and knowledge gained from the discussions.	5.SL.2.5.a.1: Review the key ideas expressed within a collaborative discussion.
5.SL.3.1: Orally summarize or respond to a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	5.SL.3.1.a.1: Summarize the main ideas and supporting details of a text read aloud. 5.SL.3.1.a.2: Summarize the main ideas and supporting details of information presented in diverse media and formats, including visually, quantitatively.
5.SL.3.2: Summarize a speaker's points as they relate to main ideas or supporting details and demonstrate how claims are supported by reasons and evidence.	5.SL.3.2.a.1: Summarize the points a speaker makes. 5.SL.3.2.a.2: Identify the reasons and evidence a speaker provides to support particular points.
5.SL.4.1: Using appropriate language, present information on a topic or text, narrative, or opinion in an organized manner, with effective introductions and conclusions, using appropriate structure, appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly and concisely at an understandable pace.	5.SL.4.1.a.1: Report on a topic, story or claim using a logical sequence of ideas, appropriate facts, and relevant, descriptive details.
5.SL.4.2: Create engaging presentations that include multimedia components and visual displays when appropriate to enhance the development of main ideas or themes.	5.SL.4.2.a.1: Create a presentation with a clear focus, using various media to emphasize facts, details or theme.

MEDIA LITERACY

Guiding Principle: *Students develop critical thinking about the messages received and created by media. Students recognize that media are a part of culture and function as agents of socialization and develop understanding that people use individual skills, beliefs, and experiences to construct their own meanings from media messages. Students develop media literacy skills in order to become more informed, reflective, and engaged participants in society.^{iv}*

MEDIA LITERACY

By demonstrating the skills listed in Media Literacy, students should be able to meet the Learning Outcome for Media Literacy.

Learning Outcome

Indiana Academic Standards	Content Connector
5.ML.1: Identify how information found in electronic, print, and mass media is used to inform, persuade, entertain, and transmit culture.	5.ML.1.a.1: Identify how information found in electronic, print, and mass media is used to inform, persuade, entertain, and transmit culture.
5.ML.2.1: Review claims made in various types of media and evaluate evidence used to support these claims.	5.ML.2.1.a.1: Review claims made in various types of media.
	5.ML.2.1.a.2: Evaluate evidence used to support these claims.
5.ML.2.2: Identify the role of the media in focusing people’s attention on events and in forming their opinions on issues.	5.ML.2.2.a.1: Identify the role of the media in focusing people’s attention on events.
	5.ML.2.2.a.2: Identify the role of the media in forming people's opinions on issues.

ⁱ Adapted from Standards for the English Language. National Council of Teachers of English and International Reading Association, 1996. Available at <http://www.ncte.org/library/NCTEFiles/Resources/Books/Sample/StandardsDoc.pdf>.

ⁱⁱ Ibid.

ⁱⁱⁱ Ibid.

^{iv} Adapted from Standards for the English Language. National Council of Teachers of English and International Reading Association, 1996. Available at <http://www.ncte.org/library/NCTEFiles/Resources/Books/Sample/StandardsDoc.pdf>.

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GRADE 6

READING

Guiding Principle: *Students read a wide range of fiction, nonfiction, classic, and contemporary works, to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They read a wide range of literature in many genres from a variety of time periods and cultures from around the world to build an understanding of the many dimensions (e.g., philosophical, ethical, aesthetic) of human experience. They draw on their prior experience, their interactions with other readers and writers, and reading skills that they have developed and refined.¹*

READING: Literature

There are three key areas found in the Reading: Literature section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, and Synthesis and Connection of Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Literature.

Learning Outcome

Indiana Academic Standards	Content Connector
6.RL.1: Read a variety of literature within a range of complexity appropriate for grades 6-8. By the end of grade 6, students interact with texts proficiently and independently at the low end of the range and with scaffolding as needed at the high end of the range.	6.RL.1.a.1: Read a variety of grade level appropriate literature
	6.RL.1.a.2: Comprehend a variety of grade level appropriate literature
6.RL.2.1: Cite textual evidence to support analysis of what a text says explicitly as well as inferences drawn from the text.	6.RL.2.1.a.1: Use specific details in a text to explain what a text says explicitly.
	6.RL.2.1.a.2: Use specific details from the text to support inferences.
6.RL.2.2: Determine how a theme or central idea of a work of literature is conveyed through particular details; provide a detailed, objective summary of the text.	6.RL.2.2.a.1: Determine how a theme or central idea of a work of literature is conveyed through particular details.

Indiana Academic Standards	Content Connector
	6.RL.2.2.a.2: Provide a detailed, objective summary of the text.
6.RL.2.3: Explain how a plot unfolds in a series of episodes as well as how the characters respond or change as the narrative advances and moves toward a resolution.	6.RL.2.3.a.1: Explain how a plot unfolds in a series of episodes.
	6.RL.2.3.a.2: Explain how the characters respond or change as the narrative advances and moves toward a resolution.
6.RL.3.1: Analyze how a particular sentence, chapter, scene, or stanza fits into the overall structure of a work of literature and contributes to the development of the theme, characterization, setting, or plot.	6.RL.3.1.a.1: Analyze how a particular sentence, chapter, scene, or stanza fits into the overall structure of a work of literature
	6.RL.3.1.a.2: Analyze how a particular sentence, chapter, scene, or stanza contributes to the development of the theme, characterization, setting, or plot.
6.RL.3.2: Explain how an author develops the point of view of the narrator or speaker in a work of literature and how the narrator or speaker impacts the mood, tone, and meaning of a text.	6.RL.3.2.a.1: Explain how an author develops the point of view of the narrator or speaker in a text.
	6.RL.3.2.a.2: Explain how the narrator or speaker impacts the mood, tone, and meaning of a text.
6.RL.4.1: Compare and contrast the experience of reading a story, play, or poem with listening to or viewing an audio, video, or live version of the text, including contrasting what they “see” and “hear” when reading the text with what they perceive when they listen or watch.	
6.RL.4.2: Compare and contrast works of literature in different forms or genres (e.g., stories and poems; historical novels and fantasy stories) in terms of their approaches to similar themes and topics.	6.RL.4.2.a.1: Compare and contrast works of literature in different forms or genres (e.g., stories and poems; historical novels and fantasy stories) in terms of their approaches to similar themes and topics.

READING: Nonfiction

There are three key areas found in the Reading: Nonfiction section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, and Synthesis and Connection of Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Nonfiction.

Learning Outcome

Indiana Academic Standards	Content Connector
6.RN.1: Read a variety of nonfiction within a range of complexity appropriate for grades 6-8. By the end of grade 6, students interact with texts proficiently and independently at the low end of the range and with scaffolding as needed at the high end of the range.	6.RN.1.a.1: Read a variety of nonfiction texts.
6.RN.2.1: Cite textual evidence to support analysis of what a text says explicitly as well as inferences drawn from the text.	6.RN.2.1.a.1: Use specific details in a text to explain what a text says explicitly.
	6.RN.2.1.a.2: Use specific details from the text to support inferences.
6.RN.2.2: Determine how a central idea of a text is conveyed through particular details; provide an objective summary of the text.	6.RN.2.2.a.1: Determine how a central idea of a text is conveyed through particular details.
	6.RN.2.2.a.2: Provide a summary of the text distinct from personal opinions or judgments.
6.RN.2.3: Analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text (e.g., through examples or anecdotes).	6.RN.2.3.a.1: Analyze in detail how a key <i>individual</i> is introduced, illustrated and elaborated in a text.
	6.RN.2.3.a.2: Analyze in detail how a key <i>event</i> is introduced, illustrated and elaborated in a text.
	6.RN.2.3.a.3: Analyze in detail how a key <i>idea</i> is introduced, illustrated and elaborated in a text.

Indiana Academic Standards	Content Connector
<p>6.RN.3.2: Analyze how a particular sentence, paragraph, chapter, or section fits into the overall structure of a text and contributes to the development of the ideas.</p>	<p>6.RN.3.2.a.1: Analyze how a particular sentence, paragraph, chapter, or section fits into the overall structure of a text</p>
	<p>6.RN.3.2.a.2: Analyze how a particular sentence, paragraph, chapter, or section contributes to the development of the ideas</p>
<p>6.RN.3.3: Determine an author’s perspective or purpose in a text, and explain how it is conveyed in the text.</p>	<p>6.RN.3.3.a.1: Determine an author’s perspective or purpose</p>
	<p>6.RN.3.3.a.2: Explain how author’s perspective is conveyed.</p>
<p>6.RN.4.1: Trace and evaluate the argument and specific claims in a text, distinguishing claims that the author supports with reasons and evidence from claims that are not supported.</p>	<p>6.RN.4.1.a.1: Trace the argument and specific claims in a text.</p>
	<p>6.RN.4.1.a.2: Evaluate the claim or argument; determine if it is supported by evidence.</p>
<p>6.RN.4.2: Integrate information presented in different media or formats (e.g., visually, quantitatively, verbally) to demonstrate a coherent understanding of a topic or issue.</p>	<p>6.RN.4.2.a.1: Integrate information from various sources to demonstrate understanding of a topic or issue.</p>
<p>6.RN.4.3: Compare and contrast one author’s presentation of events with that of another.</p>	<p>6.RN.4.3.a.1: Compare and contrast one author’s presentation of events with that of another.</p>

READING: Vocabulary

There are two key areas found in the Reading: Vocabulary section for grades 6-12: Vocabulary Building and Vocabulary in Literature and Nonfiction Texts. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Vocabulary.

Learning Outcome

Indiana Academic Standards	Content Connector
<p>6.RV.1: Acquire and use accurately grade-appropriate general academic and content-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.</p>	<p>6.RV.1.a.1: Acquire general academic and content- specific words and phrases accurately</p> <p>6.RV.1.a.2: Use general academic and content- specific words and phrases accurately.</p>
<p>6.RV.2.1: Use context to determine or clarify the meaning of words and phrases.</p>	<p>6.RV.2.1.a.1: Use context to determine the meaning of words or phrases.</p>
<p>6.RV.2.2: Use the relationship between particular words (e.g., cause/effect, part/whole, item/category) to better understand each of the words.</p>	<p>6.RV.2.2.a.1: Use the relationship between particular words (e.g., cause/effect, part/whole, item/category) to better understand each of the words.</p>
<p>6.RV.2.3: Distinguish among the connotations of words with similar denotations.</p>	<p>6.RV.2.3.a.1: Distinguish among the connotations of words with similar denotations.</p>
<p>6.RV.2.4: Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).</p>	<p>6.RV.2.4.a.1: Use common, grade-appropriate Greek or Latin roots and affixes and roots as clues to the meaning of a word.</p>
<p>6.RV.2.5: Consult reference materials, both print and digital (e.g., dictionary, thesaurus), to find the pronunciation of a word or determine or clarify its precise meaning, part of speech, or origin.</p>	<p>6.RV.2.5.a.1: Consult reference materials (e.g., dictionaries, glossaries, thesauruses) to find the <i>pronunciation</i> of a word.</p>
	<p>6.RV.2.5.a.2: Consult reference materials (e.g., dictionaries, glossaries, thesauruses) to find the <i>synonym</i> for a word.</p>

Indiana Academic Standards	Content Connector
	6.RV.2.5.a.3: Consult reference materials (e.g., dictionaries, glossaries, thesauruses) to find the <i>precise meaning</i> of a word.
6.RV.3.1: Determine the meaning of words and phrases as they are used in works of literature, including figurative and connotative meanings; analyze the impact of a specific word choice on meaning and tone.	6.RV.3.1.a.1: Determine the meaning of words and phrases as they are used in a <i>work of literature</i> including figurative (i.e., metaphors, similes, and idioms) and connotative meanings. 6.RV.3.1.a.2: Analyze the impact of a specific word choice on meaning and tone.
6.RV.3.2: Determine the meaning of words and phrases as they are used in a nonfiction text, including figurative, connotative, and technical meanings.	6.RV.3.2.a.1: Determine the meaning of words and phrases as they are used in a <i>nonfiction text</i> including figurative (i.e., metaphors, similes, and idioms) connotative, and technical meanings.
6.RV.3.3: Interpret figures of speech (e.g., personification) in context.	6.RV.3.3.a.1: Interpret figures of speech (e.g., personification) in context.

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WRITING

Guiding Principle: *Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes. Students apply knowledge of language structure, language conventions, media techniques, figurative language, and genre to create, critique, and discuss writing. Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources to communicate their discoveries in ways that suit their purpose and audience.ⁱⁱ*

WRITING

There are four key areas found in the Writing section for grades 6-12: Writing Genres, the Writing Process, the Research Process, and Conventions of Standard English. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Writing.

Learning Outcome

Indiana Academic Standards	Content Connector
6.W.1: Write routinely over a variety of time frames for a range of tasks, purposes, and audiences; apply reading standards to support analysis, reflection, and research by drawing evidence from literature and nonfiction texts.	6.W.1.a.1: Write routinely over a variety of time frames for varying tasks, purposes, and audiences.
	6.W.1.a.2: Apply reading standards to write in response to literature and nonfiction texts.
6.W.3.1: Write arguments in a variety of forms that – <ul style="list-style-type: none"> ● Introduce claim(s), using strategies such as textual analysis, comparison/contrast and cause/effect. ● Use an organizational structure to group related ideas that support the argument. ● Support claim(s) with clear reasons and relevant evidence, using credible sources and demonstrating an understanding of the topic or text. ● Establish and maintain a consistent style and tone appropriate to purpose and audience. ● Use appropriate transitions that enhance the progression of the text and 	6.W.3.1.a.1: Introduce claim(s), using strategies such as textual analysis, comparison/contrast and cause/effect in an argument.
	6.W.3.1.a.2: Use an organizational structure to group related ideas that support the argument.
	6.W.3.1.a.3: Support claim(s) with clear reasons and relevant evidence, using credible sources and demonstrating an understanding of the topic or text in an argument.
	6.W.3.1.a.4: Establish and maintain a consistent style and tone appropriate to purpose and audience in an argument.

Indiana Academic Standards	Content Connector
clarify the relationships among claim(s) and reasons. <ul style="list-style-type: none"> ● Provide a concluding statement or section that follows from the argument presented. 	6.W.3.1.a.5: Use appropriate transitions that enhance the progression of the text and clarify the relationships among claim(s) and reasons in an argument. 6.W.3.1.a.6: Provide a concluding statement or paragraph that follows from the argument presented. 6.W.3.1.a.7: Write arguments in a variety of forms.
6.W.3.2: Write informative compositions on a variety of topics that – <ul style="list-style-type: none"> ● Introduce a topic; organize ideas, concepts, and information, using strategies such as definition and classification. ● Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples from various sources and texts. ● Use appropriate transitions to clarify the relationships among ideas and concepts. ● Include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. ● Choose language and content-specific vocabulary that express ideas precisely and concisely, recognizing and eliminating wordiness and redundancy. ● Establish and maintain a style appropriate to purpose and audience. ● Provide a concluding statement or section that follows from the information or explanation presented. 	6.W.3.2.a.1: Introduce a topic in an informative composition. 6.W.3.2.a.2: Organize ideas, concepts, and information, using strategies such as definition and classification in an informative composition. 6.W.3.2.a.3: Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples from various sources and texts in an informative composition. 6.W.3.2.a.4: Use appropriate transitions to clarify the relationships among ideas and concepts in an informative composition. 6.W.3.2.a.5: Establish and maintain a style appropriate to purpose and audience in an informative composition. 6.W.3.2.a.6: Choose language and content-specific vocabulary that express ideas precisely and concisely, recognizing and eliminating wordiness and redundancy in an informative composition. 6.W.3.2.a.7: Include text features and multimedia when useful to aid comprehension in an informative composition. 6.W.3.2.a.8: Provide a concluding statement or paragraph that follows from the information or explanation presented in an informative composition. 6.W.3.2.a.9: Write informative compositions on a variety of topics.
6.W.3.3: Write narrative compositions in a variety of forms that – <ul style="list-style-type: none"> ● Engage and orient the reader by developing an exposition (e.g., describe the setting, establish the situation, introduce the narrator and/or 	6.W.3.3.a.1: Engage and orient the reader by developing an exposition (e.g., describe the setting, establish the situation, introduce the narrator and/or characters) in a narrative composition.

Indiana Academic Standards	Content Connector
characters). <ul style="list-style-type: none"> Organize an event sequence (e.g. conflict, climax, resolution) that unfolds naturally and logically, using a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one timeframe or setting to another. Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters. Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events. Provide an ending that follows from the narrated experiences or events. 	<p>6.W.3.3.a.2: Develop an event sequence (e.g., conflict, climax, resolution) that unfolds naturally, connecting ideas and events from one timeframe to another in a narrative composition.</p> <p>6.W.3.3.a.3: Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters in a narrative composition.</p> <p>6.W.3.3.a.4: Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events in a narrative composition.</p> <p>6.W.3.3.a.5: Provide an ending that follows from the narrated experiences or events in a narrative composition.</p> <p>6.W.3.3.a.6: Write narrative compositions in a variety of forms.</p>
<p>6.W.4: Apply the writing process to –</p> <ul style="list-style-type: none"> Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults. Use technology to interact and collaborate with others to generate, produce, and publish writing. 	<p>6.W.4.a.1: Develop a plan for writing (e.g., choose a topic, introduce story elements, develop storyline, conclude story).</p> <p>6.W.4.a.2: Strengthen writing by revising, editing, rewriting, or trying a new approach.</p> <p>6.W.4.a.3: Use technology to produce and publish writing. (e.g., use Internet to gather information, word processing to generate and collaborate on writing).</p>
<p>6.W.5: Conduct short research assignments and tasks to build knowledge about the research process and the topic under study.</p> <ul style="list-style-type: none"> Formulate a research question (e.g., In what ways did Madame Walker influence Indiana society?). Gather relevant information from multiple sources, and annotate sources. Assess the credibility of each source. Quote or paraphrase the information and conclusions of others. Avoid plagiarism and provide basic bibliographic information for sources. Present information, choosing from a variety of formats. 	<p>6.W.5.a.1: Formulate a research question.</p> <p>6.W.5.a.2: Quote or paraphrase the data and conclusions of others in writing while avoiding plagiarism.</p> <p>6.W.5.a.3: Follow a standard format for citation.</p> <p>6.W.5.a.4: Gather relevant information (e.g., highlight in text, quote or paraphrase from text or discussion) from print and/or digital sources.</p> <p>6.W.5.a.5: Assess the credibility of each source.</p>

Indiana Academic Standards	Content Connector
	6.W.5.a.6: Complete a short research project (e.g., determine topic, locate information on a topic, organize information related to the topic, draft a permanent product).
6.W.6.1: Demonstrate command of English grammar and usage, focusing on:	6.W.6.1.a.1: Effectively use English grammar.
6.W.6.1a: Pronouns – Using a variety of pronouns, including subject, object, possessive, and reflexive; ensuring pronoun-antecedent agreement; recognizing and correcting vague pronouns (i.e., ones with unclear or ambiguous antecedents).	6.W.6.1a.a.1: Accurately use a variety of pronouns, including subject, object, possessive, and reflexive.
6.W.6.1e: Usage – Writing simple, compound, complex, and compound-complex sentences; recognizing sentence fragments and run-ons.	6.W.6.1a.a.2: Recognize and correct vague pronouns.
6.W.6.2: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling focusing on:	6.W.6.1e.a.1: Write simple, compound, complex, and compound-complex sentences.
6.W.6.2b: Punctuation – ● Using punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements. ● Using semicolons to connect main clauses and colons to introduce a list or quotation.	6.W.6.1e.a.2: Recognize sentence fragments and run-ons.
	6.W.6.2.a.1: Effectively use capitalization, punctuation, and spelling.
	6.W.6.2b.a.1: Use commas, parentheses, and/or dashes in writing to set off nonrestrictive/parenthetical elements.
	6.W.6.2b.a.2: Use semicolons to connect main clauses and colons to introduce a list or quotation.

SPEAKING AND LISTENING

Guiding Principle: *Students listen actively and communicate effectively for a variety of purposes, including for learning, enjoyment, persuasion, and the exchange of information and ideas. Students adjust their use of language to communicate effectively with a variety of audiences and for different purposes. Students develop an understanding of and respect for diversity in language use, patterns, and dialects.ⁱⁱⁱ*

SPEAKING AND LISTENING

There are three key areas found in the Speaking and Listening section for grades 6-12: Discussion and Collaboration, Comprehension, and Presentation of Knowledge and Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Speaking and Listening.

Learning Outcome

Indiana Academic Standards	Content Connector
6.SL.1: Listen actively and adjust the use of spoken language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.	6.SL.1.a.1: Provide evidence of being prepared for discussions on a topic or text through appropriate statements made during discussion.
6.SL.2.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) on grade-appropriate topics, texts, and issues, building on others' ideas and expressing personal ideas clearly.	6.SL.2.1.a.1: Participate in collaborative discussions (one-on-one and in groups) on grade appropriate topics or texts by identifying key ideas of the discussion.
	6.SL.2.1.a.2: Participate in collaborative discussions (one-on-one and in groups) on grade appropriate topics or texts by adding relevant ideas and expressing personal ideas.
6.SL.2.2: Elaborate and reflect on ideas under discussion by identifying specific evidence from materials under study and other resources.	6.SL.2.2.a.1: Provide evidence of being prepared for discussions on a topic or text through appropriate statements made during discussion.
6.SL.2.3: Follow rules for considerate discussions, set specific goals and deadlines, and define individual roles as needed.	6.SL.2.3.a.1: Demonstrate knowledge and use of agreed-upon rules for discussions
	6.SL.2.3.a.2: Identify and serve in roles for small group discussions or projects.
6.SL.2.4: Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.	6.SL.2.4.a.1: Ask and answer questions to add detail to topic, text or issue under discussion.
	6.SL.2.4.a.2: Make comments that contribute to the topic, text or issue under discussion.

Indiana Academic Standards	Content Connector
<p>6.SL.2.5: Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.</p>	<p>6.SL.2.5.a.1: Review the key ideas expressed within a collaborative discussion.</p> <p>6.SL.2.5.a.2: Recognize multiple perspectives in collaborative discussions.</p>
<p>6.SL.3.1: Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.</p>	<p>6.SL.3.1.a.1: Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally).</p> <p>6.SL.3.1.a.2: Explain how information gained via media and formats contributes to the understanding of a topic, text, or issue under study.</p>
<p>6.SL.3.2: Delineate a speaker’s argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.</p>	<p>6.SL.3.2.a.1: Summarize the points a speaker makes.</p> <p>6.SL.3.2.a.2: Distinguish claims or arguments from those that are supported by evidence from those that are not.</p> <p>6.SL.3.2.a.3: Distinguish claims presented orally or in writing that are supported by reasons and evidence from claims that are not.</p>
<p>6.SL.4.1: Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.</p>	<p>6.SL.4.1.a.1: Report on a topic, story or claim with a logical sequence of ideas, appropriate facts and relevant, descriptive details.</p>
<p>6.SL.4.2: Create engaging presentations that include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.</p>	<p>6.SL.4.2.a.1: Create a presentation with a clear focus, using various media to emphasize facts, details or theme.</p>

MEDIA LITERACY

Guiding Principle: *Students develop critical thinking about the messages received and created by media. Students recognize that media are a part of culture and function as agents of socialization and develop understanding that people use individual skills, beliefs, and experiences to construct their own meanings from media messages. Students develop media literacy skills in order to become more informed, reflective, and engaged participants in society.^{iv}*

MEDIA LITERACY

By demonstrating the skills listed in Media Literacy, students should be able to meet the Learning Outcome for Media Literacy.

Learning Outcome

Indiana Academic Standards	Content Connector
6.ML.1: Critically analyze information found in electronic, print, and mass media used to inform, persuade, entertain, and transmit culture.	6.ML.1.a.1: Critically analyze information found in electronic, print, and mass media used to inform, persuade, entertain, and transmit culture.
6.ML.2.1: Use evidence to evaluate the accuracy of information presented in multiple media messages.	6.ML.2.1.a.1: Use evidence to evaluate the accuracy of information presented in multiple media messages.
6.ML.2.2: Identify the target audience of a particular media message, using the context of the message (e.g., where it is placed, when it runs, etc.).	6.ML.2.2.a.1: Identify the target audience of a particular media message based on its context.

ⁱ Adapted from Standards for the English Language. National Council of Teachers of English and International Reading Association, 1996. Available at <http://www.ncte.org/library/NCTEFiles/Resources/Books/Sample/StandardsDoc.pdf>.

ⁱⁱ Ibid.

ⁱⁱⁱ Ibid.

^{iv} Adapted from Standards for the English Language. National Council of Teachers of English and International Reading Association, 1996. Available at <http://www.ncte.org/library/NCTEFiles/Resources/Books/Sample/StandardsDoc.pdf>.

GRADE 7

READING

Guiding Principle: *Students read a wide range of fiction, nonfiction, classic, and contemporary works, to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They read a wide range of literature in many genres from a variety of time periods and cultures from around the world to build an understanding of the many dimensions (e.g., philosophical, ethical, aesthetic) of human experience. They draw on their prior experience, their interactions with other readers and writers, and reading skills that they have developed and refined.ⁱ*

READING: Literature

There are three key areas found in the Reading: Literature section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, and Synthesis and Connection of Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Literature.

Learning Outcome

Indiana Academic Standards	Content Connector
7.RL.1: Read a variety of literature within a range of complexity appropriate for grades 6-8. By the end of grade 7, Student interact with texts proficiently and independently at the middle of the range and with scaffolding as needed for texts at the high end of the range.	7.RL.1.a.1: Read a variety of grade level appropriate literature
	7.RL.1.a.2: Comprehend a variety of grade level appropriate literature.
7.RL.2.1: Cite several pieces of textual evidence to support analysis of what a text says explicitly as well as inferences drawn from the text.	7.RL.2.1.a.1: Refer to details and examples in a text when explaining what the text says explicitly.
	7.RL.2.1.a.2: Refer to details and examples in a text when making inferences.
7.RL.2.2: Analyze the development of a theme or central idea over the course of a work of literature; provide a detailed summary that	7.RL.2.2.a.1: Analyze the development of the theme or central idea over the course of the text.

Indiana Academic Standards	Content Connector
supports the analysis.	<p>7.RL.2.2.a.2: Provide a detailed summary of a text.</p>
<p>7.RL.2.3: Analyze the interaction of elements in a work of literature (e.g., how setting shapes the characters or plot).</p>	<p>7.RL.2.3.a.1: Analyze how particular elements of a work of literature interact (e.g., how setting shapes the characters or plot).</p>
<p>7.RL.3.1: Analyze how a work of literature's structural elements such as subplots, parallel episodes, climax, and conflicts contribute to its meaning and plot.</p>	<p>7.RL.3.1.a.1: Examine how the structure of a work of literature adds to its meaning.</p>
<p>7.RL.3.2: Analyze how an author develops and contrasts the points of view of different characters or narrators in a work of literature.</p>	<p>7.RL.3.2.a.1: Analyze how an author develops and contrasts the points of view of different characters or narrators in a work of literature.</p>
<p>7.RL.4.1: Compare and contrast a written story, play or poem to its audio, filmed, staged, or multimedia version, analyzing the effects of techniques unique to each medium (e.g., lighting, sound, color, or camera focus and angles in a film).</p>	<p>7.RL.4.1.a.1: Compare and contrast different mediums that may be used to present literary materials to explore the techniques used in the various mediums.</p>
<p>7.RL.4.2: Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history.</p>	<p>7.RL.4.2.a.1: Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history.</p>

READING: Nonfiction

There are three key areas found in the Reading: Nonfiction section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, and Synthesis and Connection of Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Nonfiction.

Learning Outcome

Indiana Academic Standards	Content Connector
<p>7.RN.1: Read a variety of nonfiction within a range of complexity appropriate for grades 6-8. By the end of grade 7, Student interact with texts proficiently and independently at the middle of the range and with scaffolding as needed for texts at the high end of the range.</p>	<p>7.RN.1.a.1: Read a variety of nonfiction texts.</p>
<p>7.RN.2.1: Cite several pieces of textual evidence to support analysis of what a text says explicitly as well as inferences drawn from the text.</p>	<p>7.RN.2.1.a.1: Refer to details and examples in a text when explaining what the text says explicitly.</p>
	<p>7.RN.2.1.a.2: Refer to details and examples in a text when making inferences.</p>
<p>7.RN.2.2: Analyze the development of two or more central ideas over the course of a text; provide a detailed, objective summary of the text.</p>	<p>7.RN.2.2.a.1: Analyze the development of two or more central ideas over the course of the text.</p>
	<p>7.RN.2.2.a.2: Provide a detailed, objective summary of a text.</p>
<p>7.RN.2.3: Analyze the interactions between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events).</p>	<p>7.RN.2.3.a.1: Analyze the interactions between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events).</p>
<p>7.RN.3.2: Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to the development of the ideas.</p>	<p>7.RN.3.2.a.1: Analyze the structure an author uses to organize a text.</p>
	<p>7.RN.3.2.a.2: Analyze how the structure contributes to the whole and to the development of the ideas.</p>

Indiana Academic Standards	Content Connector
<p>7.RN.3.3: Determine an author’s perspective or purpose in a text, and analyze how the author distinguishes his or her position from the positions of others.</p>	<p>7.RN.3.3.a.1: Determine an author’s perspective or purpose in a text.</p> <p>7.RN.3.3.a.2: Analyze how the author distinguishes his or her position from the positions of others.</p>
<p>7.RN.4.1: Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims, noting instances of bias and stereotyping.</p>	<p>7.RN.4.1.a.1: Trace the argument and specific claims in a text.</p> <p>7.RN.4.1.a.2: Evaluate the claim or argument to determine if they are relevant and supported by evidence.</p> <p>7.RN.4.1.a.3: Distinguish claims or arguments from those that are supported by evidence from those that are not.</p>
<p>7.RN.4.2: Compare and contrast a print or digital text to an audio, video, or multimedia version of the text, analyzing each medium’s portrayal of the subject (e.g., how the delivery of a speech affects the impact of the words).</p>	<p>7.RN.4.2.a.1: Compare and contrast a print or digital text to an audio, video, or multimedia version of the text, analyzing each medium’s portrayal of the subject (e.g., how the delivery of a speech affects the impact of the words).</p>
<p>7.RN.4.3: Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts.</p>	<p>7.RN.4.3.a.1: Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts.</p>

READING: Vocabulary

There are two key areas found in the Reading: Vocabulary section for grades 6-12: Vocabulary Building and Vocabulary in Literature and Nonfiction Texts. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Vocabulary.

Learning Outcome

Indiana Academic Standards	Content Connectors
<p>7.RV.1: Acquire and use accurately grade-appropriate general academic and content-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.</p>	<p>7.RV.1.a.1: Acquire general academic and content-specific words and phrases accurately.</p>
	<p>7.RV.1.a.2: Use general academic and content-specific words and phrases accurately.</p>
<p>7.RV.2.1: Use context to determine or clarify the meaning of words and phrases.</p>	<p>7.RV.2.1.a.1: Use context to determine or clarify the meaning of words and phrases.</p>
<p>7.RV.2.2: Use the relationship between particular words (e.g., synonym/antonym, analogy) to better understand each of the words.</p>	<p>7.RV.2.2.a.1: Use the relationship between particular words (e.g., synonym/antonym, analogy) to better understand each of the words.</p>
<p>7.RV.2.3: Distinguish among the connotations of words with similar denotations.</p>	<p>7.RV.2.3.a.1: Distinguish among the connotations of words with similar denotations.</p>
<p>7.RV.2.4: Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of words (e.g., belligerent, bellicose, rebel).</p>	<p>7.RV.2.4.a.1: Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of words (e.g., belligerent, bellicose, rebel).</p>
	<p>7.RV.2.5.a.1: Consult reference materials (e.g., dictionaries, glossaries, thesauruses) to find the <i>pronunciation</i> of a word.</p>
	<p>7.RV.2.5.a.2: Consult reference materials (e.g., dictionaries, glossaries, thesauruses) to find the <i>synonym</i> for a word.</p>
<p>7.RV.2.5: Consult general and specialized reference materials, both print and digital (e.g., dictionary, thesaurus, style guide), to find the pronunciation of a word or determine or clarify its precise meaning, part of speech, or origin.</p>	<p>7.RV.2.5.a.3: Consult reference materials (e.g., dictionaries, glossaries, thesauruses) to find the <i>precise meaning</i> of a word.</p>

Indiana Academic Standards	Content Connectors
<p>7.RV.3.1: Determine the meaning of words and phrases as they are used in works of literature, including figurative and connotative meanings; analyze the impact of rhymes and other repetitions of sounds (e.g., alliteration) within a story, poem, or play.</p>	<p>7.RV.3.1.a.1: Determine the meaning of words and phrases as they are used in <i>works of literature</i>, including figurative and connotative meanings.</p>
<p>7.RV.3.2: Determine the meaning of words and phrases as they are used in a nonfiction text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone.</p>	<p>7.RV.3.1.a.2: Analyze how the use of rhymes or repetitions of sounds affect the tone of the poem, story, or play.</p>
<p>7.RV.3.3: Interpret figures of speech (e.g., literary, religious, and mythological allusions) in context.</p>	<p>7.RV.3.2.a.1: Determine the meaning of words and phrases as they are used in a <i>nonfiction text</i>, including figurative and connotative meanings.</p> <p>7.RV.3.2.a.2: Analyze how the use of figurative, connotative or technical terms affect the meaning or tone of text.</p>
	<p>7.RV.3.3.a.1: Interpret figures of speech in context.</p>

DRAFT

WRITING

Guiding Principle: *Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes. Students apply knowledge of language structure, language conventions, media techniques, figurative language, and genre to create, critique, and discuss writing. Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources to communicate their discoveries in ways that suit their purpose and audience.ⁱⁱ*

WRITING

There are four key areas found in the Writing section for grades 6-12: Writing Genres, the Writing Process, the Research Process, and Conventions of Standard English. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Writing.

Learning Outcome

Indiana Academic Standards	Content Connectors
7.W.1: Write routinely over a variety of time frames for a range of tasks, purposes, and audiences; apply reading standards to support analysis, reflection, and research by drawing evidence from literature and nonfiction texts.	7.W.1.a.1: Write routinely over a variety of time frames for a range of tasks, purposes, and audiences.
	7.W.1.a.2: Apply reading standards to support analysis, reflection and research by drawing evidence from literature and nonfiction texts.
7.W.3.1: Write arguments in a variety of forms that – <ul style="list-style-type: none"> ● Introduce claim(s), acknowledge alternate or opposing claims, and use appropriate organizational structures. ● Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text. ● Establish and maintain a consistent style and tone appropriate to purpose and audience. ● Use effective transitions to create cohesion and clarify the relationships among claim(s), reasons, and evidence. ● Provide a concluding statement or section that follows from and supports the argument presented. 	7.W.3.1.a.1: Provide an introduction that introduces the writer’s claims and acknowledges alternate or opposing claims in an argument.
	7.W.3.1.a.2: Introduce claim(s), acknowledge alternate or opposing claims in an argument. Use appropriate organizational structures in an argument.
	7.W.3.1.a.3: Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text in an argument.
	7.W.3.1.a.4: Establish and maintain a consistent style and tone appropriate to purpose and audience.

Indiana Academic Standards	Content Connectors
	<p>7.W.3.1.a.5: Use effective transitions to create cohesion and clarify the relationships among claim(s), reasons, and evidence in an argument.</p> <p>7.W.3.1.a.6: Provide a concluding statement or paragraph that follows from and supports the argument presented.</p> <p>7.W.3.1.a.7: Write arguments in a variety of forms.</p>
<p>7.W.3.2: Write informative compositions on a variety of topics that –</p> <ul style="list-style-type: none"> ● Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information, using strategies such as definition and classification; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. ● Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples from various sources and texts. ● Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts. ● Choose language and content-specific vocabulary that express ideas precisely and concisely, recognizing and eliminating wordiness and redundancy. ● Establish and maintain a style appropriate to purpose and audience. ● Provide a concluding statement or section that follows from and supports the information or explanation presented. 	<p>7.W.3.2.a.1: Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information, using strategies such as definition and classification; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension in informative compositions</p> <p>7.W.3.2.a.2: Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples from various sources and texts in informative compositions.</p> <p>7.W.3.2.a.3: Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts in informative compositions</p> <p>7.W.3.2.a.4: Choose language and content-specific vocabulary that express ideas precisely and concisely, recognizing and eliminating wordiness and redundancy in informative compositions.</p> <p>7.W.3.2.a.5: Establish and maintain a style appropriate to purpose and audience in informative compositions.</p> <p>7.W.3.2.a.6: Provide a concluding statement or paragraph that follows from and supports the information or explanation presented in informative compositions.</p> <p>7.W.3.2.a.7: Write informative compositions on a variety of topics.</p>
<p>7.W.3.3: Write narrative compositions in a variety of forms that –</p> <ul style="list-style-type: none"> ● Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters. 	<p>7.W.3.3.a.1: Engage and orient the reader by establishing a context and point of view and introducing the narrator and/or characters in narrative compositions.</p>

Indiana Academic Standards	Content Connectors
<ul style="list-style-type: none"> Organize an event sequence (e.g., conflict, climax, resolution) that unfolds naturally and logically, using a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one timeframe or setting to another. Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters. Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events. Provide an ending that follows from and reflects on the narrated experiences or events. 	<p>7.W.3.3.a.2: Develop an event sequence (e.g. conflict, climax, resolution) that unfolds naturally, connecting ideas and events using transitions from one time from or setting to another in a narrative composition.</p> <p>7.W.3.3.a.3: Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters in narrative compositions</p> <p>7.W.3.3.a.4: Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events in narrative compositions.</p> <p>7.W.3.3.a.5: Provide an ending that follows from and reflects on the narrated experiences or events in narrative compositions.</p> <p>7.W.3.3.a.6: Write narrative compositions in a variety of forms.</p>
<p>7.W.4: Apply the writing process to –</p> <ul style="list-style-type: none"> Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults. Use technology to interact and collaborate with others to generate, produce, and publish writing and link to sources. 	<p>7.W.4.a.1: Develop a plan for writing.</p> <p>7.W.4.a.2: Strengthen writing by revising, editing, rewriting or trying a new approach.</p> <p>7.W.4.a.3: Use technology to interact and collaborate with others to produce and publish writing.</p>
<p>7.W.5: Conduct short research assignments and tasks to build knowledge about the research process and the topic under study.</p> <ul style="list-style-type: none"> Formulate a research question. Gather relevant information from multiple sources, using search terms effectively, and annotate sources. Assess the credibility and accuracy of each source. Quote or paraphrase the information and conclusions of others. Avoid plagiarism and follow a standard format for citation. Present information, choosing from a variety of formats. 	<p>7.W.5.a.1: Formulate a research question.</p> <p>7.W.5.a.2: Gather relevant information from multiple sources.</p> <p>7.W.5.a.3: Assess the credibility and accuracy of each source.</p> <p>7.W.5.a.4: Quote or paraphrase the data and conclusions of other in writing while avoiding plagiarism.</p> <p>7.W.5.a.5: Follow a standard format for a citation.</p> <p>7.W.5.a.6: Present information, choosing from a variety of formats.</p> <p>7.W.5.a.7: Follow steps to complete a short research project (e.g., determine topic, locate information on a topic, organize information related to the topic, draft a</p>

Indiana Academic Standards	Content Connectors
	permanent product).
7.W.6.1: Demonstrate command of English grammar and usage, focusing on: (see next page)	7.W.6.1: Effectively use English grammar.
7.W.6.1b: Verbs – Recognizing and correcting problems with subject/verb agreement.	7.W.6.1b.a.1: Recognize and correct problems with subject/verb agreement.
7.W.6.1d: Phrases and Clauses – Recognizing and correcting misplaced and dangling modifiers.	7.W.6.1d.a.1: Recognize and correct misplaced and dangling modifiers.
7.W.6.1e: Usage – Writing simple, compound, complex, and compound-complex sentences; recognizing and correcting sentence fragments and run-ons; varying sentence patterns for meaning, reader interest, and style.	7.W.6.1e.a.1: Use simple, compound, complex, and compound-complex sentences within writing when appropriate.
	7.W.6.1e.a.2: Recognize and correct sentence fragments and run-ons.
	7.W.6.1e.a.3: Vary sentence patterns for meaning, reading interest and style.
7.W.6.2b: Punctuation – ● Using commas with subordinate clauses.	7.W.6.2b.a.1: Use commas with subordinate clauses.

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SPEAKING AND LISTENING

Guiding Principle: *Students listen actively and communicate effectively for a variety of purposes, including for learning, enjoyment, persuasion, and the exchange of information and ideas. Students adjust their use of language to communicate effectively with a variety of audiences and for different purposes. Students develop an understanding of and respect for diversity in language use, patterns, and dialects.ⁱⁱⁱ*

SPEAKING AND LISTENING

There are three key areas found in the Speaking and Listening section for grades 6-12: Discussion and Collaboration, Comprehension, and Presentation of Knowledge and Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Speaking and Listening.

Learning Outcome

Indiana Academic Standards	Content Connectors
7.SL.1: Listen actively and adjust the use of spoken language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.	7.SL.1.a.1: Provide evidence of being prepared for discussions on a topic or text through appropriate statements made during discussion.
7.SL.2.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) on grade-appropriate topics, texts, and issues, building on others' ideas and expressing personal ideas clearly.	7.SL.2.1.a.1: Participate in collaborative discussions (one-on-one and in groups) on grade appropriate topics or texts by identifying key ideas of the discussion.
	7.SL.2.1.a.2: Participate in collaborative discussions (one-on-one and in groups) on grade appropriate topics or texts by adding relevant ideas and expressing personal ideas.
7.SL.2.2: Investigate and reflect on ideas under discussion by identifying specific evidence from materials under study and other resources.	7.SL.2.2.a.1: Provide evidence of being prepared for discussions on a topic or text through appropriate statements made during discussion.
	7.SL.2.2.a.2: Add details from text or other resources to elaborate on ideas under discussion.
7.SL.2.3: Follow rules for considerate discussions, track progress toward specific goals and deadlines, and define individual roles as needed.	7.SL.2.3.a.1: Demonstrate knowledge and use of agreed-upon rules for discussions
	7.SL.2.3.a.2: Identify and serve in roles for small group discussions or projects.
	7.SL.2.3.a.3: Understand and follow set goals and timelines for discussion.
7.SL.2.4: Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that	7.SL.2.4.a.1: Ask and answer questions to add detail to topic, text or issue under discussion.

Indiana Academic Standards	Content Connectors
bring the discussion back on topic as needed.	7.SL.2.4.a.2: Make comments that contribute to the topic, text or issue under discussion.
7.SL.2.5: Acknowledge new information expressed by others, and consider it in relation to one's own views.	7.SL.2.5.a.1: Recognize multiple perspectives in collaborative discussions.
	7.SL.2.5.a.2: Compare own view or opinion with new information expressed by other.
7.SL.3.1: Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.	7.SL.3.1.a.1: Evaluate main ideas and supporting details presented in diverse media and formats for accuracy.
	7.SL.3.1.a.2: Explain how main ideas and supporting details presented in diverse media and formats clarify a topic, text or issue.
7.SL.3.2: Delineate a speaker’s argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.	7.SL.3.2.a.1: Evaluate main ideas of a speaker for accuracy.
	7.SL.3.2.a.2: Explain how main ideas and supporting details of a speaker clarify a topic, text or issue.
7.SL.4.1: Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.	7.SL.4.1.a.1: Present claims and findings, emphasizing salient points in a coherent manner with pertinent descriptions, facts, details, and examples.
	7.SL.4.1.a.2: Report on a topic, with a logical sequence of ideas, appropriate facts and relevant, descriptive details which support the main ideas.

MEDIA LITERACY

Guiding Principle: *Students develop critical thinking about the messages received and created by media. Students recognize that media are a part of culture and function as agents of socialization and develop understanding that people use individual skills, beliefs, and experiences to construct their own meanings from media messages. Students develop media literacy skills in order to become more informed, reflective, and engaged participants in society.^{iv}*

MEDIA LITERACY

By demonstrating the skills listed in Media Literacy, students should be able to meet the Learning Outcome for Media Literacy.

Learning Outcome

Indiana Academic Standards	Content Connectors
7.ML.1: Critically analyze information found in electronic, print, and mass media used to inform, persuade, entertain, and transmit culture.	7.ML.1.a.1: Critically analyze information found in electronic, print, and mass media used to inform, persuade, entertain, and transmit culture.
7.ML.2.1: Interpret the various ways in which events are presented and information is communicated by visual image-makers to influence the public.	7.ML.2.1.a.1: Interpret the various ways in which events are presented.
	7.ML.2.1.a.2: Interpret the various ways information is communicated by visual image-makers to influence the public.
7.ML.2.2: Analyze the ways that the media use words and images to attract the public's attention.	7.ML.2.2.a.1: Analyze the ways that the media use words and images to attract the public's attention.

ⁱ Adapted from Standards for the English Language. National Council of Teachers of English and International Reading Association, 1996. Available at <http://www.ncte.org/library/NCTEFiles/Resources/Books/Sample/StandardsDoc.pdf>.

ⁱⁱ Ibid.

ⁱⁱⁱ Ibid.

^{iv} Adapted from Standards for the English Language. National Council of Teachers of English and International Reading Association, 1996. Available at <http://www.ncte.org/library/NCTEFiles/Resources/Books/Sample/StandardsDoc.pdf>.

GRADE 8

READING

Guiding Principle: *Students read a wide range of fiction, nonfiction, classic, and contemporary works, to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They read a wide range of literature in many genres from a variety of time periods and cultures from around the world to build an understanding of the many dimensions (e.g., philosophical, ethical, aesthetic) of human experience. They draw on their prior experience, their interactions with other readers and writers, and reading skills that they have developed and refined.¹*

READING: Literature

There are three key areas found in the Reading: Literature section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, and Synthesis and Connection of Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Literature.

Learning Outcome

Indiana Academic Standards	Content Connector
8.RL.1: Read a variety of literature within a range of complexity appropriate for grades 6-8. By the end of grade 8, Student interact with texts proficiently and independently.	8.RL.1.a.1: Read a variety of grade level appropriate literature.
	8.RL.1.a.2: Comprehend a variety of grade level appropriate literature .
8.RL.2.1: Cite the textual evidence that most strongly supports an analysis of what a text says explicitly as well as inferences drawn from the text.	8.RL.2.1.a.1: Cite textual evidence when explaining what a text says explicitly.
	8.RL.2.1.a.2: Refer to details and examples in the text when making inferences.
	8.RL.2.1.a.3: Determine which piece(s) of evidence most strongly support analysis of a work of literature.
8.RL.2.2: Analyze the development of a theme or central idea over the course of a work of literature, including its relationship to the characters,	8.RL.2.2.a.1: Analyze the development of the theme or central idea over the course of the text including its relationship to the characters, setting and plot.

Indiana Academic Standards	Content Connector
setting, and plot; provide a detailed summary that supports the analysis.	<p>8.RL.2.2.a.2: Provide a detailed summary of a text.</p>
8.RL.2.3: Analyze how particular lines of dialogue or incidents in a work of literature propel the action, reveal aspects of a character, or provoke a decision.	8.RL.2.3.a.1: Analyze how particular lines of dialogue or incidents in a work of literature propel the action, reveal aspects of a character or provoke a decision.
8.RL.3.1: Compare and contrast the structure of two or more related works of literature (e.g., similar topic or theme), and analyze and evaluate how the differing structure of each text contributes to its meaning and style.	8.RL.3.1.a.1: Compare and contrast the structure of two or more related works of literature.
	8.RL.3.1.a.2: Analyze and evaluate how the differing structure of each text contributes to its meaning and style.
8.RL.3.2: Analyze a particular point of view or cultural experience in a work of world literature considering how it reflects heritage, traditions, attitudes, and beliefs.	8.RL.3.2.a.1: Analyze a particular point of view or cultural experience in a work of world literature considering how it reflects heritage, traditions, attitudes, and beliefs.
8.RL.4.1: Analyze the extent to which a filmed or live production of a story or play stays faithful to or departs from the text or script, evaluating the choices made by the director or actors.	
8.RL.4.2: Analyze how works of literature draw on and transform earlier texts.	8.RL.4.2.a.1: Analyze how works of literature draw on and transform earlier texts.

READING: Nonfiction

There are three key areas found in the Reading: Nonfiction section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, and Synthesis and Connection of Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Nonfiction.

Learning Outcome

Indiana Academic Standards	Content Connector
8.RN.1: Read a variety of nonfiction within a range of complexity appropriate for grades 6-8. By the end of grade 8, Student interact with texts proficiently and independently.	8.RN.1.a.1: Read a variety of nonfiction texts.
8.RN.2.1: Cite the textual evidence that most strongly supports an analysis of what a text says explicitly as well as inferences drawn from the text.	8.RN.2.1.a.1: Refer to details and examples in a text when explaining what the text says explicitly.
	8.RN.2.1.a.2: Refer to details and examples in a text when making inferences.
8.RN.2.2: Analyze the development of a central idea over the course of a text, including its relationship to supporting ideas; provide a detailed, objective summary of the text.	8.RN.2.2.a.1: Analyze the development of the central ideas over the course of the text, including its relationship to supporting ideas.
	8.RN.2.2.a.2: Provide a detailed, objective summary of the text.
8.RN.2.3: Analyze how a text makes connections and distinctions among individuals, events, and ideas.	8.RN.2.3.a.1: Analyze how a text makes connections and distinctions among individuals, events, and ideas.
8.RN.3.2: Analyze in detail the structure of a specific paragraph in a text, including the role of particular sentences in developing and refining a key concept.	8.RN.3.2.a.1: Analyze in detail the structure of a specific paragraph in a text.
	8.RN.3.2.a.2: Analyze the role of particular sentences in developing and refining a key concept.
8.RN.3.3: Determine an author’s perspective or purpose in a text, and analyze how the author acknowledges and responds to conflicting evidence or viewpoints.	8.RN.3.3.a.1: Determine an author’s perspective or purpose in a text and analyze how the author acknowledges and responds to conflicting evidence or viewpoints.

Indiana Academic Standards	Content Connector
8.RN.4.1: Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced.	8.RN.4.1.a.1: Evaluate the claim or argument to determine if it is supported by evidence.
	8.RN.4.1.a.2: Assess whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced.
8.RN.4.2: Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea.	
8.RN.4.3: Analyze a case in which two or more texts provide conflicting information on the same topic and identify where the texts disagree on matters of fact or interpretation.	8.RN.4.3.a.1: Analyze a case in which two or more texts provide conflicting information on the same topic and identify where the texts disagree on matters of fact or interpretation.

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READING: Vocabulary

There are two key areas found in the Reading: Vocabulary section for grades 6-12: Vocabulary Building and Vocabulary in Literature and Nonfiction Texts. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Vocabulary.

Learning Outcome

Indiana Academic Standards	Content Connector
<p>8.RV.1: Acquire and use accurately grade-appropriate general academic and content-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.</p>	<p>8.RV.1.a.1: Acquire general academic and content-specific words and phrases accurately.</p>
	<p>8.RV.1.a.2: Use general academic and content-specific words and phrases accurately.</p>
<p>8.RV.2.1: Use context to determine or clarify the meaning of words and phrases.</p>	<p>8.RV.2.1.a.1: Use context to determine or clarify the meaning of words and phrases.</p>
<p>8.RV.2.3: Distinguish among the connotations of words with similar denotations.</p>	<p>8.RV.2.3.a.1: Distinguish among the connotations of words with similar denotations.</p>
<p>8.RV.2.4: Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., precede, recede, secede).</p>	<p>8.RV.2.4.a.1: Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., precede, recede, secede).</p>
<p>8.RV.2.5: Select appropriate general and specialized reference materials, both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, part of speech, or origin.</p>	<p>8.RV.2.5.a.1: Consult reference materials (e.g., dictionaries, glossaries, thesauruses) to find the <i>pronunciation</i> of a word.</p>
	<p>8.RV.2.5.a.2: Consult reference materials (e.g., dictionaries, glossaries, thesauruses) to find the <i>synonym</i> for a word.</p>
	<p>8.RV.2.5.a.3: Consult reference materials (e.g., dictionaries, glossaries, thesauruses) to find the <i>precise meaning</i> of a word.</p>

Indiana Academic Standards	Content Connector
8.RV.3.1: Analyze the meaning of words and phrases as they are used in works of literature, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.	8.RV.3.1.a.1: Analyze the meaning of words and phrases as they are used in <i>works of literature</i> , including figurative and connotative meanings. 8.RV.3.1.a.2: Analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.
8.RV.3.2: Determine the meaning of words and phrases as they are used in a nonfiction text, including figurative, connotative, and technical meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.	8.RV.3.2.a.1: Determine the meaning of words and phrases as they are used in a <i>nonfiction text</i> , including figurative (i.e., metaphors, similes, and idioms) and connotative meanings. 8.RV.3.2.a.2: Analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.
8.RV.3.3: Interpret figures of speech (e.g. verbal irony, puns) in context.	8.RV.3.3.a.1: Interpret figures of speech (e.g., allusions, verbal irony, puns) in context.

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WRITING

Guiding Principle: *Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes. Students apply knowledge of language structure, language conventions, media techniques, figurative language, and genre to create, critique, and discuss writing. Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources to communicate their discoveries in ways that suit their purpose and audience.ⁱⁱ*

WRITING

There are four key areas found in the Writing section for grades 6-12: Writing Genres, the Writing Process, the Research Process, and Conventions of Standard English. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Writing.

Learning Outcome

Indiana Academic Standards	Content Connectors
8.W.1: Write routinely over a variety of time frames for a range of tasks, purposes, and audiences; apply reading standards to support analysis, reflection, and research by drawing evidence from literature and nonfiction texts.	8.W.1.a.1: Write over different lengths of time (i.e., a single sitting versus research and revision over time) for a variety of tasks, purposes, and audiences.
8.W.3.1: Write arguments in a variety of forms that – <ul style="list-style-type: none"> ● Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically. ● Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text. ● Use effective transitions to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. ● Establish and maintain a consistent style and tone appropriate to purpose and audience. ● Provide a concluding statement or section that follows from and supports the argument presented. 	8.W.3.1.a.1: Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.
	8.W.3.1.a.2: Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.
	8.W.3.1.a.3: Use effective transitions to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.
	8.W.3.1.a.4: Establish and maintain a consistent style and tone appropriate to purpose and audience.
	8.W.3.1.a.5: Maintain a consistent style and voice throughout writing (e.g., third person for formal style, accurate and efficient word choice, sentence fluency, and voice should be active versus passive).

Indiana Academic Standards	Content Connectors
	<p>8.W.3.1.a.6: Provide a concluding statement or section that follows from and supports the argument presented.</p>
	<p>8.W.3.1.a.7: Write arguments in a variety of forms.</p>
<p>8.W.3.2: Write informative compositions on a variety of topics that –</p> <ul style="list-style-type: none"> ● Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. ● Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples from various sources and texts. ● Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts. ● Choose language and content-specific vocabulary that express ideas precisely and concisely, recognizing and eliminating wordiness and redundancy. ● Establish and maintain a style appropriate to the purpose and audience. ● Provide a concluding statement or section that follows from and supports the information or explanation presented. 	<p>8.W.3.2.a.1: Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.</p>
	<p>8.W.3.2.a.2: Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples from various sources and texts.</p>
	<p>8.W.3.2.a.3: Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.</p>
	<p>8.W.3.2.a.4: Choose language and content-specific vocabulary that express ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.</p>
	<p>8.W.3.2.a.5: Maintain a consistent style and voice throughout writing (e.g., third person for formal style, accurate and efficient word choice, sentence fluency, and voice should be active versus passive).</p>
	<p>8.W.3.2.a.6: Establish and maintain a consistent style and tone appropriate to purpose and audience.</p>
	<p>8.W.3.2.a.7: Provide a concluding statement or section that follows from and supports the information or explanation presented.</p>
	<p>8.W.3.2.a.6: Write informative compositions in a variety of forms.</p>

Indiana Academic Standards	Content Connectors
<p>8.W.3.3: Write narrative compositions in a variety of forms that – Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters.</p> <p>Organize an event sequence (e.g., conflict, climax, resolution) that unfolds naturally and logically, using a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one timeframe or setting to another.</p> <p>Use narrative techniques, such as dialogue, pacing, description, and reflection, to develop experiences, events, and/or characters.</p> <p>Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.</p> <p>Provide an ending that follows from and reflects on the narrated experiences or events.</p>	<p>8.W.3.3.a.1: Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters.</p> <p>8.W.3.3.a.2: Organize an event sequence (e.g., conflict, climax, resolution) that unfolds naturally and logically, using a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one timeframe or setting to another.</p> <p>8.W.3.3.a.3: Use narrative techniques, such as dialogue, pacing, description, and reflection, to develop experiences, events, and/or characters.</p> <p>8.W.3.3.a.4: Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.</p> <p>8.W.3.3.a.5: Provide an ending that follows from and reflects on the narrated experiences or events.</p> <p>8.W.3.6.a.6: Write narrative compositions in a variety of forms.</p>
<p>8.W.4: Apply the writing process to –</p> <ul style="list-style-type: none"> ● Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults. ● Use technology to interact and collaborate with others to generate, produce, and publish writing and present information and ideas efficiently. 	<p>8.W.4.a.1: Edit and revise work.</p> <p>8.W.4.a.2: With guidance and support from peers and adults, develop a plan for writing (e.g., determine the topic, gather information, develop the topic, provide a meaningful conclusion) focused on a specific purpose and audience.</p> <p>8.W.4.a.3: Use technology to produce and publish writing (e.g., use word processing to generate and collaborate on writing).</p>
<p>8.W.5: Conduct short research assignments and tasks to build knowledge about the research process and the topic under study.</p> <ul style="list-style-type: none"> ● Formulate a research question. ● Gather relevant information from multiple sources, using search terms 	<p>8.W.5.a.1: Follow steps to complete a short research project (e.g., determine topic, locate information on a topic, organize information related to the topic, draft a permanent product).</p>

Indiana Academic Standards	Content Connectors
<p>effectively, and annotate sources.</p> <ul style="list-style-type: none"> ● Assess the credibility and accuracy of each source. ● Quote or paraphrase the information and conclusions of others. ● Avoid plagiarism and follow a standard format for citation. ● Present information, choosing from a variety of formats. 	<p>8.W.5.a.2: Formulate a research question, and gather relevant information from multiple using search terms effectively, and annotate sources.</p> <p>8.W.5.a.3: Assess the credibility and accuracy of each source.</p> <p>8.W.5.a.4: Quote or paraphrase the information and conclusions of others.</p> <p>8.W.5.a.5: Avoid plagiarism and follow a standard format for citation.</p> <p>8.W.5.a.6: Present information, choosing from a variety of formats.</p>
<p>8.W.6.1: Demonstrate command of English grammar and usage, focusing on:</p>	<p>8.W.6.1: Demonstrate command of English grammar and usage, focusing on:</p>
<p>8.W.6.1b: Verbs – Explaining the function of verbals (gerunds, participles, infinitives) in general and their function in particular sentences; forming and using active and passive voice; recognizing and correcting inappropriate shifts in verb voice.</p>	<p>8.W.6.1b.a.1: Explain the function of verbals (gerunds, participles, infinitives) in general and their function in particular sentences.</p> <p>8.W.6.1b.a.2: Use active and passive verbs in writing.</p> <p>8.W.6.1b.a.3: Recognize and correct inappropriate shifts in verb voice.</p>
<p>8.W.6.2: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling focusing on:</p>	<p>8.W.6.2: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling focusing on:</p>
<p>8.W.6.2b: Punctuation –</p> <ul style="list-style-type: none"> ● Using punctuation (comma, ellipsis, dash) to indicate a pause, break, or omission. 	<p>8.W.6.2b.a.1: Use punctuation (e.g., comma, ellipsis, dash) to indicate a pause or break.</p>

SPEAKING AND LISTENING

Guiding Principle: *Students listen actively and communicate effectively for a variety of purposes, including for learning, enjoyment, persuasion, and the exchange of information and ideas. Students adjust their use of language to communicate effectively with a variety of audiences and for different purposes. Students develop an understanding of and respect for diversity in language use, patterns, and dialects.ⁱⁱⁱ*

SPEAKING AND LISTENING

There are three key areas found in the Speaking and Listening section for grades 6-12: Discussion and Collaboration, Comprehension, and Presentation of Knowledge and Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Speaking and Listening.

Learning Outcome

Indiana Academic Standards	Content Connector
8.SL.1: Listen actively and adjust the use of spoken language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.	8.SL.1.a.1: Provide evidence of being prepared for discussions on a topic or text through appropriate statements made during discussion.
8.SL.2.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) on grade-appropriate topics, texts, and issues, building on others' ideas and expressing personal ideas clearly.	8.SL.2.1.a.1: Participate in collaborative discussions (one-on-one and in groups) on grade appropriate topics or texts by identifying key ideas of the discussion.
	8.SL.2.1.a.2: Participate in collaborative discussions (one-on-one and in groups) on grade appropriate topics or texts by adding relevant ideas and expressing personal ideas.
8.SL.2.2: Examine, analyze, and reflect on ideas under discussion by identifying specific evidence from materials under study and other resources.	8.SL.2.2.a.1: Provide evidence of being prepared for discussions on a topic or text through appropriate statements made during discussion.
	8.SL.2.2.a.2: Add details from text or other resources to elaborate on ideas under discussion.
8.SL.2.3: Follow rules for considerate discussions and decision-making, track progress toward specific goals and deadlines, and define individual roles as needed.	8.SL.2.3.a.1: Demonstrate knowledge and use of agreed-upon rules for discussions
	8.SL.2.3.a.2: Identify and serve in roles for small group discussions or projects.
	8.SL.2.3.a.3: Understand and follow set goals and timelines for discussion.

Indiana Academic Standards	Content Connector
<p>8.SL.2.4: Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas.</p>	<p>8.SL.2.4.a.1: Ask and answer questions to add detail to topic, text or issue under discussion.</p> <p>8.SL.2.4.a.2: Make comments that contribute to the topic, text or issue under discussion.</p>
<p>8.SL.2.5: Acknowledge new information expressed by others, and, when warranted, qualify or justify personal views in reference to the evidence presented.</p>	<p>8.SL.2.5.a.1: Compare own view or opinion with new information expressed by other(s).</p> <p>8.SL.2.5.a.2: Discuss how own view or opinion changes using new information provided by others.</p>
<p>8.SL.3.1: Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.</p>	<p>8.SL.3.1.a.1: Analyze the purpose of information presented in diverse media (e.g., visually, personal communication, periodicals, social media).</p> <p>8.SL.3.1.a.2: Identify the motives behind information presented in diverse media and formats (e.g., visually, personal communication, periodicals, social media).</p> <p>8.SL.3.1.a.3: Evaluate the motives and purpose behind information presented in diverse media and format for persuasive reasons.</p>
<p>8.SL.3.2: Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced.</p>	<p>8.SL.3.2.a.1: Evaluate the soundness of reasoning and the relevance and sufficiency of evidence provided in an argument.</p> <p>8.SL.3.2.a.2: Identify when irrelevant evidence is introduced within an argument.</p>
<p>8.SL.4.1: Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.</p>	<p>8.SL.4.1.a.1: Present claims and findings, emphasizing salient points in a coherent manner with relevant evidence.</p> <p>8.SL.4.1.a.2: Report on a topic with a logical sequence of ideas, appropriate facts, and relevant, descriptive details which support the main ideas.</p>
<p>8.SL.4.2: Create engaging presentations that integrate multimedia components and visual displays to clarify information, strengthen claims and evidence, and add interest.</p>	<p>8.SL.4.2.a.1: Create a presentation with a clear focus, using various media to clarify information, strengthen claims and add interest.</p>



DEPARTMENT OF EDUCATION

Dr. Jennifer McCormick
Superintendent of Public Instruction

Working Together for Student Success

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MEDIA LITERACY

Guiding Principle: *Students develop critical thinking about the messages received and created by media. Students recognize that media are a part of culture and function as agents of socialization and develop understanding that people use individual skills, beliefs, and experiences to construct their own meanings from media messages. Students develop media literacy skills in order to become more informed, reflective, and engaged participants in society.^{iv}*

MEDIA LITERACY

By demonstrating the skills listed in Media Literacy, students should be able to meet the Learning Outcome for Media Literacy.

Learning Outcome

Indiana Academic Standards	Content Connectors
8.ML.1: Critically analyze information found in electronic, print, and mass media used to inform, persuade, entertain, and transmit culture.	8.ML.1.a.1: Critically analyze information found in electronic, print, and mass media used to inform, persuade, entertain, and transmit culture.
8.ML.2.1: Identify and analyze persuasive and propaganda techniques used in visual and verbal messages by electronic, print and mass media, and identify false or misleading information.	<p>8.ML.2.1.a.1: Identify persuasive and propaganda techniques used in visual and verbal messages by electronic, print and mass media.</p> <p>8.ML.2.1.a.2: Analyze persuasive and propaganda techniques used in visual and verbal messages by electronic, print and mass media.</p>
8.ML.2.2: Analyze and interpret how people experience media messages differently, depending on point of view, culture, etc.	<p>8.ML.2.2.a.1: Interpret how people experience media messages differently, depending on point of view, culture, etc.</p> <p>8.ML.2.2.a.2: Analyze how people experience media messages differently, depending on point of view, culture, etc.</p>

ⁱ Adapted from Standards for the English Language. National Council of Teachers of English and International Reading Association, 1996. Available at <http://www.ncte.org/library/NCTEFiles/Resources/Books/Sample/StandardsDoc.pdf>.

ⁱⁱ Ibid.

ⁱⁱⁱ Ibid.

^{iv} Adapted from Standards for the English Language. National Council of Teachers of English and International Reading Association, 1996. Available at <http://www.ncte.org/library/NCTEFiles/Resources/Books/Sample/StandardsDoc.pdf>.

GRADES 9-10

READING

Guiding Principle: *Students read a wide range of fiction, nonfiction, classic, and contemporary works, to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They read a wide range of literature in many genres from a variety of time periods and cultures from around the world to build an understanding of the many dimensions (e.g., philosophical, ethical, aesthetic) of human experience. They draw on their prior experience, their interactions with other readers and writers, and reading skills that they have developed and refined.ⁱ*

READING: Literature

There are three key areas found in the Reading: Literature section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, and Synthesis and Connection of Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Literature.

Learning Outcome

Indiana Academic Standards	Updated
9-10.RL.1: Read a variety of literature within a range of complexity appropriate for grades 9-10. By the end of grade 9, students interact with texts proficiently and independently at the low end of the range and with scaffolding as needed for texts at the high end of the range. By the end of grade 10, students interact with texts proficiently and independently.	9-10.RL.1.a.1: Read a variety of grade level appropriate literature
	9-10.RL.1.a.2: Comprehend a variety of grade level appropriate literature
9-10.RL.2.1: Cite strong and thorough textual evidence to support analysis of what a text says explicitly as well as inferences and interpretations drawn from the text.	9-10.RL.2.1.a.1: Cite strong and thorough textual evidence to support analysis of what a text says explicitly.
	9-10.RL.2.1.a.2: Cite strong and thorough textual evidence to support analysis of inferences and interpretations drawn from the text.
9-10.RL.2.2: Analyze in detail the development of two or more themes or central ideas over the course of a work of literature, including how they emerge and are shaped and refined by specific details.	9-10.RL.2.2.a.1: Analyze in detail the development of two or more themes or central ideas over the course of a work of literature, including how they emerge and are shaped and refined by specific details.

Indiana Academic Standards	Updated
	<p>9-10.RL.2.2.a.2: Analyze how themes and central ideas emerge and are shaped and refined by specific details.</p>
<p>9-10.RL.2.3: Analyze how dynamic characters (e.g., those with multiple or conflicting motivations) develop over the course of a text, interact with other characters, and advance the plot or develop the theme.</p>	<p>9-10.RL.2.3.a.1: Analyze how dynamic characters (e.g., those with multiple or conflicting motivations) develop over the course of a text and interact with other characters.</p> <p>9-10.RL.2.3.a.2: Analyze how dynamic characters (e.g., those with multiple or conflicting motivations) advance the plot or develop the theme.</p>
<p>9-10.RL.3.1: Analyze and evaluate how an author’s choices concerning how to structure a work of literature, order events within it (e.g., parallel episodes), and manipulate time (e.g., pacing, flashbacks) create such effects as mystery, tension, or surprise.</p>	<p>9-10.RL.3.1.a.1: Analyze and evaluate how an author’s choices concerning how to structure a work of literature, order events within it (e.g., parallel episodes), and manipulate time (e.g., pacing, flashbacks) create such effects as mystery, tension, or surprise.</p>
<p>9-10.RL.3.2: Analyze how the author creates such effects as suspense or humor through differences in the points of view of the characters and the reader (e.g., created through the use of dramatic irony).</p>	<p>9-10.RL.3.2.a.1: Analyze how the author creates such effects as suspense or humor through differences in the points of view of the characters and the reader (e.g., created through the use of dramatic irony).</p>
<p>9-10.RL.4.1: Analyze multiple interpretations of a story, play, or poem, evaluating how each version interprets the source text.</p>	<p>9-10.RL.4.1.a.1: Analyze multiple interpretations of a story, play, or poem, evaluating how each version interprets the source text.</p>
<p>9-10.RL.4.2: Analyze and evaluate how works of literary or cultural significance (American, English, or world) draw on themes, patterns of events, or character types from myths, traditional stories, or religious works, including describing how the material is rendered new.</p>	<p>9-10.RL.4.2.a.1: Analyze and evaluate how works of literary or cultural significance (American, English, or world) draw on themes, patterns of events, or character types from myths, traditional stories, or religious works, including describing how the material is rendered new.</p>

READING: Nonfiction

There are three key areas found in the Reading: Nonfiction section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, and Synthesis and Connection of Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Nonfiction.

Learning Outcome

Indiana Academic Standards	Updated
<p>9-10.RN.1: Read a variety of nonfiction within a range of complexity appropriate for grades 9-10. By the end of grade 9, students interact with texts proficiently and independently at the low end of the range and with scaffolding as needed for texts at the high end of the range. By the end of grade 10, students interact with texts proficiently and independently.</p>	<p>9-10.RN.1.a.1: Read a variety of nonfiction texts.</p>
<p>9-10.RN.2.1: Cite strong and thorough textual evidence to support analysis of what a text says explicitly as well as inferences and interpretations drawn from the text.</p>	<p>9-10.RN.2.1.a.1: Cite strong and thorough textual evidence to support analysis of what a text says explicitly.</p>
	<p>9-10.RN.2.1.a.2: Cite strong and thorough textual evidence to support analysis of inferences and interpretations drawn from the text.</p>
<p>9-10.RN.2.2: Analyze in detail the development of two or more central ideas over the course of a text, including how they interact and build on one another to provide a complex analysis.</p>	<p>9-10.RN.2.2.a.1: Analyze in detail the development of two or more central ideas over the course of a text.</p>
	<p>9-10.RN.2.2.a.2: Analyze how central ideas interact and build on one another to provide a complex analysis.</p>
<p>9-10.RN.2.3: Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.</p>	<p>9-10.RN.2.3.a.1: Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, and how they are introduced and developed.</p>
	<p>9-10.RN.2.3.a.2: Analyze connections that are drawn between a series of ideas or events.</p>

Indiana Academic Standards	Updated
<p>9-10.RN.3.2: Analyze in detail how an author’s ideas or claims are developed and refined by particular sentences, paragraphs, or larger portions of a text.</p>	<p>9-10.RN.3.2.a.1: Analyze in detail how an author’s ideas are developed and refined by particular sentences, paragraphs, or larger portions of a text.</p>
	<p>9-10.RN.3.2.a.2: Analyze in detail how an author’s claims are developed and refined by particular sentences, paragraphs, or larger portions of a text.</p>
<p>9-10.RN.3.3: Determine an author’s perspective or purpose in a text, and analyze how an author uses rhetoric to advance that perspective or purpose.</p>	<p>9-10.RN.3.3.a.1: Determine an author’s perspective or purpose in a text.</p>
	<p>9-10.RN.3.3.a.2: Analyze how an author uses rhetoric to advance that perspective or purpose.</p>
<p>9-10.RN.4.1: Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning.</p>	<p>9-10.RN.4.1.a.1: Delineate and evaluate the argument and specific claims in a text.</p>
	<p>9-10.RN.4.1.a.2: Assess whether the reasoning is valid and the evidence is relevant and sufficient.</p>
	<p>9-10.RN.4.1.a.3: Identify false statements and fallacious reasoning.</p>
<p>9-10.RN.4.2: Analyze various accounts of a subject told in different mediums (e.g., a person’s life story in both print and multimedia), determining which details are emphasized in each account.</p>	<p>9-10.RN.4.2.a.1: Analyze various accounts of a subject told in different mediums (e.g., a person’s life story in both print and multimedia), determining which details are emphasized in each account.</p>
<p>9-10.RN.4.3: Analyze seminal U.S. and world documents of historical and literary significance, including how they address related themes and concepts.</p>	<p>9-10.RN.4.3.a.1: Analyze seminal U.S. and world documents of historical and literary significance, including how they address related themes and concepts.</p>

READING: Vocabulary

There are two key areas found in the Reading: Vocabulary section for grades 6-12: Vocabulary Building and Vocabulary in Literature and Nonfiction Texts. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Vocabulary.

Learning Outcome

Indiana Academic Standards	Updated
<p>9-10.RV.1: Acquire and use accurately general academic and content-specific words and phrases at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.</p>	<p>9-10.RV.1.a.1: Use grade appropriate general academic and domain-specific words and phrases accurately within writing.</p>
<p>9-10.RV.2.1: Use context to determine or clarify the meaning of words and phrases.</p>	<p>9-10.RV.2.1.a.1: Use context to determine or clarify the meaning of words and phrases.</p>
<p>9-10.RV.2.3: Analyze nuances in the meaning of words with similar denotations.</p>	<p>9-10.RV.2.1.a.2: Identify words with similar denotations.</p>
	<p>9-10.RV.2.1.a.3: Analyze nuances in the meaning of words with similar denotations.</p>
<p>9-10.RV.2.4: Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., analyze, analysis, analytical; advocate, advocacy).</p>	<p>9-10.RV.2.4.a.1: Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., analyze, analysis, analytical; advocate, advocacy).</p>
<p>9-10.RV.2.5: Select appropriate general and specialized reference materials, both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, part of speech, or etymology.</p>	<p>9-10.RV.2.5.a.1: Consult print and digital reference materials (e.g., dictionaries, glossaries, thesauruses) to find the <i>synonym</i> for a word.</p>
	<p>9-10.RV.2.5.a.2: Consult print and digital reference materials (e.g., dictionaries, glossaries, thesauruses) to find the <i>precise meaning</i> of a word.</p>
	<p>9-10.RV.2.5.a.3: Consult print and digital reference materials (e.g., dictionaries, glossaries, thesauruses) to find the <i>part of speech</i> for a word.</p>

Indiana Academic Standards	Updated
<p>9-10.RV.3.1: Analyze the meaning of words and phrases as they are used in works of literature, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings.</p>	<p>9-10.RV.3.1.a.1: Analyze the meaning of words and phrases as they are used in works of literature, including figurative and connotative meanings.</p> <p>9-10.RV.3.1.a.2: Analyze the impact of specific word choices on meaning and tone, including words with multiple meanings.</p>
<p>9-10.RV.3.2: Determine the meaning of words and phrases as they are used in a nonfiction text, including figurative, connotative, and technical meanings; evaluate the effectiveness of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).</p>	<p>9-10.RV.3.2.a.1: Determine the meaning of words and phrases as they are used in a nonfiction text, including figurative, connotative, and technical meanings.</p> <p>9-10.RV.3.2.a.2: Evaluate the effectiveness of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).</p>
<p>9-10.RV.3.3: Interpret figures of speech (e.g., euphemism, oxymoron) in context and analyze their role in the text.</p>	<p>9-10.RV.3.3.a.1: Interpret figures of speech (e.g., euphemism, oxymoron) in context.</p> <p>9-10.RV.3.3.a.2: Analyze the role of figures of speech in the text.</p>

DRAFT

WRITING

Guiding Principle: *Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes. Students apply knowledge of language structure, language conventions, media techniques, figurative language, and genre to create, critique, and discuss writing. Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources to communicate their discoveries in ways that suit their purpose and audience.ⁱⁱ*

WRITING

There are four key areas found in the Writing section for grades 6-12: Writing Genres, the Writing Process, the Research Process, and Conventions of Standard English. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Writing.

Learning Outcome

Indiana Academic Standards	Content Connectors
<p>9-10.W.1: Write routinely over a variety of time frames for a range of tasks, purposes, and audiences; apply reading standards to support analysis, reflection, and research by drawing evidence from literature and nonfiction texts.</p>	<p>9-10.W.1.a.1: Write routinely over a variety of time frames for a range of tasks, purposes, and audiences.</p> <p>9-10.W.1.a.2: Apply reading standards to support analysis, reflection and research by drawing evidence from literature and nonfiction text</p>
<p>9-10.W.3.1: Write arguments in a variety of forms that –</p> <ul style="list-style-type: none"> ● Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence. ● Develop claim(s) and counterclaims fairly, supplying evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience’s knowledge level and concerns. ● Use effective transitions to link the major sections of the text, create 	<p>9-10.W.3.1.a.1: Introduce precise claims and distinguish them from counter claims in argumentative writing.</p> <p>9-10.W.3.1.a.2: Develop claims and counterclaims giving evidence for each including strengths and limitations in argumentative writing.</p> <p>9-10.W.3.1.a.3: Use effective transitions to link the major sections of the text between claims and counterclaims.</p>

<p>cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <ul style="list-style-type: none"> ● Establish and maintain a consistent style and tone appropriate to purpose and audience. ● Provide a concluding statement or section that follows from and supports the argument presented. 	<p>9-10.W.3.1.a.4: Establish and maintain a consistent style and tone appropriate to purpose and audience .</p> <p>9-10.W.3.1.a.5: Provide a concluding statement or paragraph that follows from and supports the argument presented.</p>
<p>9-10.W.3.2: Write informative compositions on a variety of topics that –</p> <ul style="list-style-type: none"> ● Introduce a topic; organize complex ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. ● Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic. ● Use appropriate and varied transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. ● Choose language and content- specific vocabulary that express ideas precisely and concisely to manage the complexity of the topic, recognizing and eliminating wordiness and redundancy. ● Establish and maintain a style appropriate to the purpose and audience. ● Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic). 	<p>9-10.W.3.2.a.1: Introduce a topic in informative compositions.</p> <p>9-10.W.3.2.a.2: Organize complex ideas, concepts and information to make important connections and distinctions in informative compositions (e.g. including formatting, graphics and multimedia to aid comprehension in informative compositions).</p> <p>9-10.W.3.2.a.3: Develop the topic with relevant facts, definitions, concrete details, quotations and other information and examples appropriate to the audience’s knowledge of the topic in informative compositions.</p> <p>9-10.W.3.2.a.4: Use appropriate and varied transitions to link the major sections of the text among complex ideas and concepts in informative compositions.</p> <p>9-10.W.3.2.a.5: Choose language and content-specific vocabulary to manage the complexity of the topic, recognizing and eliminating wordiness and redundancy in informative compositions.</p> <p>9-10.W.3.2.a.6: Maintain a consistent style appropriate to the purpose and audience in informative compositions.</p> <p>9-10.W.3.2.a.7: Provide a concluding statement or paragraph that follows from and support the information or explanation presented in informative compositions.</p> <p>9-10.W.3.2.a.8: Write informative compositions on a variety of topics.</p>

9-10.W.3.3: Write narrative compositions in a variety of forms that—

- Engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple point(s) of view, and introducing a narrator and/or characters.

- Create a smooth progression of experiences or events.

- Use narrative techniques, (e.g., dialogue, pacing, description, reflection, and multiple plot lines), to develop experiences, events, and/or characters.

- Use a variety of techniques to sequence events so that they build on one another to create a coherent whole.

- Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters.

- Provide an ending that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.

9-10.W.4: Apply the writing process to –

- Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach, focusing on addressing what is most significant for a specific purpose and audience; and edit to produce and strengthen writing that is clear and coherent.

- Use technology to generate, produce, publish, and update individual or shared writing products, taking advantage of technology’s capacity to link to other information and to display information flexibly and dynamically (e.g., use of publishing programs, integration of multimedia).

9-10.W.3.3.a.1: Engage and orient the reader by setting out a problem, situation or observation in narrative compositions.

9-10.W.3.3.a.2: Establish one or more multiple points of view and introducing a narrator and/or characters in narrative compositions.

9-10.W.3.3.a.3: Create a smooth progression of experiences or events in narrative compositions.

9-10.W.3.3.a.4: Use narrative techniques, to develop experiences, events and/or characters in narrative compositions.

9-10.W.3.3.a.5: Sequence events so they build on one another to create a coherent whole in narrative compositions.

9-10.W.3.3.a.6: Use precise words and phrases, telling details and sensory language to convey a vivid picture of the experiences, events, setting and/or characters in narrative compositions.

9-10.W.3.3.a.7: Provide an ending that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.

9-10.W.3.3.a.8: Write narrative compositions in a variety of forms.

9-10.W.4.a.1: Plan, draft, develop, revise, and rewrite to focus on the most significant information for a specific purpose and audience.

9-10.W.4.a.2: Edit to produce and strengthen writing that is clear and coherent.

9-10.W.4.a.3: Use technology to generate, produce, publish and update individual or shared writing products.

9-10.W.5.a.1: Formulate an inquiry question, and refine and narrow the focus as research evolves.

<p>9-10.W.5: Conduct short as well as more sustained research assignments and tasks to build knowledge about the research process and the topic under study.</p> <ul style="list-style-type: none"> ● Formulate an inquiry question, and refine and narrow the focus as research evolves. ● Gather relevant information from multiple authoritative sources, using advanced searches effectively, and annotate sources. ● Assess the usefulness of each source in answering the research question. ● Synthesize and integrate information into the text selectively to maintain the flow of ideas. ● Avoid plagiarism and overreliance on any one source and follow a standard format (e.g., MLA, APA) for citation. ● Present information, choosing from a variety of formats. 	<p>9-10.W.5.a.2: Gather and annotate relevant information from multiple authoritative sources.</p>
<p>9-10.W.6.1: Demonstrate command of English grammar and usage, focusing on:</p>	<p>9-10.W.5.a.3: Assess the usefulness of each source in answering the research question.</p>
<p>9-10.W.6.1b: Verbs – Forming and using verbs in the indicative, imperative, interrogative, conditional, and subjunctive moods.</p>	<p>9-10.W.5.a.4: Synthesize and integrate information into the text maintain the flow of ideas.</p>
<p>9-10.W.6.1e: Usage – Identifying and using parallelism in all writing to present items in a series and items juxtaposed for emphasis.</p>	<p>9-10.W.5.a.5: Avoid plagiarism on any one source and follow a standard format (e.g. MLA, APA) for citation.</p>
<p>9-10.W.6.2: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling focusing on:</p>	<p>9-10.W.5.a.6: Present information choosing from a variety formats.</p>
<p>9-10.W.6.2b: Punctuation –</p> <ul style="list-style-type: none"> ● Using a semicolon and a conjunctive adverb to link two or more closely related independent clauses. 	<p>9-10.W.6.1.a.1: Effectively use English grammar.</p>
	<p>9-10.W.6.1b.a.1: Form and use verbs indicative, imperative, interrogative, conditional, and subjunctive moods.</p>
	<p>9-10.W.6.1e.a.1: Identify and use parallelism in writing to present items in a series.</p>
	<p>9-10.W.6.2..1: Effectively use the conventions of standard English (capitalization, punctuation, and spelling).</p>
	<p>9-10.W.6.2b.A.1: Using a semicolon and a conjunctive adverb to link two or more closely related independent clauses.</p>

SPEAKING AND LISTENING

Guiding Principle: *Students listen actively and communicate effectively for a variety of purposes, including for learning, enjoyment, persuasion, and the exchange of information and ideas. Students adjust their use of language to communicate effectively with a variety of audiences and for different purposes. Students develop an understanding of and respect for diversity in language use, patterns, and dialects.ⁱⁱⁱ*

SPEAKING AND LISTENING

There are three key areas found in the Speaking and Listening section for grades 6-12: Discussion and Collaboration, Comprehension, and Presentation of Knowledge and Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Speaking and Listening.

Learning Outcome

Indiana Academic Standards	Content Connectors
9-10.SL.1: Listen actively and adjust the use of spoken language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.	
9-10.SL.2.1: Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) on grade-appropriate topics, texts, and issues, building on others' ideas and expressing personal ideas clearly and persuasively.	9-10.SL.2.1.a.1: Clarify, verify, or challenge ideas and conclusions within a discussion on a given topic or text.
	9-10.SL.2.1.a.2: Summarize points of agreement and disagreement within a discussion on a given topic or text.
	9-10.SL.2.1.a.3: Use evidence and reasoning presented in discussion on topic or text to make new connections with own view or understanding.
	9-10.SL.2.1.a.4: Work with peers to set rules for collegial discussions and decision-making.
	9-10.SL.2.1.a.5: Actively seek the ideas or opinions of others in a discussion on a given topic or text.
	9-10.SL.2.1.a.6: Engage appropriately in discussion with others who have a diverse or divergent perspective.

Indiana Academic Standards	Content Connectors
<p>9-10.SL.2.2: Examine, analyze, and reflect on ideas and support or refute points under discussion, by providing specific evidence from materials under study and other resources.</p>	
<p>9-10.SL.2.3: Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed.</p>	<p>9-10.SL.2.3.a.1: Work with peers to set rules for collegial discussions and decision-making.</p>
<p>9-10.SL.2.4: Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions.</p>	<p>9-10.SL.2.4.a.1: Clarify, verify, or challenge ideas and conclusions within a discussion on a given topic or text.</p>
	<p>9-10.SL.2.4.a.2: Actively seek the ideas or opinions of others in a discussion on a given topic or text.</p>
<p>9-10.SL.2.5: Respond thoughtfully to multiple perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify personal views and understanding and make new connections in reference to the evidence and reasoning presented.</p>	<p>9-10.SL.2.5.a.1: Summarize points of agreement and disagreement within a discussion on a given topic or text.</p>
	<p>9-10.SL.2.5.a.2: Use evidence and reasoning presented in discussion on topic or text to make new connections with own view or understanding.</p>
	<p>9-10.SL.2.5.a.3: Engage appropriately in discussion with others who have a diverse or divergent perspective.</p>
<p>9-10.SL.3.1: Integrate multiple sources of information presented in diverse media and formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.</p>	<p>9-10.SL.3.1.a.1: Analyze credibility of sources and accuracy of information presented in social media regarding a given topic or text.</p>
<p>9-10.SL.3.2: Evaluate a speaker’s point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence.</p>	<p>9-10.SL.3.2.a.1: Determine the speaker’s point of view or purpose in a text.</p>
	<p>9-10.SL.3.2.a.2: Determine what arguments the speaker makes.</p>

Indiana Academic Standards	Content Connectors
	<p>9-10.SL.3.2.a.3: Evaluate the evidence used to make the argument.</p>
	<p>9-10.SL.3.2.a.4: Evaluate a speaker’s point of view, reasoning, and use of evidence for false statements, faulty reasoning or exaggeration.</p>
<p>9-10.SL.4.1: Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.</p>	<p>9-10.SL.4.1.a.1: Report on a topic, using a logical sequence of ideas, appropriate facts and relevant, descriptive details which support the main ideas.</p>
<p>9-10.SL.4.2: Create engaging presentations that make strategic and creative use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) to add interest and enhance understanding of findings, reasoning, and evidence.</p>	<p>9-10.SL.4.2.a.1: Report on a topic, using a logical sequence of ideas, appropriate facts and relevant, descriptive details which support the main ideas.</p>

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MEDIA LITERACY

Guiding Principle: *Students develop critical thinking about the messages received and created by media. Students recognize that media are a part of culture and function as agents of socialization and develop understanding that people use individual skills, beliefs, and experiences to construct their own meanings from media messages. Students develop media literacy skills in order to become more informed, reflective, and engaged participants in society.^{iv}*

MEDIA LITERACY

By demonstrating the skills listed in Media Literacy, students should be able to meet the Learning Outcome for Media Literacy.

Learning Outcome

Indiana Academic Standards	Content Connectors
9-10.ML.1: Critically analyze information found in electronic, print, and mass media used to inform, persuade, entertain, and transmit culture.	9-10.ML.1.A.1: Critically analyze information found in electronic, print, and mass media used to inform, persuade, entertain, and transmit culture.
9-10.ML.2.1: Analyze how media include or exclude information from visual and verbal messages to achieve a desired result.	9-10.ML.2.1.a.1: Analyze how media include or exclude information from visual messages to achieve a desired result.
	9-10.ML.2.1.a.2: Analyze how media include or exclude information from verbal messages to achieve a desired result.
9-10.ML.2.2: Analyze and interpret the changing role of the media over time in focusing the public's attention on events and in forming their opinions on issues.	9-10.ML.2.2.a.1: Interpret the changing role of the media over time in focusing the public's attention on events and in forming their opinions on issues.
	9-10.ML.2.2.a.2: Analyze the changing role of the media over time in focusing the public's attention on events and in forming their opinions on issues.

ⁱ Adapted from Standards for the English Language. National Council of Teachers of English and International Reading Association, 1996. Available at <http://www.ncte.org/library/NCTEFiles/Resources/Books/Sample/StandardsDoc.pdf>.

ⁱⁱ Ibid.

ⁱⁱⁱ Ibid.

^{iv} Adapted from Standards for the English Language. National Council of Teachers of English and International Reading Association, 1996. Available at <http://www.ncte.org/library/NCTEFiles/Resources/Books/Sample/StandardsDoc.pdf>.

GRADES 11-12

READING

Guiding Principle: *Students read a wide range of fiction, nonfiction, classic, and contemporary works, to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They read a wide range of literature in many genres from a variety of time periods and cultures from around the world to build an understanding of the many dimensions (e.g., philosophical, ethical, aesthetic) of human experience. They draw on their prior experience, their interactions with other readers and writers, and reading skills that they have developed and refined.¹*

READING: Literature

There are three key areas found in the Reading: Literature section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, and Synthesis and Connection of Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Literature.

Learning Outcome

Indiana Academic Standards	Content Connectors
Reading Literature	
11-12.RL.1: Read a variety of literature within a range of complexity appropriate for grades 11-CCR. By the end of grade 11, students interact with texts proficiently and independently at the low end of the range and with scaffolding as needed for texts at the high end of the range. By the end of grade 12, students interact with texts proficiently and independently.	11-12.RL.1.a.1: Read a variety of grade level appropriate literature
	11-12.RL.1.a.2: Read a variety of grade level appropriate literature
11-12.RL.2.1: Cite strong and thorough textual evidence to support analysis of what a text says explicitly as well as inferences and interpretations drawn from the text, including determining where the text leaves matters uncertain.	11-12.RL.2.1.a.1: Cite strong and thorough textual evidence to support analysis of what a text says explicitly.
	11-12.RL.2.1.a.2: Cite strong and thorough textual evidence to support analysis of inferences and interpretations drawn from the text.
11-12.RL.2.2: Compare and contrast the development of similar themes or central ideas across two or more works of literature and analyze how they	11-12.RL.2.2.a.1: Compare and contrast the development of similar themes or central ideas across two or more works of literature

Indiana Academic Standards	Content Connectors
emerge and are shaped and refined by specific details.	11-12.RL.2.2.a.2: Analyze how themes and central ideas emerge and are shaped and refined by specific details.
11-12.RL.2.3: Analyze the impact of the author's choices regarding how to develop and relate elements of a story or drama (<i>e.g., where a story is set, how the action is ordered, how the characters are introduced and developed</i>).	11-12.RL.2.3: Analyze the impact of the author's choices regarding how to develop and relate elements of a story or drama (<i>e.g., where a story is set, how the action is ordered, how the characters are introduced and developed</i>).
11-12.RL.3.1: Analyze and evaluate how an author's choices concerning how to structure specific parts of a work of literature (<i>e.g., the choice of where to begin or end a story, the choice to provide a comedic or tragic resolution</i>) contribute to its overall structure and meaning as well as its aesthetic impact.	11-12.RL.3.1.a.1: Analyze and evaluate how an author's choices concerning how to structure a work of literature, order events within it (<i>e.g., parallel episodes</i>), and manipulate time (<i>e.g., pacing, flashbacks</i>) create such effects as mystery, tension, or surprise.
11-12.RL.3.2: Analyze a work of literature in which the reader must distinguish between what is directly stated and what is intended (<i>e.g., satire, sarcasm, irony, or understatement</i>) in order to understand the point of view.	11-12.RL.3.2.a.1 Analyze a work of literature in which the reader must distinguish between what is directly stated and what is intended (<i>e.g., satire, sarcasm, irony, or understatement</i>)
	11-12.RL.3.2.a.2 Understand point of view based on what is directly and what is intended.
11-12.RL.4.1: Analyze multiple interpretations of a story, play, or poem, evaluating how each version interprets the source text and the impact of the interpretations on the audience.	11-12.RL.4.1.a.1 Analyze multiple interpretations of a story, play, or poem, evaluating how each version interprets the source text.
	11-12.RL.4.1.a.2 Analyze multiple interpretations of a story, play, or poem, evaluating how interpretations impact the audience.
11-12.RL.4.2: Analyze and evaluate works of literary or cultural significance in history (American, English, or world) and the way in which these works have used archetypes drawn from myths, traditional stories, or religious works, as well as how two or more of the works treat similar themes, conflicts, issues, or topics.	11-12.RL.4.2.a.1: Analyze and evaluate works of literary or cultural significance in history (American, English, or world) and the way in which these works have used archetypes drawn from myths, traditional stories, or religious works, as well as how two or more of the works treat similar themes, conflicts, issues, or topics.

READING: Nonfiction

There are three key areas found in the Reading: Nonfiction section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, and Synthesis and Connection of Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Nonfiction.

Learning Outcome

Indiana Academic Standards	Content Connectors
Reading Nonfiction	
11-12.RN.3.2: Analyze and evaluate the effectiveness of the structure an author uses in his or her exposition or argument, including whether the structure makes points clear, convincing, and engaging.	11-12.RN.3.2.a.1: Analyze and evaluate the effectiveness of the structure an author uses in his or her exposition or argument, including whether the structure makes points clear, convincing, and engaging.
11-12.RN.3.3: Determine an author’s perspective or purpose in a text in which the rhetoric is particularly effective (<i>e.g., appeals to both friendly and hostile audiences, anticipates and addresses reader concerns and counterclaims</i>), analyzing how style and content contribute to the power, persuasiveness or beauty of the text.	11-12.RN.3.3.a.1: Determine an author’s perspective or purpose in a text.
	11-12.RN.3.3.b.1: Analyze how an author uses rhetoric to advance that perspective or purpose.
11-12.RN.4.1: Delineate and evaluate the arguments and specific claims in seminal U.S. and world texts, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning.	11-12.RN.4.1.a.1: Delineate and evaluate the argument and specific claims in a text. 11-12.RN.4.1.a.2: Assess whether the reasoning is valid and the evidence is relevant and sufficient. 11-12.RN.4.1.a.3: Identify false statements and fallacious reasoning.
11-12.RN.4.2: Synthesize and evaluate multiple sources of information presented in different media or formats as well as in words in order to address a question or solve a problem.	11-12.RN.4.2.a.1: Synthesize and evaluate multiple sources of information presented in different media or formats as well as in words in order to address a question or solve a problem.
11-12.RN.4.3: Analyze and synthesize foundational U.S. and world documents	11-12.RN.4.3.a.1: Analyze and synthesize foundational U.S. and world

Indiana Academic Standards	Content Connectors
of historical and literary significance for their themes, purposes, and rhetorical features.	documents of historical and literary significance for their themes.
	11-12.RN.4.3.a.2: Analyze and synthesize foundational U.S. and world documents of historical and literary significance for their purposes.
	11-12.RN.4.3.a.3: Analyze and synthesize foundational U.S. and world documents of historical and literary significance for their rhetorical features.

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READING: Vocabulary

There are two key areas found in the Reading: Vocabulary section for grades 6-12: Vocabulary Building and Vocabulary in Literature and Nonfiction Texts. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Reading: Vocabulary.

Learning Outcome

Indiana Academic Standards	Content Connectors
Reading Vocabulary	
<p>11-12.RV.1: Acquire and use accurately general academic and content-specific words and phrases at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.</p>	<p>11-12.RV.1.a.1: Use grade appropriate general academic and domain-specific words and phrases accurately within writing.</p>
<p>11-12.RV.2.1: Use context to determine or clarify the meaning of words and phrases.</p>	<p>11-12.RV.2.1.a.1: Use context to determine or clarify the meaning of words and phrases.</p>
<p>11-12.RV.2.2: <i>Students are expected to build upon and continue applying concepts learned previously.</i></p>	
<p>11-12.RV.2.3: Analyze nuances in the meaning of words with similar denotations.</p>	<p>11-12.RV.2.3.a.1: Identify words with similar denotations.</p>
	<p>11-12.RV.2.3.a.2: Analyze nuances in the meaning of words with similar denotations.</p>
<p>11-12.RV.2.4: Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., <i>conceive, conception, conceivable</i>).</p>	<p>11-12.RV.2.4.a.1: Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., <i>conceive, conception, conceivable</i>).</p>
<p>11-12.RV.2.5: Select appropriate general and specialized reference materials, both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, part of speech, etymology, or standard usage.</p>	<p>11-12.RV.2.5.a.1: Consult print and digital reference materials (e.g., dictionaries, glossaries, thesauruses) to find the <i>synonym</i> for a word.</p>
	<p>11-12.RV.2.5.a.2: Consult print and digital reference materials (e.g., dictionaries, glossaries, thesauruses) to find the <i>precise meaning</i> of a word.</p>

Indiana Academic Standards	Content Connectors
	<p>11-12.RV.2.5.a.3: Consult print and digital reference materials (e.g., dictionaries, glossaries, thesauruses) to find the <i>part of speech</i> for a word.</p>
<p>11-12.RV.3.1: Analyze the meaning of words and phrases as they are used in works of literature, including figurative and connotative meanings; analyze the cumulative impact of specific word choices (e.g., <i>imagery, allegory, and symbolism</i>) on meaning and tone (e.g., <i>how the language evokes a sense of time and place; how it sets a formal or informal tone</i>).</p>	<p>11-12.RV.3.1.a.1: Analyze the meaning of words and phrases as they are used in works of literature, including figurative and connotative meanings</p>
	<p>11-12.RV.3.1.a.2: Analyze the cumulative impact of specific word choices (e.g., <i>imagery, allegory, and symbolism</i>) on meaning and tone (e.g., <i>how the language evokes a sense of time and place; how it sets a formal or informal tone</i>).</p>
<p>11-12.RV.3.2: Determine the meaning of words and phrases as they are used in a nonfiction text, including figurative, connotative, and technical meanings; evaluate the cumulative impact of how an author uses and refines the meaning of a key term or terms over the course of a text.</p>	<p>11-12.RV.3.2.a.1: Determine the meaning of words and phrases as they are used in a nonfiction text, including figurative, connotative, and technical meanings</p>
	<p>11-12.RV.3.2.a.2: Evaluate the cumulative impact of how an author uses and refines the meaning of a key term or terms over the course of a text.</p>
<p>11-12.RV.3.3: Interpret figures of speech (e.g., <i>paradox</i>) in context and analyze their role in the text.</p>	<p>11-12.RV.3.3.a.1: Interpret figures of speech (e.g., euphemism, oxymoron) in context.</p>
	<p>11-12.RV.3.3.a.2: Analyze the role of figures of speech in the text.</p>

WRITING

Guiding Principle: *Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes. Students apply knowledge of language structure, language conventions, media techniques, figurative language, and genre to create, critique, and discuss writing. Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources to communicate their discoveries in ways that suit their purpose and audience.ⁱⁱ*

WRITING

There are four key areas found in the Writing section for grades 6-12: Writing Genres, the Writing Process, the Research Process, and Conventions of Standard English. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Writing.

Learning Outcome

Indiana Academic Standards	Content Connectors
Writing	
11-12.W.1: (Learning Outcome) Write routinely over a variety of time frames for a range of tasks, purposes, and audiences; apply reading standards to support analysis, reflection, and research by drawing evidence from literature and nonfiction texts.	11-12.W.1.a.1 . Write routinely over a variety of time frames for varying tasks, purposes, and audiences.
	11-12.W.1.a.2 Apply reading standards to write in response to literature and nonfiction texts.
11-12.W.3.1: Write arguments in a variety of forms that – <ul style="list-style-type: none"> ● Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences claim(s), counterclaims, reasons, and evidence. ● Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of 	11-12.W.3.1 a. 1 Introduce precise claims and distinguish them from counter claims in an argument.
	11-12.W.3.1 a. 2 Develop claims and counter claims giving evidence for each, including strengths and limitations in an argument.

Indiana Academic Standards	Content Connectors
<p>both in a manner that anticipates the audience’s knowledge level, concerns, values, and possible biases.</p> <ul style="list-style-type: none"> ● Use effective transitions as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. ● Establish and maintain a consistent style and tone appropriate to purpose and audience. ● Provide a concluding statement or section that follows from and supports the argument presented. 	<p>11-12.W.3.1 a. 3 Use effective transitions to link the major sections between claim(s) and counterclaims in an argument.</p> <p>11-12.W.3.1 a. 4 Establish and maintain a consistent style and tone appropriate to purpose and audience in an argument.</p> <p>11-12.W.3.1 a. 5 Provide a concluding statement or paragraph that follows from and supports the argument presented in an argument.</p>
<p>11-12.W.3.2: Write informative compositions in a variety of forms that –</p> <ul style="list-style-type: none"> ● Introduce a topic; organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. ● Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic. ● Use appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. ● Choose language, content-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic, 	<p>11-12.W.3.2 a.1 Introduce a topic in an informative composition.</p> <p>11-12.W.3.2 a.2 Organize ideas, concepts, and information into broader categories (including formatting (e.g. headings), graphics (e.g., charts, tables), and multimedia) to aid comprehension in an informative composition.</p> <p>11-12.W.3.2 a.3 Develop the topic thoroughly by selecting the most significant and relevant facts, definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic in an informative composition.</p> <p>11-12.W.3.2 a.4 Use appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts in an informative composition.</p>

Indiana Academic Standards	Content Connectors
<p>recognizing and eliminating wordiness and redundancy.</p> <ul style="list-style-type: none"> Establish and maintain a style appropriate to the purpose and audience. Provide a concluding statement or section that follows from and supports the information or explanation presented (<i>e.g., articulating implications or the significance of the topic</i>). 	<p>11-12.W.3.2 a.5 Choose language, content-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic, recognizing and eliminating wordiness and redundancy in an informative composition.</p> <p>11-12.W.3.2 a.6 Establish and maintain a style appropriate to the purpose and audience in an informative composition.</p> <p>11-12.W.3.2 a.7 Provide a concluding statement or paragraph that follows from and supports the information or explanation presented in an informative composition.</p> <p>11-12.W.3.2.a.8: Write informative compositions on a variety of topics.</p>
<p>11-12.W.3.3: Write narrative compositions in a variety of forms that –</p> <ul style="list-style-type: none"> Engage and orient the reader by setting out a problem, situation, or observation and its significance, establishing one or multiple point(s) of view, and introducing a narrator and/or characters. Create a smooth progression of experiences or events. Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters. Use a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome (<i>e.g., a sense of mystery, suspense, growth, or resolution</i>). 	<p>11-12.W.3.3.a.1 Engage and orient the reader by setting out a problem, situation, or observation and its significance in a narrative composition.</p> <p>11-12.W.3.3 a.2 Establish one or multiple point(s) of view, and introducing a narrator and/or characters in a narrative composition.</p> <p>11-12.W.3.3 a.3 Create a smooth progression of experiences or events in a narrative composition.</p> <p>11-12.W.3.3.a.4 Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters in a narrative composition.</p>

Indiana Academic Standards	Content Connectors
<ul style="list-style-type: none"> ● Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters. ● Provide an ending that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative. 	<p>11-12.W.3.3.a.5 Sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome in a narrative composition.</p> <p>11-12.W.3.3.a.6 Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters in a narrative composition.</p> <p>11-12.W.3.3.a.7 Provide an ending that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative in a narrative composition.</p> <p>11-12.W.3.3.a.8: Write narrative compositions in a variety of forms.</p>
<p>11-12.W.4: Apply the writing process to –</p> <ul style="list-style-type: none"> ● Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach, focusing on addressing what is most significant for a specific purpose and audience; and edit to produce and strengthen writing that is clear and coherent. ● Use technology to generate, produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. 	<p>11-12.W.4.a.1 Plan, develop, draft, revise, and rewrite to focus on the most significant information for a specific purpose and audience. CC2 Edit to produce and strengthen writing that is clear and coherent.</p> <p>11-12.W.4 a. 2 Use technology to generate, produce, publish, and update individual or shared writing products.</p>
<p>11-12.W.5: Conduct short as well as more sustained research assignments and tasks to build knowledge about the research process and the topic under study.</p>	<p>11-12.W.5 a1 Formulate an inquiry question, and refine and narrow the focus as research evolves.</p>

Indiana Academic Standards	Content Connectors
<ul style="list-style-type: none"> ● Formulate an inquiry question, and refine and narrow the focus as research evolves. ● Gather relevant information from multiple types of authoritative sources, using advanced searches effectively, and annotate sources. ● Assess the strengths and limitations of each source in terms of the task, purpose, and audience. ● Synthesize and integrate information into the text selectively to maintain the flow of ideas. ● Avoid plagiarism and overreliance on any one source and follow a standard format (<i>e.g., MLA, APA</i>) for citation. ● Present information, choosing from a variety of formats. 	<p>11-12.W.5 a2 Gather and annotate relevant information from multiple types of authoritative sources.</p>
	<p>11-12.W.5 a3 Assess the strengths and limitations of each source in terms of the task, purpose, and audience.</p>
	<p>11-12.W.5 a 4 Synthesize and integrate information into the text to maintain the flow of ideas.</p>
	<p>11-12.W.5 a 5 Avoid plagiarism and overreliance on any one source and follow a standard format (<i>e.g., MLA, APA</i>) for citation.</p>
	<p>11-12.W.5 a 6 Present information, choosing from a variety of formats.</p>

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SPEAKING AND LISTENING

Guiding Principle: *Students listen actively and communicate effectively for a variety of purposes, including for learning, enjoyment, persuasion, and the exchange of information and ideas. Students adjust their use of language to communicate effectively with a variety of audiences and for different purposes. Students develop an understanding of and respect for diversity in language use, patterns, and dialects.ⁱⁱⁱ*

SPEAKING AND LISTENING

There are three key areas found in the Speaking and Listening section for grades 6-12: Discussion and Collaboration, Comprehension, and Presentation of Knowledge and Ideas. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Speaking and Listening.

Learning Outcome

Indiana Academic Standards	Content Connectors
Speaking and Listening	
11-12.SL.1: Listen actively and adjust the use of spoken language (<i>e.g., conventions, style, vocabulary</i>) to communicate effectively with a variety of audiences and for different purposes.	
11-12.SL.2.1: Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) on grade-appropriate topics, texts, and issues, building on others' ideas and expressing personal ideas clearly and persuasively.	11-12.SL.2.1.a.1: Clarify, verify, or challenge ideas and conclusions within a discussion on a given topic or text.
	11-12.SL.2.1.a.2: Summarize points of agreement and disagreement within a discussion on a given topic or text.
	11-12.SL.2.1.a.3: Use evidence and reasoning presented in discussion on topic or text to make new connections with own view or understanding.
	11-12.SL.2.1.a.4: Work with peers to set rules for collegial discussions and decision-making.
	11-12.SL.2.1.a.5: Actively seek the ideas or opinions of others in a discussion on a given topic or text.

Indiana Academic Standards	Content Connectors
	<p>11-12.SL.2.1.a.6: Engage appropriately in discussion with others who have a diverse or divergent perspective.</p>
<p>11-12.SL.2.2: Stimulate a thoughtful, well-reasoned debate and exchange of ideas by referring to specific evidence from materials under study and additional research and resources.</p>	
<p>11-12.SL.2.3: Work with peers to promote collegial discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed.</p>	<p>11-12.SL.2.3.a.1: Work with peers to promote collegial discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed.</p>
	<p>11-12.SL.2.3.a.2: Work with peers to set clear goals and deadlines, and establish individual roles as needed.</p>
<p>11-12.SL.2.4: Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives.</p>	<p>11-12.SL.2.4.a.1: Posing and respond to questions that probe reasoning and evidence.</p> <p>11-12.SL.2.4.a.2: Clarify, verify, or challenge ideas and conclusions.</p>
<p>11-12.SL.2.5: Conduct debate and discussion to allow all views to be presented; allow for a dissenting view, in addition to group compromise; and determine what additional information or research is required to deepen the investigation or complete the task.</p>	<p>11-12.SL.2.5.a.1: Conduct debate and discussion to allow all views to be presented; allow for a dissenting view, in addition to group compromise</p> <p>11-12.SL.2.5.a.2: During discussion, determine what additional information or research is required to deepen the investigation or complete the task</p>
<p>11-12.SL.3.1: Integrate multiple sources of information presented in diverse media and formats (<i>e.g., visually, quantitatively, orally</i>) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.</p>	<p>11-12.SL.3.1.a.1 Analyze credibility of sources and accuracy of information presented in social media regarding a given topic or text.</p>
<p>11-12.SL.3.2: Evaluate a speaker’s point of view, reasoning, and use of evidence and rhetoric, assessing the stance, premises, links among ideas, word choice,</p>	<p>11-12.SL.3.2.a.1: Evaluate a speaker’s point of view, reasoning, and use of evidence and rhetoric, assessing the stance, premises, links among ideas,</p>

Indiana Academic Standards	Content Connectors
points of emphasis, and tone used.	word choice, points of emphasis, and tone used.
<p>11-12.SL.4.1: Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.</p>	<p>11-12.SL.4.1.a.1: Report on a topic, using a logical sequence of ideas, appropriate facts and relevant, descriptive details which support the main ideas.</p>
<p>11-12.SL.4.2: Create engaging presentations that make strategic and creative use of digital media (<i>e.g., textual, graphical, audio, visual, and interactive elements</i>) to add interest and enhance understanding of findings, reasoning, and evidence.</p>	<p>11-12.SL.4.2.a.1: Report on a topic, using a logical sequence of ideas, appropriate facts and relevant, descriptive details and reasoning which support the main ideas.</p>

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MEDIA LITERACY

Guiding Principle: *Students develop critical thinking about the messages received and created by media. Students recognize that media are a part of culture and function as agents of socialization and develop understanding that people use individual skills, beliefs, and experiences to construct their own meanings from media messages. Students develop media literacy skills in order to become more informed, reflective, and engaged participants in society.^{iv}*

MEDIA LITERACY

By demonstrating the skills listed in Media Literacy, students should be able to meet the Learning Outcome for Media Literacy.

Learning Outcome

Indiana Academic Standards	Content Connectors
Media Literacy	
11-12.ML.1: Critically analyze information found in electronic, print, and mass media used to inform, persuade, entertain, and transmit culture.	11-12.ML.1.a.1 Critically analyze information found in electronic, print, and mass media used to inform, persuade, entertain, and transmit culture.
11-12.ML.2.1: Evaluate the intersections and conflicts between visual and verbal messages, and recognize how visual techniques or design elements carry or influence messages in various media.	11-12.ML.2.1a.1 Evaluate the intersections and conflicts between visual and verbal messages.
	11-12.ML.2.1.a.2 Recognize how visual techniques or design elements carry or influence messages in various media.
11-12.ML.2.2: Analyze the impact of the media on the public, including identifying and analyzing rhetorical and logical fallacies.	11-12.ML.2.2.a.1 Analyze the impact of the media on the public.
	11-12.ML.2.2.a.2 Analyze the impact of the media on the public, including identifying and analyzing rhetorical and logical fallacies.

ⁱ Adapted from Standards for the English Language. National Council of Teachers of English and International Reading Association, 1996. Available at <http://www.ncte.org/library/NCTEFiles/Resources/Books/Sample/StandardsDoc.pdf>.

ⁱⁱ Ibid.

ⁱⁱⁱ Ibid.

^{iv} Adapted from Standards for the English Language. National Council of Teachers of English and International Reading Association, 1996. Available at <http://www.ncte.org/library/NCTEFiles/Resources/Books/Sample/StandardsDoc.pdf>.

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Grade 3

PROCESS STANDARDS FOR MATHEMATICS

The Process Standards demonstrate the ways in which students should develop conceptual understanding of mathematical content, and the ways in which students should synthesize and apply mathematical skills.

PROCESS STANDARDS FOR MATHEMATICS	
PS.1: Make sense of problems and persevere in solving them.	Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway, rather than simply jumping into a solution attempt. They consider analogous problems and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" and "Is my answer reasonable?" They understand the approaches of others to solving complex problems and identify correspondences between different approaches. Mathematically proficient students understand how mathematical ideas interconnect and build on one another to produce a coherent whole.
PS.2: Reason abstractly and quantitatively.	Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.
PS.3: Construct viable arguments and critique the reasoning of others.	Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They analyze situations by breaking them into cases and recognize and use counterexamples. They organize their mathematical thinking, justify their conclusions and communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. They justify whether a given statement is true always, sometimes, or never. Mathematically proficient students participate and collaborate in a mathematics community. They listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

PROCESS STANDARDS FOR MATHEMATICS

<p>PS.4: Model with mathematics.</p>	<p>Mathematically proficient students apply the mathematics they know to solve problems arising in everyday life, society, and the workplace using a variety of appropriate strategies. They create and use a variety of representations to solve problems and to organize and communicate mathematical ideas. Mathematically proficient students apply what they know and are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.</p>
<p>PS.5: Use appropriate tools strategically.</p>	<p>Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Mathematically proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. Mathematically proficient students identify relevant external mathematical resources, such as digital content, and use them to pose or solve problems. They use technological tools to explore and deepen their understanding of concepts and to support the development of learning mathematics. They use technology to contribute to concept development, simulation, representation, reasoning, communication and problem solving.</p>
<p>PS.6: Attend to precision.</p>	<p>Mathematically proficient students communicate precisely to others. They use clear definitions, including correct mathematical language, in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They express solutions clearly and logically by using the appropriate mathematical terms and notation. They specify units of measure and label axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently and check the validity of their results in the context of the problem. They express numerical answers with a degree of precision appropriate for the problem context.</p>
<p>PS.7: Look for and make use of structure.</p>	<p>Mathematically proficient students look closely to discern a pattern or structure. They step back for an overview and shift perspective. They recognize and use properties of operations and equality. They organize and classify geometric shapes based on their attributes. They see expressions, equations, and geometric figures as single objects or as being composed of several objects.</p>
<p>PS.8: Look for and express regularity in repeated reasoning.</p>	<p>Mathematically proficient students notice if calculations are repeated and look for general methods and shortcuts. They notice regularity in mathematical problems and their work to create a rule or formula. Mathematically proficient students maintain oversight of the process, while attending to the details as they solve a problem. They continually evaluate the reasonableness of their intermediate results.</p>

MATHEMATICS: GRADE 3

The Mathematics standards for grade 3 are supplemented by the Process Standards for Mathematics.

The Mathematics standards for grade 3 are made up of 5 strands: Number Sense; Computation; Algebraic Thinking; Geometry; Measurement; and Data Analysis. The skills listed in each strand indicate what students in grade 3 should know and be able to do in Mathematics.

NUMBER SENSE

Indiana Academic Standards	Content Connectors
MA.3.NS.1: Read and write whole numbers up to 10,000. Use words, models, standard form and expanded form to represent and show equivalent forms of whole numbers up to 10,000.	MA.3.NS.1.a.1: Read, demonstrate, and write whole numbers up to 200, in standard and word form
MA.3.NS.1: Compare two whole numbers up to 10,000 using $>$, $=$, and $<$ symbols.	MA.3.NS.2.a.1: Compare two whole numbers up to 200 using $>$, $=$, and $<$ symbols and words.
MA.3.NS.3: Understand a fraction, $1/b$, as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction, a/b , as the quantity formed by a parts of size $1/b$. [In grade 3, limit denominators of fractions to 2, 3, 4, 6, 8.]	MA.3.NS.3.a.1: Identify the numerator of a fraction
	MA.3.NS.3.a.2: Identify the denominator of fractions to halves, thirds, fourths.
	MA.3.NS.3.a.3: Identify halves, thirds, fourths of a whole.
MA.3.NS.4: Represent a fraction, $1/b$, on a number line by defining the interval from 0 to 1 as the whole, and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line.	MA.3.NS.4.a.1: Locate given common unit fractions (i.e., $1/2$, $1/4$) on a number line that has a value between 0 and 1.
MA.3.NS.5: Represent a fraction, a/b , on a number line by marking off lengths $1/b$ from 0. Recognize that the resulting interval has size a/b , and that its endpoint locates the number a/b on the number line.	MA.3.NS.5.a.1: Represent halves and fourths between 0 and 1 on a number line.
MA.3.NS.6: Understand two fractions as equivalent (equal) if they are the same size, based on the same whole or the same point on a number line.	MA.3.NS.6: Understand two fractions as equivalent (equal).
MA.3.NS.7: Recognize and generate simple equivalent fractions (e.g., $1/2 = 2/4$, $4/6 = 2/3$). Explain why the fractions are equivalent (e.g., by using a visual fraction model).	MA.3.NS.7.a.1: Recognize simple equivalent fractions using models to show equivalence.
MA.3.NS.8: Compare two fractions with the same numerator or the same denominator by reasoning about their size based on the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions (e.g., by using a visual fraction model).	MA.3.NS.8.a.1: Use $=$, $<$, or $>$ and/or words to compare two fractions with the same denominator using a model.
MA.3.NS.9: Use place value understanding to round 2- and 3-digit whole numbers to the nearest 10 or 100.	MA.3.NS.9.a.1: Use place value to round two-digit numbers to the nearest 10

Indiana Academic Standards	Content Connectors
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Computation

Indiana Academic Standards	Content Connectors
MA.3.C.1: Add and subtract whole numbers fluently within 1000.	MA.3.C.1.a.1: Add and subtract whole numbers with sums up to 100.
MA.3.C.2: Represent the concept of multiplication of whole numbers with the following models: equal-sized groups, arrays, area models, and equal "jumps" on a number line. Understand the properties of 0 and 1 in multiplication.	MA.3.C.2.a.1: Represent the concept of multiplication with manipulatives and arrays with numbers 1, 5, and 10.
MA.3.C.3: Represent the concept of division of whole numbers with the following models: partitioning, sharing, and an inverse of multiplication. Understand the properties of 0 and 1 in division.	MA.3.C.3.a.1: Represent division by sorting a set number of objects into a set number of groups. Up to 20 objects into up to 5 groups.
MA.3.C.4: Interpret whole-number quotients of whole numbers (e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each).	MA.3.C.4.a.1: Use representations of division (by sorting a set number of objects into a set number of groups) to find how many in one group. Up to 20 objects into up to 5 groups.
MA.3.C.5: Multiply and divide within 100 using strategies, such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$), or properties of operations.	MA.3.C.5.a.1: Apply strategies of multiplication, including zero property of multiplication and identity property multiplication.
MA.3.C.6: Demonstrate fluency with multiplication facts and corresponding division facts of 0 to 10.	MA.3.C.6.a.1: Solve multiplication facts up to 10.

Algebraic Thinking

Indiana Academic Standards	Content Connectors
MA.3.AT.1: Solve real-world problems involving addition and subtraction of whole numbers within 1000 (e.g., by using drawings and equations with a symbol for the unknown number).	MA.3.AT.1.a.1: Use pictures and/or manipulatives to solve real-world addition and subtraction word problems with sums up to 100.
MA.3.AT.2: Solve real-world problems involving whole number multiplication and division within 100 in situations involving equal groups, arrays, and measurement quantities (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).	MA.3.AT.2.a.1: Use pictures, manipulatives, and/or arrays to solve real world one step multiplication and division word problems within 100.
MA.3.AT.3: Solve two-step real-world problems using the four operations of addition, subtraction, multiplication and division (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).	MA.3.AT.3.a.1: Use pictures, manipulatives, and/or tables to solve real-world two-step addition and subtraction word problems up to 100.

Indiana Academic Standards	Content Connectors
MA.3.AT.4: Interpret a multiplication equation as equal groups (e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each). Represent verbal statements of equal groups as multiplication equations.	MA.3.AT.4.a.1: Create a model to represent a multiplication problem.
MA.3.AT.5: Determine the unknown whole number in a multiplication or division equation relating three whole numbers.	MA.3.AT.5.a.1: Apply properties of operations as strategies to multiplication or division.
MA.3.AT.6: Create, extend, and give an appropriate rule for number patterns using multiplication within 1000.	MA.3.AT.6.a.1: Identify number patterns using multiplication within 100.

Geometry

Indiana Academic Standards	Content Connectors
MA.3.G.1: Identify and describe the following: cube, sphere, prism, pyramid, cone, and cylinder.	MA.3.G.1.a.1: Identify the following: cube, sphere, cylinder, cone.
MA.3.G.2: Understand that shapes (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize and draw rhombuses, rectangles, and squares as examples of quadrilaterals. Recognize and draw examples of quadrilaterals that do not belong to any of these subcategories.	MA.3.G.2.a.1: Identify shared attributes of shapes based on the models provided.
MA.3.G.3: Identify, describe and draw points, lines and line segments using appropriate tools (e.g., ruler, straightedge, and technology), and use these terms when describing two-dimensional shapes.	MA.3.G.3.a.1: Use points to create a straight line with a ruler or straight edge technology.
MA.3.G.4: Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole ($1/2$, $1/3$, $1/4$, $1/6$, $1/8$).	MA.3.G.4.a.1: Partition shapes into equal parts (halves, thirds, fourths) with equal area.

Measurement

Indiana Academic Standards	Content Connectors
MA.3.M.1: Estimate and measure the mass of objects in grams (g) and kilograms (kg) and the volume of objects in quarts (qt), gallons (gal), and liters (l). Add, subtract, multiply, or divide to solve one-step real-world problems involving masses or volumes that are given in the same units (e.g., by using drawings, such as a beaker with a measurement scale, to represent the problem).	MA.3.M.1.a.1: Measure volume using gallons, quarts, liters.
MA.3.M.2: Choose and use appropriate units and tools to estimate and measure length, weight, and temperature. Estimate and measure length to a quarter-	MA.3.M.2.a.1: Select appropriate tool for measuring length, weight, and temperature.

Indiana Academic Standards	Content Connectors
inch, weight in pounds, and temperature in degrees Celsius and Fahrenheit.	
MA.3.M.3: Tell and write time to the nearest minute from analog clocks, using a.m. and p.m., and measure time intervals in minutes. Solve real-world problems involving addition and subtraction of time intervals in minutes.	MA.3.M.3.a.1: Tell and write time to the nearest quarter hour. Solve real-world word problems involving the addition and subtraction of time intervals to whole hours or within an hour (e.g., whole hours: 5:00 to 8:00, within hours: 7:15 to 7:45) using manipulatives or pictures of a clock.
MA.3.M.4: Find the value of any collection of coins and bills. Write amounts less than a dollar using the ¢ symbol and write larger amounts using the \$ symbol in the form of dollars and cents (e.g., \$4.59). Solve real-world problems to determine whether there is enough money to make a purchase.	MA.3.M.4.a.1: Solve real-world problems to determine whether there is enough money to make a purchase using the next dollar strategy (round up to the next whole dollar).
MA.3.M.5: Find the area of a rectangle with whole-number side lengths by modeling with unit squares, and show that the area is the same as would be found by multiplying the side lengths. Identify and draw rectangles with the same perimeter and different areas or with the same area and different perimeters.	MA.3.M.5.a.1: Find the area of rectangles by modeling with unit squares.
MA.3.M.6: Multiply side lengths to find areas of rectangles with whole-number side lengths to solve real-world problems and other mathematical problems involving shapes, and represent whole-number products as rectangular areas in mathematical reasoning.	MA.3.M.6.a.1: Use tiling and addition to determine area of a rectangle.
MA.3.M.7: Find perimeters of polygons given the side lengths or by finding an unknown side length.	MA.3.M.7.a.1: Identify a figure as getting larger or smaller when the dimensions of the figure change.
	MA.3.M.7.a.2: Use addition to find the perimeter of a polygon.

Data Analysis

Indiana Academic Standards	Content Connectors
MA.3.DA.1: Create scaled picture graphs, scaled bar graphs, and frequency tables to represent a data set—including data collected through observations, surveys, and experiments—with several categories. Solve one- and two-step “how many more” and “how many less” problems regarding the data and make predictions based on the data.	MA.3.DA.1.a.1: Organize given data into a graph.
	MA.3.DA.1.a.2: Select the appropriate statement that describes the data representations based on a given bar graph or picture graph.
MA.3.DA.2: Generate measurement data by measuring lengths with rulers to the nearest quarter of an inch. Display the data by making a line plot, where the horizontal scale is marked off in appropriate units, such as whole numbers, halves, or quarters.	MA.3.DA.2.a.1: Organize measurement data into a line plot.

Indiana Academic Standards	Content Connectors

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Grade 4

PROCESS STANDARDS FOR MATHEMATICS

The Process Standards demonstrate the ways in which students should develop conceptual understanding of mathematical content, and the ways in which students should synthesize and apply mathematical skills.

PROCESS STANDARDS FOR MATHEMATICS	
<p>PS.1: Make sense of problems and persevere in solving them.</p>	<p>Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway, rather than simply jumping into a solution attempt. They consider analogous problems and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" and "Is my answer reasonable?" They understand the approaches of others to solving complex problems and identify correspondences between different approaches. Mathematically proficient students understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p>
<p>PS.2: Reason abstractly and quantitatively.</p>	<p>Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.</p>
<p>PS.3: Construct viable arguments and critique the reasoning of others.</p>	<p>Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They analyze situations by breaking them into cases and recognize and use counterexamples. They organize their mathematical thinking, justify their conclusions and communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. They justify whether a given statement is true always, sometimes, or never. Mathematically proficient students participate and collaborate in a mathematics community. They listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.</p>

PROCESS STANDARDS FOR MATHEMATICS

<p>PS.4: Model with mathematics.</p>	<p>Mathematically proficient students apply the mathematics they know to solve problems arising in everyday life, society, and the workplace using a variety of appropriate strategies. They create and use a variety of representations to solve problems and to organize and communicate mathematical ideas.</p> <p>Mathematically proficient students apply what they know and are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.</p>
<p>PS.5: Use appropriate tools strategically.</p>	<p>Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Mathematically proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. Mathematically proficient students identify relevant external mathematical resources, such as digital content, and use them to pose or solve problems. They use technological tools to explore and deepen their understanding of concepts and to support the development of learning mathematics. They use technology to contribute to concept development, simulation, representation, reasoning, communication and problem solving.</p>
<p>PS.6: Attend to precision.</p>	<p>Mathematically proficient students communicate precisely to others. They use clear definitions, including correct mathematical language, in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They express solutions clearly and logically by using the appropriate mathematical terms and notation. They specify units of measure and label axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently and check the validity of their results in the context of the problem. They express numerical answers with a degree of precision appropriate for the problem context.</p>
<p>PS.7: Look for and make use of structure.</p>	<p>Mathematically proficient students look closely to discern a pattern or structure. They step back for an overview and shift perspective. They recognize and use properties of operations and equality. They organize and classify geometric shapes based on their attributes. They see expressions, equations, and geometric figures as single objects or as being composed of several objects.</p>
<p>PS.8: Look for and express regularity in repeated reasoning.</p>	<p>Mathematically proficient students notice if calculations are repeated and look for general methods and shortcuts. They notice regularity in mathematical problems and their work to create a rule or formula. Mathematically proficient students maintain oversight of the process, while attending to the details as they solve a problem. They continually evaluate the reasonableness of their intermediate results.</p>

MATHEMATICS: GRADE 4

The Mathematics standards for grade 4 are supplemented by the Process Standards for Mathematics.

The Mathematics standards for grade 4 are made up of 5 strands: Number Sense; Computation; Algebraic Thinking; Geometry; Measurement; and Data Analysis. The skills listed in each strand indicate what students in grade 4 should know and be able to do in Mathematics.

NUMBER SENSE

Indiana Academic Standards	Content Connectors
MA.4.NS.1: Read and write whole numbers up to 1,000,000. Use words, models, standard form and expanded form to represent and show equivalent forms of whole numbers up to 1,000,000.	MA.4.NS.1.a.1: Read, demonstrate, and write whole numbers up to 500.
MA.4.NS.2: Compare two whole numbers up to 1,000,000 using $>$, $=$, and $<$ symbols.	MA.4.NS.2.a.1: Compare two whole numbers up to 500 using $>$, $=$, and $<$ symbols and words.
MA.4.NS.3: Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers. Name and write mixed numbers using objects or pictures. Name and write mixed numbers as improper fractions using objects or pictures.	MA.4.NS.3.a.1: Express a whole number as a fraction.
MA.4.NS.4: Explain why a fraction, a/b , is equivalent to a fraction, $(n \times a)/(n \times b)$, by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use the principle to recognize and generate equivalent fractions. [In grade 4, limit denominators of fractions to 2, 3, 4, 5, 6, 8, 10, 25, 100.]	MA.4.NS.4.a.1: Using a model, show equivalent fractions for fractions up to tenths.
MA.4.NS.5: Compare two fractions with different numerators and different denominators (e.g., by creating common denominators or numerators, or by comparing to a benchmark, such as 0, $1/2$, and 1). Recognize comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions (e.g., by using a visual fraction model).	MA.4.NS.5.a.1: Use symbols $=$, $<$, or $>$ and words to compare two fractions (fractions with the different denominator of 10 or less).
MA.4.NS.6: Write tenths and hundredths in decimal and fraction notations. Use words, models, standard form and expanded form to represent decimal numbers to hundredths. Know the fraction and decimal equivalents for halves and fourths (e.g., $1/2 = 0.5 = 0.50$, $7/4 = 1 \frac{3}{4} = 1.75$).	<p>MA.4.NS.6.a.1: Write tenths in decimal and fraction notations.</p> <p>MA.4.NS.6.a.2: Know the fraction and decimal equivalent for halves and fourths up to 1.</p>

<p>MA.4.NS.7: Compare two decimals to hundredths by reasoning about their size based on the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions (e.g., by using a visual model).</p>	<p>MA.4.NS.7.a.1: Compare two decimals to the tenths place with a value of less than 1.</p>
<p>MA.4.NS.8: Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number.</p>	<p>MA.4.NS.8.a.1: Identify a factor pair for a product up to 50.</p>
<p>MA.4.NS.9: Use place value understanding to round multi-digit whole numbers to any given place value.</p>	<p>MA.4.NS.9.a.1: Use place value to round 3-digit numbers to tens or hundreds.</p>

Computation

Indiana Academic Standards	Content Connectors
<p>MA.4.C.1: Add and subtract multi-digit whole numbers fluently using a standard algorithmic approach.</p>	<p>MA.4.C.1: Add and subtract multi-digit whole numbers with sums up to 500</p>
<p>MA.4.C.2: Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Describe the strategy and explain the reasoning.</p>	<p>MA.4.C.2: Multiply two-digit numbers by one-digit numbers</p>
<p>MA.4.C.3: Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Describe the strategy and explain the reasoning.</p>	<p>MA.4.C.3.a.1: Represent division by sorting up to 50 objects into groups without remainders.</p>
<p>MA.4.C.4: Multiply fluently within 100.</p>	<p>MA.4.C.4: Multiply single digit numbers fluently.</p>
<p>MA.4.C.5: Add and subtract fractions with common denominators. Decompose a fraction into a sum of fractions with common denominators. Understand addition and subtraction of fractions as combining and separating parts referring to the same whole.</p>	<p>MA.4.C.5.a.1: Using a model, represent the concept of adding and subtracting fractions (e.g., $\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$).</p>
<p>MA.4.C.6: Add and subtract mixed numbers with common denominators (e.g. by replacing each mixed number with an equivalent fraction and/or by using properties of operations and the relationship between addition and subtraction).</p>	<p>MA.4.C.6.a.1: Using a model, represent the concept of adding and subtracting mixed numbers with common denominators.</p>

MA.4.C.7: Show how to order in which two numbers are multiplied (commutative property) and how numbers are grouped in multiplication (associative property) will not change the product. Use these properties to show that numbers can be multiplied in any order. Understand and use the distributive property.

MA.4.C.7.a.1: Using models, demonstrate understanding of the commutative property using numbers less than 5.

Algebraic Thinking

Indiana Academic Standards	Content Connectors
MA.4.AT.1: Solve real-world problems involving addition and subtraction of multi-digit whole numbers (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).	MA.4.AT.1.a.1: Solve one- or two-step word problems requiring addition and/or subtraction with sums up to 500.
MA.4.AT.2: Recognize and apply the relationships between addition and multiplication, between subtraction and division, and the inverse relationship between multiplication and division to solve real-world and other mathematical problems.	MA.4.AT.2.a.1: Recognize and apply the relationship between addition and multiplication
MA.4.AT.3: Interpret a multiplication equation as a comparison (e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7, and 7 times as many as 5). Represent verbal statements of multiplicative comparisons as multiplication equations.	MA.4.AT.3.a.1: Represent verbal statements of multiplicative comparisons as multiplication equations.
MA.4.AT.4: Solve real-world problems with whole numbers involving multiplicative comparison (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem), distinguishing multiplicative comparison from additive comparison. [In grade 4, division problems should not include a remainder.]	MA.4.AT.4.a.1: Solve a real-world problem involving multiplicative comparison with product unknown.
MA.4.AT.5: Solve real-world problems involving addition and subtraction of fractions referring to the same whole and having common denominators (e.g., by using visual fraction models and equations to represent the problem).	MA.4.AT.5.a.1: Solve a real-world problem using a model to represent the concept of adding and subtracting fractions (e.g., $\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$).
MA.4.AT.6: Understand that an equation, such as $y = 3x + 5$, is a rule to describe a relationship between two variables and can be used to find a second number when a first number is given. Generate a number pattern that follows a given rule.	MA.4.AT.6.a.1: Understand that a variable in an equation is representing a number.

Geometry and Measurement

Indiana Academic Standards	Content Connectors
MA.4.G.1: Identify, describe, and draw parallelograms, rhombuses, and trapezoids using appropriate tools (e.g., ruler, straightedge and technology).	MA.4.G.1.a.1: Using models and representations, identify the following shapes: parallelograms, rhombuses, and trapezoids.
MA.4.G.2: Recognize and draw lines of symmetry in	MA.4.G.2.a.1: Recognize a line of symmetry in a

two-dimensional figures. Identify figures that have lines of symmetry.	figure.
MA.4.G.3: Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint.	MA.4.G.3.a.1: Recognize an angle in two-dimensional shape.
MA.4.G.4: Identify, describe, and draw rays, angles (right, acute, obtuse), and perpendicular and parallel lines using appropriate tools (e.g., ruler, straightedge and technology). Identify these in two-dimensional figures.	MA.4.G.4.a.1: Identify parallel and perpendicular lines.
MA.4.G.5: Classify triangles and quadrilaterals based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles (right, acute, obtuse).	MA.4.G.5.a.1: Classify shapes based on attributes (angles, parallel and perpendicular lines).
MA.4.G.6: Identify, describe, and draw parallelograms, rhombuses, and trapezoids using appropriate tools (e.g., ruler, straightedge and technology).	MA.4.G.1.a.1: Using models and representations, identify the following shapes: parallelograms, rhombuses, and trapezoids.
Indiana Academic Standards	Content Connectors
MA.4.M.1: Measure length to the nearest quarter-inch, eighth-inch, and millimeter.	MA.4.M.1.a.1: Measure length to nearest quarter-inch.
MA.4.M.2: Know relative sizes of measurement units within one system of units, including km, m, cm; kg, g; lb., oz.; l, ml; hr., min, sec. Express measurements in a larger unit in terms of a smaller unit within a single system of measurement. Record measurement equivalents in a two-column table.	MA.4.M.2.a.1: Identify the appropriate units of measurement for different purposes in a real life context (e.g., measure a wall using feet, not inches).
MA.4.M.3: Use the four operations (addition, subtraction, multiplication and division) to solve real-world problems involving distances, intervals of time, volumes, masses of objects, and money. Include addition and subtraction problems involving simple fractions and problems that require expressing measurements given in a larger unit in terms of a smaller unit.	MA.4.M.3.a.1: Solve real-world problems involving intervals of time to the half-hour.
	MA.4.M.3.a.2: Solve real-world problems involving money up to the value of five dollars.
MA.4.M.4: Apply the area and perimeter formulas for rectangles to solve real-world problems and other mathematical problems involving shapes. Recognize area as additive and find the area of complex shapes composed of rectangles by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts; apply this technique to solve real-world problems and other mathematical problems involving shapes.	MA.4.M.4.a.1: Solve real-world problems using area.
MA.4.M.5: Understand that an angle is measured with reference to a circle, with its center at the common endpoint of the rays, by considering the	MA.4.M.5.a.1: Find an angle in a circle.

fraction of the circular arc between the points where the two rays intersect the circle. Understand an angle that turns through $\frac{1}{360}$ of a circle is called a "one-degree angle," and can be used to measure other angles. Understand an angle that turns through n one-degree angles is said to have an angle measure of n degrees.

MA.4.M.6: Measure angles in whole-number degrees using appropriate tools. Sketch angles of specified measure.

MA.4.M.6.a.1: Select an appropriate tool for measuring angles.

Data Analysis

Indiana Academic Standards	Content Connectors
<p>MA.4.DA.1: Formulate questions that can be addressed with data. Use observations, surveys, and experiments to collect, represent, and interpret the data using tables (including frequency tables), line plots, and bar graphs.</p>	<p>MA.4.DA.1.a.1: Interpret data from a table or bar graph.</p>
<p>MA.4.DA.2: Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using data displayed in line plots.</p>	<p>MA.4.DA.2.a.1: Graph provided data on a line graph.</p>
<p>MA.4.DA.3: Interpret data displayed in a circle graph.</p>	<p>MA.4.DA.3.a.1: Interpret data displayed in a circle graph up to halves and fourths.</p>

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Grade 5

PROCESS STANDARDS FOR MATHEMATICS

The Process Standards demonstrate the ways in which students should develop conceptual understanding of mathematical content, and the ways in which students should synthesize and apply mathematical skills.

PROCESS STANDARDS FOR MATHEMATICS	
PS.1: Make sense of problems and persevere in solving them.	Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway, rather than simply jumping into a solution attempt. They consider analogous problems and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" and "Is my answer reasonable?" They understand the approaches of others to solving complex problems and identify correspondences between different approaches. Mathematically proficient students understand how mathematical ideas interconnect and build on one another to produce a coherent whole.
PS.2: Reason abstractly and quantitatively.	Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

PROCESS STANDARDS FOR MATHEMATICS

PS.3: Construct viable arguments and critique the reasoning of others.

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They analyze situations by breaking them into cases and recognize and use counterexamples. They organize their mathematical thinking, justify their conclusions and communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. They justify whether a given statement is true always, sometimes, or never. Mathematically proficient students participate and collaborate in a mathematics community. They listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

PS.4: Model with mathematics.

Mathematically proficient students apply the mathematics they know to solve problems arising in everyday life, society, and the workplace using a variety of appropriate strategies. They create and use a variety of representations to solve problems and to organize and communicate mathematical ideas. Mathematically proficient students apply what they know and are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

PS.5: Use appropriate tools strategically.

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Mathematically proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. Mathematically proficient students identify relevant external mathematical resources, such as digital content, and use them to pose or solve problems. They use technological tools to explore and deepen their understanding of concepts and to support the development of learning mathematics. They use technology to contribute to concept development, simulation, representation, reasoning, communication and problem solving.

PROCESS STANDARDS FOR MATHEMATICS

PS.6: Attend to precision.	Mathematically proficient students communicate precisely to others. They use clear definitions, including correct mathematical language, in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They express solutions clearly and logically by using the appropriate mathematical terms and notation. They specify units of measure and label axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently and check the validity of their results in the context of the problem. They express numerical answers with a degree of precision appropriate for the problem context.
PS.7: Look for and make use of structure.	Mathematically proficient students look closely to discern a pattern or structure. They step back for an overview and shift perspective. They recognize and use properties of operations and equality. They organize and classify geometric shapes based on their attributes. They see expressions, equations, and geometric figures as single objects or as being composed of several objects.
PS.8: Look for and express regularity in repeated reasoning.	Mathematically proficient students notice if calculations are repeated and look for general methods and shortcuts. They notice regularity in mathematical problems and their work to create a rule or formula. Mathematically proficient students maintain oversight of the process, while attending to the details as they solve a problem. They continually evaluate the reasonableness of their intermediate results.

DRAFT

MATHEMATICS: GRADE 5

The Mathematics standards for grade 5 are supplemented by the Process Standards for Mathematics.

The Mathematics standards for grade 5 are made up of 5 strands: Number Sense; Computation; Algebraic Thinking; Geometry; Measurement; and Data Analysis and Statistics. The skills listed in each strand indicate what students in grade 5 should know and be able to do in Mathematics.

NUMBER SENSE

Indiana Academic Standards	Content Connectors
MA.5.NS.1: Use a number line to compare and order fractions, mixed numbers, and decimals to thousandths. Write the results using $>$, $=$, and $<$ symbols.	MA.5.NS.1.a.1: Compare two fractions using symbols $<$, $>$, and $=$ symbols and vocabulary.
	MA.5.NS.1.a.2: Compare two decimals to the hundredths place with a value of less than 1 using symbols $<$, $>$, and $=$ symbols and vocabulary.
MA.5.NS.2: Explain different interpretations of fractions, including: as parts of a whole, parts of a set, and division of whole numbers by whole numbers.	MA.5.NS.2.a.1: Represent fractions as part of a set, whole, or division of whole numbers.
MA.5.NS.3: Recognize the relationship that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right, and inversely, a digit in one place represents 1/10 of what it represents in the place to its left.	MA.5.NS.3.a.1: Compare the value of a digit when it is represented in different place values of 2 three-digit numbers.
MA.5.NS.4: Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	
MA.5.NS.5: Use place value understanding to round decimal numbers up to thousandths to any given place value.	MA.5.NS.5.a.1: Round decimals to the nearest whole number.
MA.5.NS.6: Understand, interpret, and model percent's as part of a hundred (e.g. by using pictures, diagrams, and other visual models).	MA.5.NS.6.a.1: Use a model to represent percent as part of 100.

Computation

Indiana Academic Standards	Content Connectors
MA.5.C.1: Multiply multi-digit whole numbers fluently using a standard algorithmic approach.	MA.5.C.1.a.1: Multiply two-digit numbers by two-digit numbers.

Indiana Academic Standards	Content Connectors
MA.5.C.2: Find whole-number quotients and remainders with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Describe the strategy and explain the reasoning used.	MA.5.C.2.a.1: Divide multi-digit whole numbers with dividends up to 100 without remainders.
MA.5.C.3: Compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.	
MA.5.C.4: Add and subtract fractions with unlike denominators, including mixed numbers.	MA.5.C.4.a.1: Add and subtract fractions with unlike denominators, limiting denominators to halves, fourths, fifths, and tenths.
MA.5.C.5: Use visual fraction models and numbers to multiply a fraction by a fraction or a whole number.	MA.5.C.5.a.1: Use models to multiply a fraction by a whole number.
MA.5.C.6: Explain why multiplying a positive number by a fraction greater than 1 results in a product greater than the given number. Explain why multiplying a positive number by a fraction less than 1 results in a product smaller than the given number. Relate the principle of fraction equivalence, $a/b = (n \times a)/(n \times b)$, to the effect of multiplying a/b by 1.	MA.5.C.6.a.1: Determine whether the product will increase or decrease based on the multiplier.
MA.5.C.7: Use visual fraction models and numbers to divide a unit fraction by a non-zero whole number and to divide a whole number by a unit fraction.	MA.5.C.7.a.1: Use models to divide whole numbers by one half to solve for total number of parts.
MA.5.C.8: Add, subtract, multiply, and divide decimals to hundredths, using models or drawings and strategies based on place value or the properties of operations. Describe the strategy and explain the reasoning.	MA.5.C.8.a.1: Solve one-step problems using decimals.
MA.5.C.9: Evaluate expressions with parentheses or brackets involving whole numbers using the commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property.	MA.5.C.9.a.1: Evaluate an expression with one set of parentheses

Algebraic Thinking

Indiana Academic Standards	Content Connectors
MA.5.AT.1: Solve real-world problems involving multiplication and division of whole numbers (e.g. by using equations to represent the problem). In division problems that involve a remainder, explain how the remainder affects the solution to the problem.	MA.5.AT.1.a.1: Solve problems or word problems using up to 2-digit multiplication or 3-digit dividend with no remainder.
MA.5.AT.2: Solve real-world problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators (e.g., by using visual fraction models and equations to	MA.5.AT.2.a.1: Solve word problems involving the addition and subtraction of fractions with unlike denominators of halves, fourths, fifths, tenths.

Indiana Academic Standards	Content Connectors
represent the problem). Use benchmark fractions and number sense of fractions to estimate mentally and assess whether the answer is reasonable.	
MA.5.AT.3: Solve real-world problems involving multiplication of fractions, including mixed numbers (e.g., by using visual fraction models and equations to represent the problem).	MA.5.AT.3.a.1: Solve real-world problems involving multiplication of a fraction and a whole number.
MA.5.AT.4: Solve real-world problems involving division of unit fractions by non-zero whole numbers, and division of whole numbers by unit fractions (e.g., by using visual fraction models and equations to represent the problem).	MA.5.AT.4.a.1: Solve real-world problems involving the division of a whole number by one half to find the total parts.
MA.5.AT.5: Solve real-world problems involving addition, subtraction, multiplication, and division with decimals to hundredths, including problems that involve money in decimal notation (e.g. by using equations to represent the problem).	MA.5.AT.5.a.1: Solve one step real-world problems involving addition, subtraction, multiplication, and division with decimals to the hundredths place.
MA.5.AT.6: Graph points with whole number coordinates on a coordinate plane. Explain how the coordinates relate the point as the distance from the origin on each axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).	MA.5.AT.6.a.1: Locate points on a graph and identify x and y axis.
MA.5.AT.7: Represent real-world problems and equations by graphing ordered pairs in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	MA.5.AT.7.a.1: Graph ordered pairs in the first quadrant of coordinate plane.
MA.5.AT.8: Define and use up to two variables to write linear expressions that arise from real-world problems, and evaluate them for given values.	MA.5.AT.8.a.1: Given a real-world problem, evaluate the expressions for the specific values of up to two variables.

Geometry and Measurement

Indiana Academic Standards	Content Connectors
MA.5.G.1: Identify, describe, and draw triangles (right, acute, obtuse) and circles using appropriate tools (e.g., ruler or straightedge, compass and technology). Understand the relationship between radius and diameter.	MA.5.G.1.a.1: Categorize angles as right, acute, or obtuse.
	MA.5.G.1.a.2: Identify the diameter and radius of a circle.
MA.5.G.2: Identify and classify polygons including quadrilaterals, pentagons, hexagons, and triangles (equilateral, isosceles, scalene, right, acute and obtuse) based on angle measures and sides. Classify polygons in a hierarchy based on properties.	MA.5.G.2.a.1: Recognize properties of simple plane figures by counting the number of sides.
	MA.5.G.2.a.2: Distinguish plane figures by the name of the shape and number of sides.
MA.5.M.1: Convert among different-sized standard measurement units within a given measurement	MA.5.M.1.a.1: Convert measurements of time (days in a week, hours in a day, months in a year, minutes

Indiana Academic Standards	Content Connectors
system, and use these conversions in solving multi-step real-world problems.	in an hour, seconds in a minute). MA.5.M.1.a.2: Solve problems involving when finding time lapse.
MA.5.M.2: Find the area of a rectangle with fractional side lengths by modeling with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	MA.5.M.2.a.1: Multiply whole numbers to find the area of a rectangle.
MA.5.M.3: Develop and use formulas for the area of triangles, parallelograms and trapezoids. Solve real-world and other mathematical problems that involve perimeter and area of triangles, parallelograms and trapezoids, using appropriate units for measures.	MA.5.M.3.a.1: Provided the formula, students will insert the correct numbers into the correct location of the formula.
MA.5.M.4: Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths or multiplying the height by the area of the base.	MA.5.M.4.a.1: Model volume by counting the number of cubic units that fit into a rectangular prism.
MA.5.M.5: Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for right rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths to solve real-world problems and other mathematical problems involving shapes.	MA.5.M.5.a.1: Provided the formula, students will insert the correct numbers into the correct location of the formula.
MA.5.M.6: Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real-world problems and other mathematical problems.	MA.5.M.6.a.1: Solve completed volume formula.

Data Analysis and Statistics

Indiana Academic Standards	Content Connectors
MA.5.DS.1: Formulate questions that can be addressed with data and make predictions about the data. Use observations, surveys, and experiments to collect, represent, and interpret the data using tables (including frequency tables), line plots, bar graphs, and line graphs. Recognize the differences in representing categorical and numerical data.	MA.5.DS.1.a.1: Use data (from a bar graph) to determine questions that could be answered with the graph, or answer a simple question about the graph (e.g., average height among 3 classrooms, # of boys and girls).
MA.5.DS.2: Understand and use measures of center (mean and median) and frequency (mode) to describe a data set.	MA.5.DS.2.a.1: Use a completed line plot to find mode and median.

Grade 6

PROCESS STANDARDS FOR MATHEMATICS

The Process Standards demonstrate the ways in which students should develop conceptual understanding of mathematical content, and the ways in which students should synthesize and apply mathematical skills.

PROCESS STANDARDS FOR MATHEMATICS	
PS.1: Make sense of problems and persevere in solving them.	Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway, rather than simply jumping into a solution attempt. They consider analogous problems and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" and "Is my answer reasonable?" They understand the approaches of others to solving complex problems and identify correspondences between different approaches. Mathematically proficient students understand how mathematical ideas interconnect and build on one another to produce a coherent whole.
PS.2: Reason abstractly and quantitatively.	Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.
PS.3: Construct viable arguments and critique the reasoning of others.	Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They analyze situations by breaking them into cases and recognize and use counterexamples. They organize their mathematical thinking, justify their conclusions and communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. They justify whether a given statement is true always, sometimes, or never. Mathematically proficient students participate and collaborate in a mathematics community. They listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

PROCESS STANDARDS FOR MATHEMATICS

<p>PS.4: Model with mathematics.</p>	<p>Mathematically proficient students apply the mathematics they know to solve problems arising in everyday life, society, and the workplace using a variety of appropriate strategies. They create and use a variety of representations to solve problems and to organize and communicate mathematical ideas. Mathematically proficient students apply what they know and are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.</p>
<p>PS.5: Use appropriate tools strategically.</p>	<p>Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Mathematically proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. Mathematically proficient students identify relevant external mathematical resources, such as digital content, and use them to pose or solve problems. They use technological tools to explore and deepen their understanding of concepts and to support the development of learning mathematics. They use technology to contribute to concept development, simulation, representation, reasoning, communication and problem solving.</p>
<p>PS.6: Attend to precision.</p>	<p>Mathematically proficient students communicate precisely to others. They use clear definitions, including correct mathematical language, in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They express solutions clearly and logically by using the appropriate mathematical terms and notation. They specify units of measure and label axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently and check the validity of their results in the context of the problem. They express numerical answers with a degree of precision appropriate for the problem context.</p>
<p>PS.7: Look for and make use of structure.</p>	<p>Mathematically proficient students look closely to discern a pattern or structure. They step back for an overview and shift perspective. They recognize and use properties of operations and equality. They organize and classify geometric shapes based on their attributes. They see expressions, equations, and geometric figures as single objects or as being composed of several objects.</p>
<p>PS.8: Look for and express regularity in repeated reasoning.</p>	<p>Mathematically proficient students notice if calculations are repeated and look for general methods and shortcuts. They notice regularity in mathematical problems and their work to create a rule or formula. Mathematically proficient students maintain oversight of the process, while attending to the details as they solve a problem. They continually evaluate the reasonableness of their intermediate results.</p>

MATHEMATICS: GRADE 6

The Mathematics standards for grade 6 are supplemented by the Process Standards for Mathematics.

The Mathematics standards for grade 6 are made up of 5 strands: Number Sense; Computation; Algebra and Functions; Geometry and Measurement; and Data Analysis and Statistics. The skills listed in each strand indicate what students in grade 6 should know and be able to do in Mathematics.

NUMBER SENSE

Indiana Academic Standards	Content Connectors
MA.6.NS.1: Understand that positive and negative numbers are used to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge). Use positive and negative numbers to represent and compare quantities in real-world contexts, explaining the meaning of 0 in each situation.	MA.6.NS.1.a.1: Understand the difference between a positive or negative number.
MA.6.NS.2: Understand the integer number system. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself (e.g., $-(-3) = 3$), and that 0 is its own opposite.	MA.6.NS.2.a.1: Locate positive and negative numbers on a number line.
MA.6.NS.3: Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts.	MA.6.NS.3.a.1: Plot positive and negative integers on a number line.
	MA.6.NS.3.a.2: Compare and order a given set of integers.
MA.6.NS.4: Understand that the absolute value of a number is the distance from zero on a number line. Find the absolute value of real numbers and know that the distance between two numbers on the number line is the absolute value of their difference. Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.	MA.6.NS.4.a.1: Find the absolute value of a number using the distance from zero on a number line.
MA.6.NS.5: Know commonly used fractions (halves, thirds, fourths, fifths, eighths, tenths) and their decimal and percent equivalents. Convert between any two representations (fractions, decimals, percent's) of positive rational numbers without the use of a calculator.	MA.6.NS.5.a.1: Identify the decimal and percent equivalents for halves, fourths, fifths, and tenths.
MA.6.NS.6: Identify and explain prime and composite numbers.	MA.6.NS.6.a.1: Identify a prime and composite number.

Indiana Academic Standards	Content Connectors
MA.6.NS.7: Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers from 1 to 100, with a common factor as a multiple of a sum of two whole numbers with no common factor.	MA.6.NS.7.a.1: Find the least common multiple.
	MA.6.NS.7.a.2: Find the greatest common factor of two whole numbers.
MA.6.NS.8: Interpret, model, and use ratios to show the relative sizes of two quantities. Describe how a ratio shows the relationship between two quantities. Use the following notations: a/b , a to b , $a:b$.	MA.6.NS.8.a.1: Describe the ratio relationship between two quantities.
MA.6.NS.9: Understand the concept of a unit rate and use terms related to rate in the context of a ratio relationship.	MA.6.NS.9.a.1: Understand the concept of a unit rate.
MA.6.NS.10: Use reasoning involving rates and ratios to model real-world and other mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations).	MA.6.NS.10.a.1: Solve one-step real-world problems involving unit rates with ratios of whole numbers when given the unit rate (e.g., 3 inches of snow falls per hour, how much in 6 hours).

Computation

Indiana Academic Standards	Content Connectors
MA.6.C.1: Divide multi-digit whole numbers fluently using a standard algorithmic approach.	MA.6.C.1.a.1: Divide multi-digit whole numbers.
MA.6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach.	MA.6.C.2.a.1: Solve one-step addition or subtraction problems with decimals.
	MA.6.C.2.a.2: Solve one-step addition or subtraction problems with fractions.
MA.6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations.	MA.6.C.3.a.1: Solve one-step real-world addition or subtraction problems with decimals or fractions.
MA.6.C.4: Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations.	MA.6.C.4.a.1: Solve one-step division problems with fractions.
MA.6.C.5: Evaluate positive rational numbers with whole number exponents.	MA.6.C.5.a.1: Demonstrate what an exponent represents (e.g., $8^3 = 8 \times 8 \times 8$) and evaluate.

Indiana Academic Standards	Content Connectors
<p>MA.6.C.6: Apply order of operations and properties of operations (identity, inverse, commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property) to evaluate numerical expressions with nonnegative rational numbers, including those using grouping symbols, such as parentheses, and involving whole number exponents. Justify each step in the process.</p>	<p>MA.6.C.6.a.1: Apply the order of operations.</p>

Algebra and Functions

Indiana Academic Standards	Content Connectors
<p>MA.6.AF.1: Evaluate expressions for specific values of their variables, including expressions with whole-number exponents and those that arise from formulas used in real-world problems.</p>	<p>MA.6.AF.1.a.1: Given a real-world problem, evaluate the expressions for specific values of their variables.</p>
<p>MA.6.AF.2: Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions and to justify whether two linear expressions are equivalent when the two expressions name the same number regardless of which value is substituted into them.</p>	<p>MA.6.AF.2.a.1: Use properties of operations to produce equivalent expressions.</p>
<p>MA.6.AF.3: Define and use multiple variables when writing expressions to represent real-world and other mathematical problems, and evaluate them for given values.</p>	<p>MA.6.AF.3.a.1: Write and evaluate variable expressions.</p>
<p>MA.6.AF.4: Understand that solving an equation or inequality is the process of answering the following question: Which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.</p>	<p>MA.6.AF.4.a.1: Use substitution to determine validity of an equation or inequality.</p>
<p>MA.6.AF.5: Solve equations of the form $x + p = q$, $x - p = q$, $px = q$, and $x/p = q$ fluently for cases in which p, q and x are all nonnegative rational numbers. Represent real world problems using equations of these forms and solve such problems.</p>	<p>MA.6.AF.5.a.1: Solve real-world one-step linear equations.</p>
<p>MA.6.AF.6: Write an inequality of the form $x > c$, $x \geq c$, $x < c$, or $x \leq c$, where c is a rational number, to represent a constraint or condition in a real-world or other mathematical problem. Recognize inequalities have infinitely many solutions and represent solutions on a number line diagram.</p>	<p>MA.6.AF.6.a.1: Given a real-world problem, write an inequality.</p>

Indiana Academic Standards	Content Connectors
MA.6.AF.7: Understand that signs of numbers in ordered pairs indicate the quadrant containing the point; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. Graph points with rational number coordinates on a coordinate plane.	MA.6.AF.7.a.1: Graph a point on a coordinate plane.
MA.6.AF.8: Solve real-world and other mathematical problems by graphing points with rational number coordinates on a coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	MA.6.AF.8.a.1: Given a coordinate plane, plot and find the distance between two points with the same first coordinate or the same second coordinate.
MA.6.AF.9: Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane.	MA.6.AF.9.a.1: Analyze a table to find missing values of ordered pairs.
	MA.6.AF.9.a.2: Plot pairs of values from a table onto a coordinate plane.
MA.6.AF.10: Use variables to represent two quantities in a proportional relationship in a real-world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.	MA.6.AF.10.a.1: Given a real-world problem representing a proportional relationship, analyze the relationships between the dependent and independent variables.

Geometry and Measurement

Indiana Academic Standards	Content Connectors
MA.6.GM.1: Convert between measurement systems (English to metric and metric to English) given conversion factors, and use these conversions in solving real-world problems.	MA.6.GM.1.a.1: Convert between English and metric measurement systems.
MA.6.GM.2: Know that the sum of the interior angles of any triangle is 180° and that the sum of the interior angles of any quadrilateral is 360° . Use this information to solve real-world and mathematical problems.	MA.6.GM.2.a.1: Given a real-world situation, use the sum of the interior angles of a triangle which totals 180 degrees.
MA.6.GM.3: Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate; apply these techniques to solve real-world and other	MA.6.GM.3.a.1: Given a polygon in a coordinate plane, find the length of each side.

Indiana Academic Standards	Content Connectors
mathematical problems.	
MA.6.GM.4: Find the area of complex shapes composed of polygons by composing or decomposing into simple shapes; apply this technique to solve real-world and other mathematical problems.	MA.6.GM.4.a.1: Find area of quadrilaterals.
MA.6.GM.5: Find the volume of a right rectangular prism with fractional edge lengths using unit cubes of the appropriate unit fraction edge lengths (e.g., using technology or concrete materials), and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms with fractional edge lengths to solve real-world and other mathematical problems.	MA.6.GM.5.a.1: Find the volume of right rectangular prisms.
	MA.6.GM.5.a.2: Understand the concept of volume and how it fills space.
MA.6.GM.6: Construct right prisms from nets and use the nets to compute the surface area of prisms; apply this technique to solve real-world and other mathematical problems.	MA.6.GM.6.a.1: Identify the net of a three-dimensional shape.

Data Analysis Statistics

Indiana Academic Standards	Content Connectors
MA.6.DS.1: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for the variability in the answers. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.	MA.6.DS.1.a.1: Identify statistical questions and the data that corresponds.
MA.6.DS.2: Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots.	MA.6.DS.2.a.1: Name different graphical representations of data.
MA.6.DS.3: Formulate statistical questions; collect and organize the data (e.g., using technology); display and interpret the data with graphical representations (e.g., using technology).	MA.6.DS.3.a.1: Collect and graph data using bar graphs and line plots.
MA.6.DS.4: Summarize numerical data sets in relation to their context in multiple ways, such as: report the number of observations; describe the nature of the attribute under investigation, including how it was measured and its units of measurement; determine quantitative measures of center (mean and/or median) and spread (range and interquartile range), as well as describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered; and	MA.6.DS.4.a.1: Select a statement that matches mean, mode, and spread of data for 1 measure of central tendency for a given data set.

Indiana Academic Standards	Content Connectors
relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered.	

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Grade 7

PROCESS STANDARDS FOR MATHEMATICS

The Process Standards demonstrate the ways in which students should develop conceptual understanding of mathematical content, and the ways in which students should synthesize and apply mathematical skills.

PROCESS STANDARDS FOR MATHEMATICS	
PS.1: Make sense of problems and persevere in solving them.	Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway, rather than simply jumping into a solution attempt. They consider analogous problems and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” and “Is my answer reasonable?” They understand the approaches of others to solving complex problems and identify correspondences between different approaches. Mathematically proficient students understand how mathematical ideas interconnect and build on one another to produce a coherent whole.
PS.2: Reason abstractly and quantitatively.	Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.
PS.3: Construct viable arguments and critique the reasoning of others.	Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They analyze situations by breaking them into cases and recognize and use counterexamples. They organize their mathematical thinking, justify their conclusions and communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. They justify whether a given statement is true always, sometimes, or never. Mathematically proficient students participate and collaborate in a mathematics community. They listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

PROCESS STANDARDS FOR MATHEMATICS

PS.4: Model with mathematics.	Mathematically proficient students apply the mathematics they know to solve problems arising in everyday life, society, and the workplace using a variety of appropriate strategies. They create and use a variety of representations to solve problems and to organize and communicate mathematical ideas. Mathematically proficient students apply what they know and are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.
PS.5: Use appropriate tools strategically.	Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Mathematically proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. Mathematically proficient students identify relevant external mathematical resources, such as digital content, and use them to pose or solve problems. They use technological tools to explore and deepen their understanding of concepts and to support the development of learning mathematics. They use technology to contribute to concept development, simulation, representation, reasoning, communication and problem solving.
PS.6: Attend to precision.	Mathematically proficient students communicate precisely to others. They use clear definitions, including correct mathematical language, in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They express solutions clearly and logically by using the appropriate mathematical terms and notation. They specify units of measure and label axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently and check the validity of their results in the context of the problem. They express numerical answers with a degree of precision appropriate for the problem context.
PS.7: Look for and make use of structure.	Mathematically proficient students look closely to discern a pattern or structure. They step back for an overview and shift perspective. They recognize and use properties of operations and equality. They organize and classify geometric shapes based on their attributes. They see expressions, equations, and geometric figures as single objects or as being composed of several objects.
PS.8: Look for and express regularity in repeated reasoning.	Mathematically proficient students notice if calculations are repeated and look for general methods and shortcuts. They notice regularity in mathematical problems and their work to create a rule or formula. Mathematically proficient students maintain oversight of the process, while attending to the details as they solve a problem. They continually evaluate the reasonableness of their intermediate results.

MATHEMATICS: GRADE 7

The Mathematics standards for grade 7 are supplemented by the Process Standards for Mathematics.

The Mathematics standards for grade 7 are made up of 5 strands: Number Sense; Computation; Algebra and Functions; Geometry and Measurement; and Data Analysis, Statistics, and Probability. The skills listed in each strand indicate what students in grade 7 should know and be able to do in Mathematics.

NUMBER SENSE

Indiana Academic Standards	Content Connectors
MA.7.NS.1: Find the prime factorization of whole numbers and write the results using exponents.	MA.7.NS.1.a.1: Determine the prime factorization of whole numbers.
MA.7.NS.2: Understand the inverse relationship between squaring and finding the square root of a perfect square integer. Find square roots of perfect square integers.	MA.7.NS.2.a.1: Identify perfect squares.
MA.7.NS.3: Know there are rational and irrational numbers. Identify, compare, and order rational and common irrational numbers ($\sqrt{2}$, $\sqrt{3}$, $\sqrt{5}$, π) and plot them on a number line.	MA.7.NS.3.a.1: Understand the definition of rational and irrational numbers.
	MA.7.NS.3.a.2: Order and compare rational and irrational numbers using a number line.

Computation

Indiana Academic Standards	Content Connectors
MA.7.C.1: Understand $p + q$ as the number located a distance $ q $ from p , in the positive or negative direction, depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.	MA.7.C.1.a.1: Add a positive and negative integer.
MA.7.C.2: Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.	MA.7.C.2.a.1: Subtract positive and negative integers.
	MA.7.C.2.a.2: Find the distance between two rational numbers on a number line using absolute value.
MA.7.C.3: Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers.	MA.7.C.3.a.1: Solve multiplication problems with positive and negative integers.
MA.7.C.4: Understand that integers can be divided, provided that the divisor is not zero, and that every quotient of integers (with non-zero divisor) is a rational number. Understand that if p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$.	MA.7.C.4.a.1: Solve division problems with positive and negative integers.

Indiana Academic Standards	Content Connectors
MA.7.C.5: Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.	MA.7.C.5.a.1: Determine unit rates given a ratio of lengths, areas, and other quantities measured in like units.
MA.7.C.6: Use proportional relationships to solve ratio and percent problems with multiple operations, such as the following: simple interest, tax, markups, markdowns, gratuities, commissions, fees, conversions within and across measurement systems, percent increase and decrease, and percent error.	MA.7.C.6.a.1: Use proportions to solve ratio problems.
	MA.7.C.6.a.2: Solve word problems involving ratios.
	MA.7.C.6.a.3: Use proportional relationships to solve multi-step percent problems.
MA.7.C.7: Compute with rational numbers fluently using a standard algorithmic approach.	MA.7.C.7.a.1: Compute with rational numbers.
MA.7.C.8: Solve real-world problems with rational numbers by using one or two operations.	MA.7.C.8.a.1: Using one operation, solve real-world problems involving rational numbers.

Algebra and Functions

Indiana Academic Standards	Content Connectors
MA.7.AF.1: Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions, including situations that involve factoring (e.g., given $2x - 10$, create an equivalent expression $2(x - 5)$). Justify each step in the process.	MA.7.AF.1.a.1: Use properties of operations to produce equivalent linear expressions.
MA.7.AF.2: Solve equations of the form $px + q = r$ and $p(x + q) = r$ fluently, where p , q , and r are specific rational numbers. Represent real-world problems using equations of these forms and solve such problems.	MA.7.AF.2.a.1: Solve equations with up to two variables based on real-world problems.
	MA.7.AF.2.a.2: Use variables to represent quantities in a real-world or mathematical problem to solve linear equations.
MA.7.AF.3: Solve inequalities of the form $px + q (> \text{ or } \geq) r$ or $px + q (< \text{ or } \leq) r$, where p , q , and r are specific rational numbers. Represent real-world problems using inequalities of these forms and solve such problems. Graph the solution set of the inequality and interpret it in the context of the problem.	MA.7.AF.3.a.1: Solve inequalities with up to two variables based on real-world problems.
	MA.7.AF.3.a.2: Use variables to represent quantities in a real-world or mathematical problem to solve linear inequalities.
	MA.7.AF.3.a.3: Determine the graph of an inequality.
MA.7.AF.4: Define slope as vertical change for each unit of horizontal change and recognize that a constant rate of change or constant slope describes a linear function. Identify and describe situations with constant or varying rates of change.	MA.7.AF.4.a.1: Relate slope to rate of change between two variables.
	MA.7.AF.4.a.2: Using real-world examples, recognize the graph that shows the correct slope between two variables.

Indiana Academic Standards	Content Connectors
MA.7.AF.5: Graph a line given its slope and a point on the line. Find the slope of a line given its graph.	MA.7.AF.5.a.1: Graph a line using slope and a point on the line.
	MA.7.AF.5.a.2: Understand how to calculate the slope of a line.
MA.7.AF.6: Decide whether two quantities are in a proportional relationship (e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin).	MA.7.AF.6.a.1: Identify if the relationship is proportional between two quantities in a table.
	MA.7.AF.6.a.2: Determine if two quantities are in a proportional relationship using points graphed on a coordinate plane.
MA.7.AF.7: Identify the unit rate or constant of proportionality in tables, graphs, equations, and verbal descriptions of proportional relationships.	MA.7.AF.7.a.1: Given a table or a graph of a line, identify the unit rate.
MA.7.AF.8: Explain what the coordinates of a point on the graph of a proportional relationship mean in terms of the situation, with special attention to the points (0, 0) and (1,r), where r is the unit rate.	MA.7.AF.8.a.1: Given a proportional relationship, explain the meaning of the coordinates on the graph.
MA.7.AF.9: Identify real-world and other mathematical situations that involve proportional relationships. Write equations and draw graphs to represent proportional relationships and recognize that these situations are described by a linear function in the form $y = mx$, where the unit rate, m, is the slope of the line.	MA.7.AF.9.a.1: Represent proportional relationships as an equation and as a graph.

Geometry and Measurement

Indiana Academic Standards	Content Connectors
MA.7.GM.2: Identify and describe similarity relationships of polygons including the angle-angle criterion for similar triangles, and solve problems involving similarity.	MA.7.GM.2.a.1: Identify similar polygons.
MA.7.GM.3: Solve real-world and other mathematical problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing. Create a scale drawing by using proportional reasoning.	MA.7.GM.3.a.1: When given a real-world situation, determine the appropriate scale.
MA.7.GM.4: Solve real-world and other mathematical problems that involve vertical, adjacent, complementary, and supplementary angles.	MA.7.GM.4.a.1: Identify various angles in a real-world situation.
MA.7.GM.5: Understand the formulas for area and circumference of a circle and use them to solve real-world and other mathematical problems; give an informal derivation of the relationship between	MA.7.GM.5.a.1: Understand the formulas to calculate the area and circumference of a circle.

Indiana Academic Standards	Content Connectors
circumference and area of a circle.	
MA.7.GM.6: Solve real-world and other mathematical problems involving volume of cylinders and three-dimensional objects composed of right rectangular prisms.	MA.7.GM.6.a.1: Given a model and an equation with all variables given, find the volume of a cylinder.
MA.7.GM.7: Construct nets for right rectangular prisms and cylinders and use the nets to compute the surface area; apply this technique to solve real-world and other mathematical problems.	MA.7.GM.7.a.1: Understand surface area and identify it in a real-world situation.

Data Analysis, Statistics and Probability

Indiana Academic Standards	Content Connectors
MA.7.DSP.1: Understand that statistics can be used to gain information about a population by examining a sample of the population and generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.	MA.7.DSP.1.a.1: Determine sample size to answer a given question.
MA.7.DSP.2: Use data from a random sample to draw inferences about a population. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.	MA.7.DSP.2.a.1: Interpret data to draw conclusions.
MA.7.DSP.3: Find, use, and interpret measures of center (mean and median) and measures of spread (range, interquartile range, and mean absolute deviation) for numerical data from random samples to draw comparative inferences about two populations.	MA.7.DSP.3.a.1: Identify the range, median, mean, or mode of a given data set.
	MA.7.DSP.3.a.2: Compare two similar populations/models to draw a conclusion.
	MA.7.DSP.3.a.3: Make or select an appropriate statement based on two unequal data sets using measure of central tendency and shape.
MA.7.DSP.4: Make observations about the degree of visual overlap of two numerical data distributions represented in line plots or box plots. Describe how data, particularly outliers, added to a data set may affect the mean and/or median.	MA.7.DSP.4.a.1: Make or select a statement to compare the distribution of two data sets.
MA.7.DSP.5: Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Understand that a probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. Understand that a probability of 1 indicates an event certain to occur and a probability of 0 indicates an event	MA.7.DSP.5.a.1: Describe the probability of events as being certain or impossible.

Indiana Academic Standards	Content Connectors
impossible to occur.	
MA.7.DSP.6: Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its relative frequency from a large sample.	MA.7.DSP.6.a.1: Make a prediction regarding the probability of an event occurring; conduct simple probability experiments.
MA.7.DSP.7: Develop probability models that include the sample space and probabilities of outcomes to represent simple events with equally likely outcomes. Predict the approximate relative frequency of the event based on the model. Compare probabilities from the model to observed frequencies; evaluate the level of agreement and explain possible sources of discrepancy.	MA.7.DSP.7.a.1: Compare actual results of simple experiments with theoretical probabilities.

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Grade 8

PROCESS STANDARDS FOR MATHEMATICS

The Process Standards demonstrate the ways in which students should develop conceptual understanding of mathematical content, and the ways in which students should synthesize and apply mathematical skills.

PROCESS STANDARDS FOR MATHEMATICS	
PS.1: Make sense of problems and persevere in solving them.	Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway, rather than simply jumping into a solution attempt. They consider analogous problems and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” and “Is my answer reasonable?” They understand the approaches of others to solving complex problems and identify correspondences between different approaches. Mathematically proficient students understand how mathematical ideas interconnect and build on one another to produce a coherent whole.
PS.2: Reason abstractly and quantitatively.	Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.
PS.3: Construct viable arguments and critique the reasoning of others.	Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They analyze situations by breaking them into cases and recognize and use counterexamples. They organize their mathematical thinking, justify their conclusions and communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. They justify whether a given statement is true always, sometimes, or never. Mathematically proficient students participate and collaborate in a mathematics community. They listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

PROCESS STANDARDS FOR MATHEMATICS

<p>PS.4: Model with mathematics.</p>	<p>Mathematically proficient students apply the mathematics they know to solve problems arising in everyday life, society, and the workplace using a variety of appropriate strategies. They create and use a variety of representations to solve problems and to organize and communicate mathematical ideas. Mathematically proficient students apply what they know and are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.</p>
<p>PS.5: Use appropriate tools strategically.</p>	<p>Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Mathematically proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. Mathematically proficient students identify relevant external mathematical resources, such as digital content, and use them to pose or solve problems. They use technological tools to explore and deepen their understanding of concepts and to support the development of learning mathematics. They use technology to contribute to concept development, simulation, representation, reasoning, communication and problem solving.</p>
<p>PS.6: Attend to precision.</p>	<p>Mathematically proficient students communicate precisely to others. They use clear definitions, including correct mathematical language, in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They express solutions clearly and logically by using the appropriate mathematical terms and notation. They specify units of measure and label axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently and check the validity of their results in the context of the problem. They express numerical answers with a degree of precision appropriate for the problem context.</p>
<p>PS.7: Look for and make use of structure.</p>	<p>Mathematically proficient students look closely to discern a pattern or structure. They step back for an overview and shift perspective. They recognize and use properties of operations and equality. They organize and classify geometric shapes based on their attributes. They see expressions, equations, and geometric figures as single objects or as being composed of several objects.</p>
<p>PS.8: Look for and express regularity in repeated reasoning.</p>	<p>Mathematically proficient students notice if calculations are repeated and look for general methods and shortcuts. They notice regularity in mathematical problems and their work to create a rule or formula. Mathematically proficient students maintain oversight of the process, while attending to the details as they solve a problem. They continually evaluate the reasonableness of their intermediate results.</p>

MATHEMATICS: GRADE 8

The Mathematics standards for grade 8 are supplemented by the Process Standards for Mathematics.

The Mathematics standards for grade 8 are made up of 5 strands: Number Sense; Computation; Algebra and Functions; Geometry and Measurement; and Data Analysis, Statistics, and Probability. The skills listed in each strand indicate what students in grade 8 should know and be able to do in Mathematics.

NUMBER SENSE

Indiana Academic Standards	Content Connectors
MA.8.NS.1: Give examples of rational and irrational numbers and explain the difference between them. Understand that every number has a decimal expansion; for rational numbers, show that the decimal expansion terminates or repeats, and convert a decimal expansion that repeats into a rational number.	MA.8.NS.1.a.1: Identify rational and irrational numbers.
	MA.8.NS.1.a.2: Round irrational numbers to the hundredths place.
MA.8.NS.2: Use rational approximations of irrational numbers to compare the size of irrational numbers, plot them approximately on a number line, and estimate the value of expressions involving irrational numbers.	MA.8.NS.2.a.1: Use the estimate of irrational numbers to locate them on a number line.
MA.8.NS.3: Given a numeric expression with common rational number bases and integer exponents, apply the properties of exponents to generate equivalent expressions.	MA.8.NS.3.a.1: Use properties of integer exponents to produce equivalent expressions.
MA.8.NS.4: Use square root symbols to represent solutions to equations of the form $x^2 = p$, where p is a positive rational number.	MA.8.NS.4.a.1: Solve equations using properties of square roots.

Computation

Indiana Academic Standards	Content Connectors
MA.8.C.1: Solve real-world problems with rational numbers by using multiple operations.	MA.8.C.1.a.1: Solve real-world problems with rational numbers by using two operations.
MA.8.C.2: Solve real-world and other mathematical problems involving numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Interpret scientific notation that has been generated by technology, such as a scientific calculator, graphing calculator, or excel spreadsheet.	MA.8.C.2.a.1: Perform operations with numbers expressed in scientific notation.

Algebra and Functions

Indiana Academic Standards	Content Connectors
MA.8.AF.1: Solve linear equations with rational number coefficients fluently, including equations	MA.8.AF.1.a.1: Solve linear equations with up to two variables.

Indiana Academic Standards	Content Connectors
<p>whose solutions require expanding expressions using the distributive property and collecting like terms. Represent real-world problems using linear equations and inequalities in one variable and solve such problems.</p>	
<p>MA.8.AF.2: Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by transforming a given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers).</p>	<p>MA.8.AF.2.a.1: Recognize when a linear equation has one solution, infinitely many solutions, or no solutions.</p>
<p>MA.8.AF.3: Understand that a function assigns to each x-value (independent variable) exactly one y-value (dependent variable), and that the graph of a function is the set of ordered pairs (x,y).</p>	<p>MA.8.AF.3.a.1: Distinguish between functions and non-functions in graphs, or tables.</p>
<p>MA.8.AF.4: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear, has a maximum or minimum value). Sketch a graph that exhibits the qualitative features of a function that has been verbally described.</p>	<p>MA.8.AF.4.a.1: Given multiple graphs, describe the defining features of a function.</p>
	<p>MA.8.AF.4.a.2: Given data, create or identify a graph to model the situation.</p>
	<p>MA.8.AF.4.a.3: Given a line graph of a situation, describe or select the relationship between two quantities.</p>
<p>MA.8.AF.5: Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. Describe similarities and differences between linear and nonlinear functions from tables, graphs, verbal descriptions, and equations.</p>	<p>MA.8.AF.5.a.1: Given multiple representations, describe a function as linear and not linear.</p>
<p>MA.8.AF.6: Construct a function to model a linear relationship between two quantities given a verbal description, table of values, or graph. Recognize in $y = mx + b$ that m is the slope (rate of change) and b is the y-intercept of the graph, and describe the meaning of each in the context of a problem.</p>	<p>MA.8.AF.6.a.1: Identify the rate of change (slope) and initial value (y-intercept) from graphs.</p>
<p>MA.8.AF.7: Compare properties of two linear functions given in different forms, such as a table of values, equation, verbal description, and graph (e.g., compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed).</p>	<p>MA.8.AF.7.a.1: Given a table or a graph, compare two linear functions to answer a question about rates.</p>
<p>MA.8.AF.8: Understand that solutions to a system of two linear equations correspond to points of intersection of their graphs because points of intersection satisfy both equations simultaneously.</p>	<p>MA.8.AF.8.a.1: Given a graph, identify the solution to a system of linear equations.</p>

Indiana Academic Standards	Content Connectors
Approximate the solution of a system of equations by graphing and interpreting the reasonableness of the approximation.	

Geometry and Measurement

Indiana Academic Standards	Content Connectors
MA.8.GM.1: Identify, define and describe attributes of three-dimensional geometric objects (right rectangular prisms, cylinders, cones, spheres, and pyramids). Explore the effects of slicing these objects using appropriate technology and describe the two-dimensional figure that results.	MA.8.GM.1.a.1: Identify and describe attributes of three-dimensional geometric objects.
MA.8.GM.2: Solve real-world and other mathematical problems involving volume of cones, spheres, and pyramids and surface area of spheres.	MA.8.GM.2.a.1: Apply the formula to find the volume of three-dimensional shapes (e.g., cubes, spheres, and cylinders).
MA.8.GM.3: Verify experimentally the properties of rotations, reflections, and translations, including: lines are mapped to lines, and line segments to line segments of the same length; angles are mapped to angles of the same measure; and parallel lines are mapped to parallel lines.	MA.8.GM.3.a.1: Recognize a rotation, reflection, or translation of a figure.
MA.8.GM.4: Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations. Describe a sequence that exhibits the congruence between two given congruent figures.	MA.8.GM.4.a.1: Describe a sequence of transformations between two congruent figures.
MA.8.GM.5: Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations. Describe a sequence that exhibits the similarity between two given similar figures.	MA.8.GM.5.a.1: Describe a sequence of transformations between two similar figures.
MA.8.GM.6: Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	MA.8.GM.6.a.1: Describe the effects of transformations on the coordinates of a figure.
MA.8.GM.7: Use inductive reasoning to explain the Pythagorean relationship.	MA.8.GM.7.a.1: Students will use a pattern to discover the relationship of the Pythagorean Theorem.
MA.8.GM.8: Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and other mathematical problems in two dimensions.	MA.8.GM.8.a.1: Apply the Pythagorean Theorem to determine lengths/distances in real-world situations.
	MA.8.GM.8.a.2: Find the hypotenuse of a two-dimensional right triangle (Pythagorean Theorem).
MA.8.GM.9: Apply the Pythagorean Theorem to find	MA.8.GM.9.a.1: Apply the Pythagorean Theorem to

Indiana Academic Standards	Content Connectors
the distance between two points in a coordinate plane.	determine lengths/distances on a coordinate plane.

Data Analysis, Statistics and Probability

Indiana Academic Standards	Content Connectors
MA.8.DSP.1: Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantitative variables. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	MA.8.DSP.1.a.1: Graph bivariate data using scatter plots and identify possible associations between the variables.
	MA.8.DSP.1.a.2: Using scatter plots, identify data points that appear to be outliers.
MA.8.DSP.2: Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and describe the model fit by judging the closeness of the data points to the line.	MA.8.DSP.2.a.1: Identify a linear association when analyzing bivariate data on a scatter plot.
MA.8.DSP.3: Write and use equations that model linear relationships to make predictions, including interpolation and extrapolation, in real-world situations involving bivariate measurement data; interpret the slope and y-intercept.	MA.8.DSP.3.a.1: Use the line of best fit to find a point that answers a question about the data.
MA.8.DSP.4: Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. Understand and use appropriate terminology to describe independent, dependent, complementary, and mutually exclusive events.	MA.8.DSP.4.a.1: Determine the probability of simple events.
MA.8.DSP.5: Represent sample spaces and find probabilities of compound events (independent and dependent) using methods, such as organized lists, tables, and tree diagrams.	MA.8.DSP.5.a.1: Determine the theoretical probability of multi-stage probability experiments (2 coins, 2 dice).
	MA.8.DSP.5.a.2: Collect data from multi-stage probability experiments (2 coins, 2 dice).
MA.8.DSP.6: For events with a large number of outcomes, understand the use of the multiplication counting principle. Develop the multiplication counting principle and apply it to situations with a large number of outcomes.	MA.8.DSP.6.a.1: Use the multiplication counting principle to determine the total number of outcomes.

Algebra

Indiana Academic Standards	Content Connectors
MA.AI.RNE.1: Understand the hierarchy and relationships of numbers and sets of numbers within the real number system.	MA.AI.RNE.1.a.1: Understand the definition of rational and irrational numbers.
MA.AI.RNE.2: Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.	
MA.AI.RNE.3: Rewrite and evaluate numeric expressions with positive rational exponents using the properties of exponents.	MA.AI.RNE.3.a.1: Use properties of integer exponents to produce equivalent expressions.
MA.AI.RNE.4: Simplify square roots of non-perfect square integers and algebraic monomials.	MA.AI.RNE.4.a.1: Solve equations using properties of square roots.
MA.AI.RNE.5: Simplify algebraic rational expressions, with numerators and denominators containing monomial bases with integer exponents, to equivalent forms.	MA.AI.RNE.5.a.1: Simplify numeric exponential expressions in rational form.
MA.AI.RNE.6: Factor common terms from polynomials and factor polynomials completely. Factor the difference of two squares, perfect square trinomials, and other quadratic expressions.	MA.AI.RNE.6.a.1: Simplify expressions that include exponents. Rewrite expressions that include rational exponents.
MA.AI.RNE.7: Understand polynomials are closed under the operations of addition, subtraction, and multiplication with integers; add, subtract, and multiply polynomials and divide polynomial by monomials.	MA.AI.RNE.7.a.1: Add and subtract polynomials.
	MA.AI.RNE.7.a.2: Multiply polynomials.
	MA.AI.RNE.7.a.3: Divide a polynomial by a monomial.
MA.AI.DS.1: Distinguish between random and non-random sampling methods, identify possible sources of bias in sampling, describe how such bias can be controlled and reduced, evaluate the characteristics of a good survey and well-designed experiment, design simple experiments or investigations to collect data to answer questions of interest, and make inferences from sample results.	MA.AI.DS.1.a.1: Identify whether an event is fair or not.
MA.AI.DS.2: Graph bivariate data on a scatter plot and describe the relationship between the variables.	MA.AI.DS.2.a.1: Graph bivariate data using scatter plots and identify possible associations between the variables.
	MA.AI.DS.2.a.2: Using scatter plots, identify data points that appear to be outliers.

Indiana Academic Standards	Content Connectors
<p>MA.AI.DS.3: Use technology to find a linear function that models a relationship for a bivariate data set to make predictions; interpret the slope and y-intercept, and compute (using technology) and interpret the correlation coefficient.</p>	<p>MA.AI.DS.3.a.1: Use the line of best fit to find a point that answers a question about the data.</p>
<p>MA.AI.DS.4: Distinguish between correlation and causation.</p>	<p>MA.AI.DS.4.a.1: Identify a correlation when analyzing bivariate data on a scatter plot.</p>
<p>MA.AI.DS.5: Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns (including joint, marginal, and conditional relative frequencies) to describe possible associations and trends in the data.</p>	<p>MA.AI.DS.5.a.1: Interpret a study using categorical data.</p>
<p>MA.AI.DS.6: Understand that statistics and data are non-neutral and designed to serve a particular interest. Analyze the possibilities for whose interest might be served and how the representations might be misleading.</p>	
<p>MA.AI.F.1: Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. Understand that if f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x. Understand the graph of f is the graph of the equation $y = f(x)$.</p>	<p>MA.AI.F.1.a.1: Distinguish between functions and non-functions within graphs or tables.</p>
<p>MA.AI.F.2: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear, has a maximum or minimum value). Sketch a graph that exhibits the qualitative features of a function that has been verbally described. Identify independent and dependent variables and make predictions about the relationship.</p>	<p>MA.AI.F.2a.1: Given a graph, describe the defining features of a function.</p>
	<p>MA.AI.F.2a.2: Given the qualitative features, sketch a graph.</p>
	<p>MA.AI.F.2a.3: Given a sketch, make predictions about the relationship between the variables.</p>
<p>MA.AI.F.3: Identify the domain and range of relations represented in tables, graphs, verbal descriptions, and equations.</p>	<p>MA.AI.F.3.a.1: Identify the domain and range from a table or graph.</p>
<p>MA.AI.F.4: Understand and interpret statements that use function notation in terms of a context; relate the domain of the function to its graph and to the quantitative</p>	<p>MA.AI.F.4.a.1: Describe the attributes of a function in function notation.</p>

Indiana Academic Standards	Content Connectors
relationship it describes.	
MA.AI.L.1: Understand that the steps taken when solving linear equations create new equations that have the same solution as the original. Solve fluently linear equations and inequalities in one variable with integers, fractions, and decimals as coefficients. Explain and justify each step in solving an equation, starting from the assumption that the original equation has a solution. Justify the choice of a solution method.	MA.AI.L.1.a.1: Solve equations with one or two variables using equations or graphs.
	MA.AI.L.1.a.2: Solve a linear equation to find a missing attribute given the area, surface area, or volume and the other attribute.
MA.AI.L.2: Represent real-world problems using linear equations and inequalities in one variable and solve such problems. Interpret the solution and determine whether it is reasonable.	MA.AI.L.2.a.1: Translate a real-world problem into a one-variable linear equation.
MA.AI.L.3: Represent real-world and other mathematical problems using an algebraic proportion that leads to a linear equation and solve such problems.	MA.AI.L.3.a.1: Represent a real-world situation using a proportion.
MA.AI.L.4: Represent linear functions as graphs from equations (with and without technology), equations from graphs, and equations from tables and other given information (e.g., from a given point on a line and the slope of the line).	MA.AI.L.4.a.1: Identify the rate of change (slope) and y-intercept from graphs.
MA.AI.L.5: Represent real-world problems using linear inequalities in two variables and solve such problems; interpret the solution set and determine whether it is reasonable. Solve other linear inequalities in two variables by graphing.	MA.AI.L.5.a.1: Interpret the rate of change using graphical representations of a real-world situation.
MA.AI.L.6: Translate among equivalent forms of equations for linear functions, including slope-intercept, point-slope, and standard. Recognize that different forms reveal more or less information about a given situation.	MA.AI.L.6.a.1: Describe the attributes of an equation given various forms.
MA.AI.L.7: Represent real-world problems using linear inequalities in two variables and solve such problems; interpret the solution set and determine whether it is reasonable. Solve other linear inequalities in two variables by graphing.	MA.AI.L.7.a.1: Identify solutions from the graph of a linear inequality within a real-world problem.
MA.AI.L.8: Solve compound linear inequalities in one variable, and represent and interpret the solution on a number line. Write a compound linear inequality given its number line representation.	MA.AI.L.8.a.1: Find a solution of compound inequalities given a graph.
MA.AI.L.9: Solve absolute value linear equations in one variable.	MA.AI.L.9.a.1: Evaluate the absolute value of an expression.
MA.AI.L.10: Graph absolute value linear equations in	MA.AI.L.10.a.1: Evaluate the absolute value of

Indiana Academic Standards	Content Connectors
two variables.	an expression.
MA.AI.L.11: Solve equations and formulas for a specified variable, including equations with coefficients represented by variables.	MA.AI.L.11.a.1: Solve literal equations for a specified variable.
MA.AI.SEI.1: Understand the relationship between a solution of a pair of linear equations in two variables and the graphs of the corresponding lines. Solve pairs of linear equations in two variables by graphing; approximate solutions when the coordinates of the solution are non-integer numbers.	MA.AI.SEI.1.a.1: Identify the solution to a system of linear equations given a graph.
MA.AI.SEI.2: Understand that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. Solve pairs of linear equations in two variables using substitution and elimination.	MA.AI.SEI.2.a.1: Solve a system of linear equations.
MA.AI.SEI.3: Write a system of two linear equations in two variables that represents a real-world problem and solve the problem with and without technology. Interpret the solution and determine whether the solution is reasonable.	MA.AI.SEI.3.a.1: Choose a system of linear equations that represents a given real-world problem.
MA.AI.SEI.4: Represent real-world problems using a system of two linear inequalities in two variables and solve such problems; interpret the solution set and determine whether it is reasonable. Solve other pairs of linear inequalities by graphing with and without technology.	MA.AI.SEI.4.a.1: Identify the solution set to a system of inequalities.
MA.AI.QE.1: Distinguish between situations that can be modeled with linear functions and with exponential functions. Understand that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. Compare linear functions and exponential functions that model real-world situations using tables, graphs, and equations.	MA.AI.QE.1.a.1: Given multiple graphs, describe the function as linear or not linear.
MA.AI.QE.2: Represent real-world and other mathematical problems that can be modeled with exponential functions using tables, graphs, and equations of the form $y = ab^x$ (for integer values of $x > 1$, rational values of $b > 0$ and $b \neq 1$); translate fluently among these representations and interpret the values of a and b .	MA.AI.QE.2.a.1: With a model, answer questions about exponential functions.
MA.AI.QE.3: Graph exponential and quadratic equations in two variables with and without technology.	MA.AI.QE.3.a.1: Determine if points lie on a graph of an exponential or quadratic function.

Indiana Academic Standards	Content Connectors
<p>MA.AI.QE.4: Solve quadratic equations in one variable by inspection (e.g., for $x^2 = 49$), finding square roots, using the quadratic formula, and factoring, as appropriate to the initial form of the equation.</p>	<p>MA.AI.QE.4.a.1: Solve equations using the properties of square roots.</p>
<p>MA.AI.QE.5: Represent real-world problems using quadratic equations in one or two variables and solve such problems with and without technology. Interpret the solution and determine whether it is reasonable.</p>	<p>MA.AI.QE.5.a.1: Determine if points lie on a graph of a quadratic function of a real-world situation.</p>
<p>MA.AI.QE.6: Use the process of factoring to determine zeros, lines of symmetry, and extreme values in real-world and other mathematical problems involving quadratic functions; interpret the results in the real-world contexts.</p>	<p>MA.AI.QE.6.a.1: Describe attributes of a quadratic function in a real-world problem.</p>
<p>MA.AI.QE.7: Describe the relationships among the solutions of a quadratic equation, the zeros of the function, the x-intercepts of the graph, and the factors of the expression.</p>	<p>MA.AI.QE.7.a.1: Identify zeros of a quadratic function.</p>

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Grade 10 Mathematics

PROCESS STANDARDS FOR MATHEMATICS

The Process Standards demonstrate the ways in which students should develop conceptual understanding of mathematical content, and the ways in which students should synthesize and apply mathematical skills.

PROCESS STANDARDS FOR MATHEMATICS	
PS.1: Make sense of problems and persevere in solving them.	Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway, rather than simply jumping into a solution attempt. They consider analogous problems and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" and "Is my answer reasonable?" They understand the approaches of others to solving complex problems and identify correspondences between different approaches. Mathematically proficient students understand how mathematical ideas interconnect and build on one another to produce a coherent whole.
PS.2: Reason abstractly and quantitatively.	Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.
PS.3: Construct viable arguments and critique the reasoning of others.	Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They analyze situations by breaking them into cases and recognize and use counterexamples. They organize their mathematical thinking, justify their conclusions and communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. They justify whether a given statement is true always, sometimes, or never. Mathematically proficient students participate and collaborate in a mathematics community. They listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

PROCESS STANDARDS FOR MATHEMATICS	
PS.4: Model with mathematics.	Mathematically proficient students apply the mathematics they know to solve problems arising in everyday life, society, and the workplace using a variety of appropriate strategies. They create and use a variety of representations to solve problems and to organize and communicate mathematical ideas. Mathematically proficient students apply what they know and are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.
PS.5: Use appropriate tools strategically.	Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Mathematically proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. Mathematically proficient students identify relevant external mathematical resources, such as digital content, and use them to pose or solve problems. They use technological tools to explore and deepen their understanding of concepts and to support the development of learning mathematics. They use technology to contribute to concept development, simulation, representation, reasoning, communication and problem solving.
PS.6: Attend to precision.	Mathematically proficient students communicate precisely to others. They use clear definitions, including correct mathematical language, in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They express solutions clearly and logically by using the appropriate mathematical terms and notation. They specify units of measure and label axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently and check the validity of their results in the context of the problem. They express numerical answers with a degree of precision appropriate for the problem context.
PS.7: Look for and make use of structure.	Mathematically proficient students look closely to discern a pattern or structure. They step back for an overview and shift perspective. They recognize and use properties of operations and equality. They organize and classify geometric shapes based on their attributes. They see expressions, equations, and geometric figures as single objects or as being composed of several objects.
PS.8: Look for and express regularity in repeated reasoning.	Mathematically proficient students notice if calculations are repeated and look for general methods and shortcuts. They notice regularity in mathematical problems and their work to create a rule or formula. Mathematically proficient students maintain oversight of the process, while attending to the details as they solve a problem. They continually evaluate the reasonableness of their intermediate results.

Math 10

The Mathematics standards for Math 10 are supplemented by the Process Standards for Mathematics.

Math 10		
IAS	Content Connectors	
Linear Equations and Inequalities	<p>MA10.EI.1 Solve linear equations with rational number coefficients fluently, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. Represent real-world problems using linear equations and inequalities in one variable and solve such problems. Explain and justify each step in solving an equation, starting from the assumption that the original equation has a solution. Justify the choice of a solution method.</p>	<p>MA10.EI.1.a.1: Solve equations with one or two variables using equations or graphs.</p> <p>MA10.EI.1.a.2: Solve a linear equation to find a missing attribute given the area, surface area, or volume and the other attribute.</p> <p>MA10.EI.1.a.3: Solve linear equations with up to two variables</p>
	<p>MA10.EI.2 Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by transforming a given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers).</p>	<p>MA10.EI.2.a.1: Recognize when a linear equation has one solution, infinitely many solutions, or no solutions.</p>
	<p>MA10.EI.3 Represent real-world problems using linear equations and inequalities in one variable and solve such problems. Interpret the solution and determine whether it is reasonable.</p>	<p>MA10.EI.3.a.1: Translate a real-world problem into a one-variable linear equation.</p>
	<p>MA10.EI.4 Represent real-world and other mathematical problems using an algebraic proportion that leads to a linear equation and solve such problems.</p>	<p>MA10.EI.4.a.1: Represent a real-world situation using a proportion.</p>
	<p>MA10.EI.5 Represent real-world problems using linear inequalities in two variables and solve such problems; interpret the solution set and determine whether it is reasonable. Solve other linear inequalities in two variables by graphing.</p>	<p>MA10.EI.5.a.1: Identify solutions from the graph of a linear inequality within a real-world problem.</p>
	<p>MA10.EI.6 Solve compound linear inequalities in one variable, and represent and interpret the solution on a number line. Write a compound linear inequality given its number line representation.</p>	<p>MA10.EI.6.a.1: Find a solution of compound inequalities given a graph.</p>
	<p>MA10.EI.7 Solve equations and formulas for a specified variable, including equations with coefficients represented by variables.</p>	<p>MA10.EI.7.a.1: Solve literal equations for a specified variable.</p>
	<p>MA10.EI.8 Solve absolute value linear equations in one variable.</p>	<p>MA10.EI.8.a.1: Evaluate the absolute value of an expression.</p>

	MA10.EI.9 Graph absolute value linear equations in two variables.	MA10.EI.9.a.1: Evaluate the absolute value of an expression.
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Math 10		
	IAS	Content Connectors
Functions	MA10.F.1 Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. Describe similarities and differences between linear and nonlinear functions from tables, graphs, verbal descriptions, and equations.	MA10.F.1.a.1: Given multiple representations, describe a function as linear and not linear.
	MA10.F.2 Construct a function to model a linear relationship between two quantities given a verbal description, table of values, or graph. Recognize in $y = mx + b$ that m is the slope (rate of change) and b is the y -intercept of the graph, and describe the meaning of each in the context of a problem.	MA10.F.2.a.1: Identify the rate of change (slope) and initial value (y -intercept) from graphs.
	MA10.F.3 Represent linear functions as graphs from equations (with and without technology), equations from graphs, and equations from tables and other given information (e.g., from a given point on a line and the slope of the line).	MA10.F.3.a.1: Identify the rate of change (slope) and y -intercept from graphs.
	MA10.F.4 Represent real-world problems that can be modeled with a linear function using equations, graphs, and tables; translate fluently among these representations, and interpret the slope and intercepts.	MA10.F.4.a.1: Interpret the rate of change using graphical representations of a real-world situation.
	MA10.F.5 Translate among equivalent forms of equations for linear functions, including slope-intercept, point-slope, and standard. Recognize that different forms reveal more or less information about a given situation.	MA10.F.5.a.1: Describe the attributes of an equation given various forms.
	MA10.F.6 Compare properties of two linear functions given in different forms, such as a table of values, equation, verbal description, and graph (e.g., compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed).	MA10.F.6.a.1: Given a table or a graph, compare two linear functions to answer a question about rates.
	MA10.F.7 Understand that a function from one set (called the domain or independent variable) to another set (called the range or dependent variable) assigns to each element of the domain exactly one element of the range. Understand that if f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . Understand the graph of f is the graph of the equation $y = f(x)$.	MA10.F.7.a.1: Distinguish between functions and non-functions within graphs or tables.
	MA10.F.8 Identify the domain and range of relations represented in tables, graphs, verbal descriptions, and equations.	MA10.F.8.a.1: Identify the domain and range from a table or graph.

	MA10.F.9 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear, has a maximum or minimum value). Sketch a graph that exhibits the qualitative features of a function that has been verbally described. Identify independent and dependent variables and make predictions about the relationship.	MA10.F.9.a.1: Given the qualitative features, sketch a graph.
		MA10.F.9.a.2: Given a sketch, describe and make predictions about the relationship between the variables.
		MA10.F.9.a.3: Given multiple graphs, describe the defining features of a function.
		MA10.F.9.a.4: Given data, create or identify a graph to model the situation.
	MA10.F.10 Understand and interpret statements that use function notation in terms of a context; relate the domain of the function to its graph and to the quantitative relationship it describes.	MA10.F.10.a.1: Describe the attributes of a function in function notation.

Math 10		
IAS		Content Connectors
Data Analysis, Statistics, and Probability	MA10.DASP.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantitative variables. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	MA10.DASP.1.a.1: Graph bivariate data using scatter plots and identify possible associations between the variables.
		MA10.DASP.1.a.2: Using scatter plots, identify data points that appear to be outliers.
	MA10.DASP.2 Represent sample spaces and find probabilities of compound events (independent and dependent) using methods, such as organized lists, tables, and tree diagrams.	MA10.DASP.2.a.1: Determine the theoretical probability of multi-stage probability experiments (2 coins, 2 dice).
		MA10.DASP.2.a.2: Collect data from multi-stage probability experiments (2 coins, 2 dice).
	MA10.DASP.3 For events with a large number of outcomes, understand the use of the multiplication counting principle. Develop the multiplication counting principle and apply it to situations with a large number of outcomes.	MA10.DASP.3.a.1: Use the multiplication counting principle to determine the total number of outcomes.
	MA10.DASP.4 Distinguish between random and non-random sampling methods, identify possible sources of bias in sampling, describe how such bias can be controlled and reduced, evaluate the characteristics of a good survey and well-designed experiment, design simple experiments or investigations to collect data to answer questions of interest, and make inferences from sample results.	MA10.DASP.4.a.1: Identify whether an event is fair or not.

	MA10.DASP.5 Understand that statistics and data are non-neutral and designed to serve a particular interest. Analyze the possibilities for whose interest might be served and how the representations might be misleading.	
	MA10.DASP.6 Find a linear function that models a relationship (with and without technology) for a bivariate data set to make predictions; interpret the slope and y-intercept, and compute (with and without technology) and interpret the correlation coefficient.	MA10.DASP.6.a.1: Use the line of best fit to find a point that answers a question about the data.
	MA10.DASP.7 Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns (including joint, marginal, and conditional relative frequencies) to describe possible associations and trends in the data.	MA10.DASP.7.a.1: Interpret a study using categorical data.
	MA10.DASP.8 Distinguish between correlation and causation.	MA10.DASP.8.a.1: Identify a correlation when analyzing bivariate data on a scatter plot.

Math 10		
	IAS	Content Connectors
Number Sense, Expressions, and Computation	MA10.NSEC.1 Give examples of rational and irrational numbers and explain the difference between them. Understand that every number has a decimal expansion; for rational numbers, show that the decimal expansion terminates or repeats, and convert a decimal expansion that repeats into a rational number.	MA10.NSEC.1.a.1: Identify rational and irrational numbers.
		MA10.NSEC.1.a.2: Round irrational numbers to the hundredths place
	MA10.NSEC.2 Use rational approximations of irrational numbers to compare the size of irrational numbers, plot them approximately on a number line, and estimate the value of expressions involving irrational numbers.	MA10.NSEC.2.a.1: Use the estimate of irrational numbers to locate them on a number line.
	MA10.NSEC.3 Given a numeric expression with common rational number bases and integer exponents, apply the properties of exponents to generate equivalent expressions.	MA10.NSEC.3.a.1: Use properties of integer exponents to produce equivalent expressions.
	MA10.NSEC.4 Rewrite and evaluate numeric expressions with positive rational exponents using the properties of exponents.	MA10.NSEC.4.a.1: Use properties of integer exponents to produce equivalent expressions.
	MA10.NSEC.5 Simplify square roots of non-perfect square integers and algebraic monomials.	MA10.NSEC.5.a.1: Solve equations using properties of square roots.
	MA10.NSEC.6 Solve real-world problems with rational numbers by using multiple operations.	MA10.NSEC.6.a.1: Solve real-world problems with rational numbers by using two operations.

	MA10.NSEC.7 Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.	
	MA10.NSEC.8 Simplify algebraic rational expressions, with numerators and denominators containing monomial bases with integer exponents, to equivalent forms.	MA10.NSEC.8.a.1: Simplify numeric exponential expressions in rational form.
	MA10.NSEC.9 Factor common terms from polynomials and factor polynomials completely. Factor the difference of two squares, perfect square trinomials, and other quadratic expressions.	MA10.NSEC.9.a.1: Simplify expressions that include exponents. Rewrite expressions that include rational exponents.
	MA10.NSEC.10 Understand polynomials are closed under the operations of addition, subtraction, and multiplication with integers; add, subtract, and multiply polynomials and divide polynomials by monomials.	MA10.NSEC.10.a.1: Add and subtract polynomials.
		MA10.NSEC.10.a.2: Multiply polynomials.
		MA10.NSEC.10.a.3: Divide a polynomial by a monomial.

Math 10		
	IAS	Content Connectors
Systems of Equations and Inequalities	MA10.SEI.1 Understand the relationship between a solution of a pair of linear equations in two variables and the graphs of the corresponding lines. Solve pairs of linear equations in two variables by graphing; approximate solutions when the coordinates of the solution are non-integer numbers.	MA10.SEI.1.a.1: Identify the solution to a system of linear equations given a graph.
	MA10.SEI.2 Understand that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. Solve pairs of linear equations in two variables using substitution and elimination.	MA10.SEI.2.a.1: Solve a system of linear equations.
	MA10.SEI.3 Write a system of two linear equations in two variables that represents a real-world problem and solve the problem with and without technology. Interpret the solution and determine whether the solution is reasonable.	MA10.SEI.3.a.1: Choose a system of linear equations that represents a given real-world problem.
	MA10.SEI.4 Represent real-world problems using a system of two linear inequalities in two variables and solve such problems; interpret the solution set and determine whether it is reasonable. Solve other pairs of linear inequalities by graphing with and without technology.	MA10.SEI.4.a.1: Identify the solution set to a system of inequalities.

Math 10		
	IAS	Content Connectors

Quadratic and Exponential Equations and Functions	MA10.QEEF.1 Distinguish between situations that can be modeled with linear functions and with exponential functions. Understand that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. Compare linear functions and exponential functions that model real-world situations using tables, graphs, and equations.	MA10.QEEF.1.a.1: Given multiple graphs, describe the function as linear or not linear.
	MA10.QEEF.2 Graph exponential and quadratic equations in two variables with and without technology.	MA10.QEEF.2.a.1: Determine if points lie on a graph of an exponential or quadratic function.
	MA10.QEEF.3 Solve quadratic equations in one variable by inspection (e.g., for $x^2 = 49$), finding square roots, using the quadratic formula, and factoring, as appropriate to the initial form of the equation.	MA10.QEEF.3.a.1: Solve equations using the properties of square roots.
	MA10.QEEF.4 Represent real-world problems using quadratic equations in one or two variables and solve such problems with and without technology. Interpret the solution and determine whether it is reasonable.	MA10.QEEF.4.a.1: Determine if points lie on a graph of a quadratic function of a real-world situation.
	MA10.QEEF.5 Use and apply the process of factoring to determine zeros (x-intercepts and solutions), lines of symmetry, and extreme values in real-world and other mathematical problems involving quadratic functions; interpret the results in the real-world contexts.	MA10.QEEF.5.a.1: Describe attributes of a quadratic function in a real-world problem.
	MA10.QEEF.6 Represent real-world and other mathematical problems that can be modeled with exponential functions using tables, graphs, and equations of the form $y = ab^x$ (for integer values of $x > 1$, rational values of $b > 0$ and $b \neq 1$); translate fluently among these representations and interpret the values of a and b .	MA10.QEEF.6.a.1: With a model, answer questions about exponential functions.

Math 10		
IAS		Content Connectors
Geometry and Measurement	MA10.GM.1 Identify, define and describe attributes of three-dimensional geometric objects (right rectangular prisms, cylinders, cones, spheres, and pyramids). Explore the effects of slicing these objects using appropriate technology and describe the two-dimensional figure that results.	MA10.GM.1.a.1: Identify and describe attributes of three-dimensional geometric objects.
	MA10.GM.2 Solve real-world and other mathematical problems involving volume of cones, spheres, and pyramids and surface area of spheres.	MA10.GM.2.a.1: Apply the formula to find the volume of three-dimensional shapes (e.g., cubes, spheres, and cylinders).
	MA10.GM.3 Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations. Describe a sequence	MA10.GM.3.a.1: Describe a sequence of transformations between two congruent figures.

that exhibits the congruence between two given congruent figures.	
MA10.GM.4 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	MA10.GM.4.a.1: Describe the effects of transformations on the coordinates of a figure.
MA10.GM.5 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and other mathematical problems in two dimensions.	MA10.GM.5.a.1: Apply the Pythagorean Theorem to determine lengths/distances in real-world situations. MA10.GM.5.a.2: Find the hypotenuse of a two-dimensional right triangle (Pythagorean Theorem).
MA10.GM.6 Apply the Pythagorean Theorem to find the distance between two points in a coordinate plane.	MA10.GM.6.a.1: Apply the Pythagorean Theorem to determine lengths/distances on a coordinate plane.

DRAFT

Geometry

PROCESS STANDARDS FOR MATHEMATICS

The Process Standards demonstrate the ways in which students should develop conceptual understanding of mathematical content, and the ways in which students should synthesize and apply mathematical skills.

PROCESS STANDARDS FOR MATHEMATICS	
PS.1: Make sense of problems and persevere in solving them.	<p>Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway, rather than simply jumping into a solution attempt. They consider analogous problems and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" and "Is my answer reasonable?" They understand the approaches of others to solving complex problems and identify correspondences between different approaches. Mathematically proficient students understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p>
PS.2: Reason abstractly and quantitatively.	<p>Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.</p>
PS.3: Construct viable arguments and critique the reasoning of others.	<p>Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They analyze situations by breaking them into cases and recognize and use counterexamples. They organize their mathematical thinking, justify their conclusions and communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. They justify whether a given statement is true always, sometimes, or never. Mathematically proficient students participate and collaborate in a mathematics community. They listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.</p>

<p>PS.4: Model with mathematics.</p>	<p>Mathematically proficient students apply the mathematics they know to solve problems arising in everyday life, society, and the workplace using a variety of appropriate strategies. They create and use a variety of representations to solve problems and to organize and communicate mathematical ideas. Mathematically proficient students apply what they know and are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.</p>
<p>PS.5: Use appropriate tools strategically.</p>	<p>Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Mathematically proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. Mathematically proficient students identify relevant external mathematical resources, such as digital content, and use them to pose or solve problems. They use technological tools to explore and deepen their understanding of concepts and to support the development of learning mathematics. They use technology to contribute to concept development, simulation, representation, reasoning, communication and problem solving.</p>
<p>PS.6: Attend to precision.</p>	<p>Mathematically proficient students communicate precisely to others. They use clear definitions, including correct mathematical language, in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They express solutions clearly and logically by using the appropriate mathematical terms and notation. They specify units of measure and label axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently and check the validity of their results in the context of the problem. They express numerical answers with a degree of precision appropriate for the problem context.</p>
<p>PS.7: Look for and make use of structure.</p>	<p>Mathematically proficient students look closely to discern a pattern or structure. They step back for an overview and shift perspective. They recognize and use properties of operations and equality. They organize and classify geometric shapes based on their attributes. They see expressions, equations, and geometric figures as single objects or as being composed of several objects.</p>
<p>PS.8: Look for and express regularity in repeated reasoning.</p>	<p>Mathematically proficient students notice if calculations are repeated and look for general methods and shortcuts. They notice regularity in mathematical problems and their work to create a rule or formula. Mathematically proficient students maintain oversight of the process, while attending to the details as they solve a problem. They continually evaluate the reasonableness of their intermediate results.</p>

GEOMETRY

The Mathematics standards for Geometry are supplemented by the Process Standards for Mathematics.

The Mathematics standards for Geometry are made up of 5 strands: Logic and Proofs; Points, Lines, Angles, and Planes; Triangles; Quadrilaterals and Other Polygons; Circles; Transformations; and Three-dimensional Solids. The skills listed in each strand indicate what students should know and be able to do in Geometry.

GEOMETRY		
	IAS	Content Connectors
LOGIC AND PROOFS	G.LP.1: Understand and describe the structure of and relationships within an axiomatic system (undefined terms, definitions, axioms and postulates, methods of reasoning, and theorems). Understand the differences among supporting evidence, counterexamples, and actual proofs.	G.LP.1.a.1: Utilize a definition, postulate, or theorem to support a method of reasoning.
	G.LP.2: Know precise definitions for angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, and plane. Use standard geometric notation.	G.LP.2.a.1: Identify an angle, circle, point, plane, and various lines.
	G.LP.3: State, use, and examine the validity of the converse, inverse, and contrapositive of conditional ("if – then") and bi-conditional ("if and only if") statements.	G.LP.3.a.1: Identify the converse, inverse, and contraposition of conditional and bi-conditional statements.
	G.LP.4: Develop geometric proofs, including direct proofs, indirect proofs, proofs by contradiction and proofs involving coordinate geometry, using two-column, paragraphs, and flow charts formats.	G.LP.4.a.1: Utilize definitions, postulates, and theorems to develop a simple geometric proof.
POINTS, LINES, ANGLES, AND PLANES	G.PL.1: Identify, justify, and apply properties of planes.	G.PL.1.a.1: Identify properties of planes.
	G.PL.2: Describe the intersection of two or more geometric figures in the same plane.	G.PL.2.a.1: Identify the intersection of two or more geometric figures in the same plane.

	<p>G.PL.3: Prove and apply theorems about lines and angles, including the following: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent, alternate exterior angles are congruent, and corresponding angles are congruent; when a transversal crosses parallel lines, same side interior angles are supplementary; and points on a perpendicular bisector of a line segment are exactly those equidistant from the endpoints of the segment.</p>	<p>G.PL.3.a.1: Identify angle relationships when a transversal crosses parallel lines.</p>
	<p>G.PL.4: Know that parallel lines have the same slope and perpendicular lines have opposite reciprocal slopes. Determine if a pair of lines are parallel, perpendicular, or neither by comparing the slopes in coordinate graphs and in equations. Find the equation of a line, passing through a given point, that is parallel or perpendicular to a given line.</p>	<p>G.PL.4.a.1: Identify lines as parallel or perpendicular based on whether they have the same slope or opposite reciprocal slope.</p>
	<p>G.PL.5: Explain and justify the process used to construct, with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.), congruent segments and angles, angle bisectors, perpendicular bisectors, altitudes, medians, and parallel and perpendicular lines.</p>	<p>G.PL.5.a.1: Construct congruent segments and angles, bisectors, parallel and perpendicular lines.</p>
TRIANGLES	<p>G.T.1: Prove and apply theorems about triangles, including the following: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point; a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem, using triangle similarity; and the isosceles triangle theorem and its converse.</p>	<p>G.T.1.a.1: Use triangle theorems and definitions to find angle measures and segment lengths.</p>
	<p>G.T.2: Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.</p>	<p>G.T.2.a.1: Determine a triangle congruence theorem used to prove two given triangles are congruent.</p>
	<p>G.T.3: Explain and justify the process used to construct congruent triangles with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.).</p>	

	<p>G.T.4: Given two triangles, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides, and to establish the AA criterion for two triangles to be similar.</p>	<p>G.T.4.a.1: Given two triangles, determine if they are similar based on the triangle similarity theorems (AA, SAS, SSS).</p>
	<p>G.T.5: Use properties of congruent and similar triangles to solve real-world and mathematical problems involving sides, perimeters, and areas of triangles.</p>	<p>G.T.5.a.1: Given real-world problems, find various measures of triangles using properties of congruence and similarity.</p>
	<p>G.T.6: Prove and apply the inequality theorems, including the following: triangle inequality, inequality in one triangle, and the hinge theorem and its converse.</p>	<p>G.T.6.a.1: Determine if a triangle can be constructed from three given side lengths.</p> <p>G.T.6.a.2: Order side lengths based on the angle measures, and angle measures based on side lengths.</p> <p>G.T.6.a.3: Use the Hinge Theorem and its converse to find a side length or an angle measure.</p>
	<p>G.T.7: State and apply the relationships that exist when the altitude is drawn to the hypotenuse of a right triangle. Understand and use the geometric mean to solve for missing parts of triangles.</p>	<p>G.T.7.a.1: Identify three similar triangles in a given diagram when the altitude is drawn to the hypotenuse.</p>
	<p>G.T.8: Develop the distance formula using the Pythagorean Theorem. Find the lengths and midpoints of line segments in one- or two-dimensional coordinate systems. Find measures of the sides of polygons in the coordinate plane; apply this technique to compute the perimeters and areas of polygons in real-world and mathematical problems.</p>	<p>G.T.8.a.1: Find a segment length using the distance formula.</p> <p>G.T.8.a.2: Find the midpoint of a line segment.</p> <p>G.T.8.a.3: Apply the distance formula and midpoint formula in a real-world problem.</p>
	<p>G.T.9: Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.</p>	<p>G.T.9.a.1: Recognize trigonometric ratios for acute angles given side ratios of right triangles.</p>
	<p>G.T.10: Use trigonometric ratios (sine, cosine and tangent) and the Pythagorean Theorem to solve real-world and mathematical problems involving right triangles.</p>	<p>G.T.10.a.1: Find acute angle measures and side lengths in a right triangle using trigonometric ratios.</p>

	G.T.11: Use special right triangles ($30^\circ - 60^\circ$ and $45^\circ - 45^\circ$) to solve real-world and mathematical problems.	G.T.11.a.1: Apply special right triangles to find a segment length.
		G.T.11.a.2: Apply special right triangles to find angle measures of a right triangle.
QUADRILATERALS AND OTHER POLYGONS	G.QP.1: Prove and apply theorems about parallelograms, including the following: opposite sides are congruent; opposite angles are congruent; the diagonals of a parallelogram bisect each other; and rectangles are parallelograms with congruent diagonals.	G.QP.1.a.1: Identify properties of parallelograms.
	G.QP.2: Prove that given quadrilaterals are parallelograms, rhombuses, rectangles, squares or trapezoids. Include coordinate proofs of quadrilaterals in the coordinate plane.	G.QP.2.a.1: Classify a quadrilateral based on its properties.
	G.QP.3: Find measures of interior and exterior angles of polygons. Explain and justify the method used.	G.QP.3.a.1: Find measures of interior and exterior angles of polygons.
	G.QP.4: Identify types of symmetry of polygons, including line, point, rotational, and self-congruencies.	G.QP.4.a.1: Draw various types of symmetry of polygons.
	G.QP.5: Deduce formulas relating lengths and sides, perimeters, and areas of regular polygons. Understand how limiting cases of such formulas lead to expressions for the circumference and the area of a circle.	
CIRCLES	G.CI.1: Define, identify and use relationships among the following: radius, diameter, arc, measure of an arc, chord, secant, tangent, and congruent concentric circles.	G.CI.1.a.1: Identify the following attributes of a circle: radius, diameter, arc, measure of an arc, chord, secant, tangent, and congruent concentric circles.
	G.CI.2: Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius; derive the formula for the area of a sector.	G.CI.2.a.1: Apply the formula for area of a sector.
	G.CI.3: Identify and describe relationships among inscribed angles, radii, and chords, including the following: the relationship that exists between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; and the radius of a circle is perpendicular to a tangent where the radius intersects the circle.	G.CI.3.a.1: Identify inscribed, circumscribed, and central angles.

	G.CI.4: Solve real-world and other mathematical problems that involve finding measures of circumference, areas of circles and sectors, and arc lengths and related angles (central, inscribed, and intersections of secants and tangents).	G.CI.4.a.1: Apply the formula to find the measure of circumference, area of circles, and related angles.
	G.CI.5: Construct a circle that passes through three given points not on a line and justify the process used.	G.CI.5.a.1: Construct a circle that passes through three given points not on a line.
	G.CI.6: Construct a tangent line to a circle through a point on the circle, and construct a tangent line from a point outside a given circle to the circle; justify the process used for each construction.	G.CI.6.a.1: Construct a tangent line to a circle through a point on the circle, and construct a tangent line from a point outside a given circle to the circle.
	G.CI.7: Construct the inscribed and circumscribed circles of a triangle with or without technology, and prove properties of angles for a quadrilateral inscribed in a circle.	G.CI.7.a.1: Construct the inscribed and circumscribed circles of a triangle.
		G.CI.7.a.2: Find angle measures using properties of a quadrilateral inscribed in a circle.
TRANSFORMATIONS	G.TR.1: Use geometric descriptions of rigid motions to transform figures and to predict and describe the results of translations, reflections and rotations on a given figure. Describe a motion or series of motions that will show two shapes are congruent.	G.TR.1.a.1: Know the definition of rigid motions.
		G.TR.1.a.2: Describe a series of rigid transformations.
	G.TR.2: Understand a dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. Verify experimentally the properties of dilations given by a center and a scale factor. Understand the dilation of a line segment is longer or shorter in the ratio given by the scale factor.	G.TR.2.a.1: Given a scale factor identify the dilation as an enlargement or a reduction.
G.TR.2.a.2: Given two similar figures, find the scale factor.		
THREE-DIMENSIONAL SOLIDS	G.TS.1: Describe relationships between the faces, edges, and vertices of three-dimensional solids. Create a net for a given three-dimensional solid. Describe the three-dimensional solid that can be made from a given net (or pattern).	G.TS.1.a.1: Apply Euler's Theorem to find the number of faces, edges, or vertices of a three-dimensional solid.
		G.TS.1.a.2: Describe the three-dimensional solid that can be made from a given net.
	G.TS.2: Describe symmetries of three-dimensional solids.	G.TS.2.a.1: Determine the number of symmetries of a given three-dimensional solid.

<p>G.TS.3: Know properties of congruent and similar solids, including prisms, regular pyramids, cylinders, cones, and spheres; solve problems involving congruent and similar solids.</p>	<p>G.TS.3.a.1: Explain why two solids are congruent or similar.</p>
<p>G.TS.4: Describe sets of points on spheres, including chords, tangents, and great circles.</p>	<p>G.TS.4.a.1: Identify a set of points on a sphere as a chord, tangent, or great circle.</p>
<p>G.TS.5: Solve real-world and other mathematical problems involving volume and surface area of prisms, cylinders, cones, spheres, and pyramids, including problems that involve algebraic expressions.</p>	<p>G.TS.5.a.1: Find surface area and volume of three-dimensional figures given a real-world problem.</p>
<p>G.TS.6: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).</p>	
<p>G.TS.7: Graph points on a three-dimensional coordinate plane. Explain how the coordinates relate the point as the distance from the origin on each of the three axes.</p>	<p>G.TS.7.a.1: Graph a point on a three-dimensional coordinate plane.</p>
<p>G.TS.8: Determine the distance of a point to the origin on the three-dimensional coordinate plane using the distance formula.</p>	<p>G.TS.8.a.1: Using the distance formula, find the distance between the origin and a point on the three-dimensional coordinate plane.</p>
<p>G.TS.9: Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.</p>	<p>G.TS.9.a.1: Classify the shape of the cross-section created by the intersection of a two-dimensional figure and a three-dimensional solid.</p>

Third Grade Science Standards



Dr. Jennifer McCormick
Superintendent of Public Instruction

DEPARTMENT OF EDUCATION

Working Together for Student Success

Science and Engineering Process Standards (SEPS)		Content Connector
<p>SEPS.1 Posing questions (for science) and defining problems (for engineering)</p>	<p>A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.</p>	<p>A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.</p>
<p>SEPS.2 Developing and using models and tools</p>	<p>A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models.</p> <p>Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor,</p>	<p>A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models.</p> <p>Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor,</p>

Third Grade Science Standards

	<p>a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.</p>	<p>a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.</p>
<p>SEPS.3 Constructing and performing investigations</p>	<p>Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.</p>	<p>Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.</p>
<p>SEPS.4 Analyzing and interpreting data</p>	<p>Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: “Does this make sense?” “Could my results be duplicated?” and/or “Does the design solve the problem with the given constraints?”</p>	<p>Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: “Does this make sense?” “Could my results be duplicated?” and/or “Does the design solve the problem with the given constraints?”</p>
<p>SEPS.5 Using mathematics and computational thinking</p>	<p>In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing,</p>	<p>In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing,</p>

Third Grade Science Standards

	expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.	expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.
SEPS.6 Constructing explanations (for science) and designing solutions (for engineering)	Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.	Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.
SEPS.7 Engaging in argument from evidence	Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.	Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.
SEPS.8 Obtaining, evaluating, and communicating information	Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions.	Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions.

Third Grade Science Standards

	Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.	Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.
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Third Grade Science Standards

Physical Science (PS)	Content Connector
<p>3.PS.1 Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.</p>	<p>3.PS.1.a.1 Plan an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.</p>
	<p>3.PS.1.a.2 Conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.</p>
<p>3.PS.2 Identify types of simple machines and their uses. Investigate and build simple machines to understand how they are used.</p>	<p>3.PS.2.a.1 Identify types of simple machines and their uses.</p>
	<p>3.PS.2.a.2 Investigate and build simple machines to understand how they are used.</p>
<p>3.PS.3 Generate sound energy using a variety of materials and techniques, and recognize that it passes through solids, liquids, and gases (i.e. air).</p>	<p>3.PS.3.a.1 Generate sound energy using a variety of materials and techniques, and recognize that it passes through solids, liquids, and gases (i.e. air).</p>
<p>3.PS.4 Investigate and recognize properties of sound that include pitch, loudness (amplitude), and vibration as determined by the physical properties of the object making the sound.</p>	<p>3.PS.4.a.1 Investigate and recognize loudness (amplitude) of sound, as determined by the physical properties of the object making the sound.</p>
	<p>3.PS.4.a.2 Investigate and recognize properties of sound including pitch and vibration, as determined by the physical properties of the object making the sound.</p>

Third Grade Science Standards

Earth and Space Science (ESS)	Content Connector
3.ESS.1 Obtain and combine information to determine seasonal weather patterns across the different regions of the United States.	3.ESS.1.a.1 Obtain information to determine seasonal weather patterns across the different regions of the United States.
	3.ESS.1.a.2 Combine information to determine seasonal weather patterns across the different regions of the United States.
3.ESS.2 Develop solutions that could be implemented to reduce the impact of weather related hazards.	3.ESS.2.a.1 Develop solutions that could be implemented to reduce the impact of weather related hazards.
3.ESS.3 Observe the detailed characteristics of rocks and minerals. Identify and classify rocks as being composed of different combinations of minerals.	3.ESS.3.a.1 Observe the detailed characteristics of rocks and minerals.
	3.ESS.3.a.2 Identify and classify rocks as being composed of different combinations of minerals.
3.ESS.4 Determine how fossils are formed, discovered, layered over time, and used to provide evidence of the organisms and the environments in which they lived long ago.	3.ESS.4.a.1 Determine how fossils are formed and layered over time.
	3.ESS.4.a.2 Determine how fossils are discovered and used to provide evidence of the organisms and the environments in which they lived long ago.

Third Grade Science Standards

Life Science (LS)	Content Connector
<p>3.LS.1 Analyze evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.</p>	<p>3.LS.1.a.1 Analyze evidence that plants and animals have traits inherited from parents.</p>
	<p>3.LS.1.a.2 Analyze evidence that variation of traits exists in a group of similar organisms.</p>
<p>3.LS.2 Plan and conduct an investigation to determine the basic needs of plants to grow, develop, and reproduce.</p>	<p>3.LS.2.a.1 Plan an investigation to determine the basic needs of plants to grow, develop, and reproduce.</p>
	<p>3.LS.2.a.2 Conduct an investigation to determine the basic needs of plants to grow, develop, and reproduce.</p>
<p>3.LS.3 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.</p>	<p>3.LS.3.a.1 Construct an argument that plants have internal and external structures that function to support survival, growth, behavior, and reproduction.</p>
	<p>3.SL.3.a.2 Construct an argument that animals have internal and external structures that function to support survival, growth, behavior, and reproduction.</p>
<p>3.LS.4 Construct an argument that some animals form groups that help members survive.</p>	<p>3.LS.4.a.1 Construct an argument that some animals form groups that help members survive.</p>

Third Grade Science Standards

Engineering (E)	Content Connector
3-5.E.1 Identify a simple problem with the design of an object that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost.	3-5.E.1.a.1 Identify a simple problem with the design of an object that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost.
3-5.E.2 Construct and compare multiple plausible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.	3-5.E.2.a.1 Construct and compare multiple plausible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
3-5.E.3 Construct and perform fair investigations in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	3-5.E.3.a.1 Construct and perform fair investigations in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.



DEPARTMENT OF EDUCATION

Dr. Jennifer McCormick
 Superintendent of Public Instruction

Working Together for Student Success

Science and Engineering Process Standards (SEPS)		Content Connector
SEPS.1 Posing questions (for science) and defining problems (for engineering)	A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.	A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.

Fourth Grade Science Standards

SEPS.2 Developing and using models and tools	<p>A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models.</p> <p>Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.</p>	<p>A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models.</p> <p>Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.</p>
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Fourth Grade Science Standards

<p>SEPS.3 Constructing and performing investigations</p>	<p>Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.</p>	<p>Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.</p>
<p>SEPS.4 Analyzing and interpreting data</p>	<p>Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: “Does this make sense?” “Could my results be duplicated?” and/or “Does the design solve the problem with the given constraints?”</p>	<p>Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: “Does this make sense?” “Could my results be duplicated?” and/or “Does the design solve the problem with the given constraints?”</p>

Fourth Grade Science Standards

<p>SEPS.5 Using mathematics and computational thinking</p>	<p>In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p>	<p>In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p>
<p>SEPS.6 Constructing explanations (for science) and designing solutions (for engineering)</p>	<p>Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.</p>	<p>Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.</p>

Fourth Grade Science Standards

<p>SEPS.7 Engaging in argument from evidence</p>	<p>Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.</p>	<p>Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.</p>
<p>SEPS.8 Obtaining, evaluating, and communicating information</p>	<p>Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.</p>	<p>Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.</p>

Fourth Grade Science Standards

Physical Science (PS)	Content Connector
<p>4.PS.1 Investigate transportation systems and devices that operate on or in land, water, air and space and recognize the forces (lift, drag, friction, thrust and gravity) that affect their motion.</p>	<p>4.PS.1.a.1 Investigate transportation systems and devices that operate on/in land, water, air, and space.</p> <p>4.PS.1.a.2 Recognize the forces (lift, drag, friction, thrust, and gravity) that affect the motion of transportation systems and devices.</p>
<p>4.PS.2 Investigate the relationship of the speed of an object to the energy of that object.</p>	<p>4.PS.2.a.1 Investigate the relationship of the speed of an object to the energy of that object.</p>
<p>4.PS.3 Investigate how multiple simple machines work together to perform everyday tasks.</p>	<p>4.PS.3.a.1 Investigate how multiple simple machines work together to perform everyday tasks.</p>
<p>4.PS.4 Describe and investigate the different ways in which energy can be generated and/or converted from one form of energy to another form of energy.</p>	<p>4.PS.4.a.1 No changes, except maybe list the forms of energy.</p>
<p>4.PS.5 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.</p>	<p>4.PS.5.a.1 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.</p>

Fourth Grade Science Standards

Earth and Space Science (ESS)	Updates
4.ESS.1 Investigate how the moon appears to move through the sky and it changes day to day, emphasizing the importance of how the moon impacts the Earth, the rising and setting times, and solar and lunar eclipses.	4.ESS.1.a.1 Investigate how the moon appears to move through the sky and it changes day to day, emphasizing the importance of how the moon impacts the Earth, the rising and setting times, and solar and lunar eclipses.
4.ESS.2 Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.	4.ESS.2.a.1 Identify forms of energy and fuels that are derived from natural resources and describe how their uses affect the environment.
4.ESS.3 Describe how geological forces change the shape of the land suddenly and over time.	4.ESS.3.a.1 Describe how geological forces change the shape of the land suddenly and over time.
4.ESS.4 Develop solutions that could be implemented to reduce the impact of humans on the natural environment and the natural environment on humans.	4.ESS.4 .a.1 Develop solutions that could be implemented to reduce the impact of humans on the natural environment.
	4.ESS.4 .a.2 Develop solutions that could be implemented to reduce the impact of the natural environment on humans.

Fourth Grade Science Standards

Life Science (LS)	Changes
<p>4.LS.1 Observe, analyze, and interpret how offspring are very much, but not exactly, like their parents or one another. Describe how these differences in physical characteristics among individuals in a population may be advantageous for survival and reproduction.</p>	<p>4.LS.1.a.1 Observe, analyze, and interpret how offspring are very much, but not exactly, like their parents or one another.</p>
	<p>4.LS.1.a.2 Describe how these differences in physical characteristics among individuals in a population may be advantageous for survival and reproduction.</p>
<p>4.LS.2 Use evidence to support the explanation that a change in the environment may result in a plant or animal will survive and reproduce, move to a new location, or die.</p>	<p>4.LS.2.a.1 Use evidence to explain how a change in the environment can affect a plant or animal's: survival, reproduction, and habitat/relocation.</p>
<p>4.LS.3 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction in different ecosystems.</p>	<p>4.LS.3.a.1 Construct an argument that plants have internal and external structures that function to support survival, growth, behavior, and reproduction in different ecosystems.</p>
	<p>4.LS.3.a.2 Construct an argument that animals have internal and external structures that function to support survival, growth, behavior, and reproduction in different ecosystems.</p>

Fourth Grade Science Standards

Engineering (E)	Updates
3-5.E.1 Identify a simple problem with the design of an object that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost.	3-5.E.1.a.1 Identify a simple problem with the design of an object that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost.
3-5.E.2 Construct and compare multiple plausible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.	3-5.E.2.a.1 Given multiple reasonable solutions to a problem, determine which solution best meets the criteria and constraints of the problem.
3-5.E.3 Construct and perform fair investigations in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	3-5.E.3.a.1 Consider results of an investigation, including failure points, and determine which variables affected the outcome.
	3-5.E.3 a.2 Based on the results of investigations, determine whether aspect(s) of a model or prototype have or can be improved.



Dr. Jennifer McCormick
 Superintendent of Public Instruction

DEPARTMENT OF EDUCATION

Working Together for Student Success

Science and Engineering Process Standards (SEPS)		Content Connector
<p>SEPS.1 Posing questions (for science) and defining problems (for engineering)</p>	<p>A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.</p>	<p>A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.</p>

Fifth Grade Science Standards

<p>SEPS.2 Developing and using models and tools</p>	<p>A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models.</p> <p>Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.</p>	<p>A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models.</p> <p>Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.</p>
<p>SEPS.3 Constructing and performing investigations</p>	<p>Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.</p>	<p>Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.</p>

Fifth Grade Science Standards

<p>SEPS.4 Analyzing and interpreting data</p>	<p>Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: “Does this make sense?” “Could my results be duplicated?” and/or “Does the design solve the problem with the given constraints?”</p>	<p>Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: “Does this make sense?” “Could my results be duplicated?” and/or “Does the design solve the problem with the given constraints?”</p>
<p>SEPS.5 Using mathematics and computational thinking</p>	<p>In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p>	<p>In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p>
<p>SEPS.6 Constructing explanations (for science) and designing solutions (for engineering)</p>	<p>Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.</p>	<p>Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.</p>

Fifth Grade Science Standards

<p>SEPS.7 Engaging in argument from evidence</p>	<p>Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.</p>	<p>Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.</p>
<p>SEPS.8 Obtaining, evaluating, and communicating information</p>	<p>Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.</p>	<p>Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.</p>

Fifth Grade Science Standards

Physical Science (PS)	Content Connector
<p>5.PS.1 Describe and measure the volume and mass of a sample of a given material.</p>	<p>5.PS.1.a.1 Describe and measure the volume of a sample of a given material.</p>
	<p>5.PS.1.a.2 Describe and measure the mass of a sample of a given material.</p>
<p>5.PS.2 Demonstrate that regardless of how parts of an object are assembled the mass of the whole object is identical to the sum of the mass of the parts; however, the volume can differ from the sum of the volumes. (Law of Conservation of Mass)</p>	<p>5.PS.2.a.1 Demonstrate that regardless of how parts of an object are assembled the mass of the whole object is identical to the sum of the mass of the parts; however, the volume can differ from the sum of the volumes. (Law of Conservation of Mass)</p>
<p>5.PS.3 Determine if matter has been added or lost by comparing mass when melting, freezing, or dissolving a sample of a substance. (Law of Conservation of Mass)</p>	<p>5.PS.3.a.1 Determine if matter has been added or lost by comparing mass when melting, freezing, or dissolving a sample of a substance. (Law of Conservation of Mass)</p>
<p>5.PS.4 Describe the difference between weight being dependent on gravity and mass comprised of the amount of matter in a given substance or material.</p>	<p>5.PS.4.a.1 Describe the difference between weight being dependent on gravity and mass comprised of the amount of matter in a given substance or material.</p>

Earth and Space Science (ESS)	Content Connector
<p>5.ESS.1 Analyze the scale of our solar system and its components: our solar system includes the sun, moon, seven other planets and their moons, and many other objects like asteroids and comets.</p>	<p>5.ESS.1.a.1 Identify and describe the components of our solar system: the sun, moon, seven other planets and their moons, and many other objects like asteroids and comets.</p>
	<p>5.ESS.1.a.2 Demonstrate the scale of our solar system: the sun, moon, seven other planets and their moons, and many other objects like asteroids and comets.</p>
<p>5.ESS.2 Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the</p>	<p>5.ESS.2.a.1 Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows.</p>

Fifth Grade Science Standards

seasonal appearance of some stars in the night sky.	5.ESS.2.a.2 Represent data in graphical displays to reveal patterns of day and night.
	5.ESS.2.a.3 Represent data in graphical displays to reveal patterns of the seasonal appearance of some stars in the night sky.
5.ESS.3 Investigate ways individual communities within the United States protect the Earth’s resources and environment.	5.ESS.3.a.1 Investigate ways individual communities within the United States protect the Earth’s resources and environment.
5.ESS.4 Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.	5.ESS.4.a.1 Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.

Life Science (LS)	Content Connector
5.LS.1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.	5.LS.1.a.1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
5.LS.2 Observe and classify common Indiana organisms as producers, consumers, decomposers, or predator and prey based on their relationships and interactions with other organisms in their ecosystem.	5.LS.2.a.1 Observe and classify common Indiana organisms as producers, consumers, decomposers, or predator and prey based on their relationships and interactions with other organisms in their ecosystem.
5.LS.3 Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.	5.LS.3.a.1 Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

Engineering (E)	Content Connector
3-5.E.1 Identify a simple problem with the design of an object that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost.	3-5.E.1.a.1 Identify a simple problem with the design of an object that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost.

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3-5.E.2 Construct and compare multiple plausible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.	3-5.E.2.a.1 Construct and compare multiple plausible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
3-5.E.3 Construct and perform fair investigations in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	3-5.E.3.a.1 Construct and perform fair investigations in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Sixth Grade Science Standards



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Working Together for Student Success

Science and Engineering Process Standards (SEPS)		Content Connectors
SEPS.1 Posing questions (for science) and defining problems (for engineering)	A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.	Posing questions (for science) and defining problems (for engineering) A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.

Sixth Grade Science Standards

SEPS.2 Developing and using models and tools	<p>A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models.</p> <p>Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.</p>	<p>Developing and using models and tools. A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models. Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.</p>
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Sixth Grade Science Standards

<p>SEPS.3 Constructing and performing investigations</p>	<p>Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.</p>	<p>Constructing and performing investigations. Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.</p>
<p>SEPS.4 Analyzing and interpreting data</p>	<p>Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: “Does this make sense?” “Could my results be duplicated?” and/or “Does the design solve the problem with the given constraints?”</p>	<p>Analyzing and interpreting data. Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: “Does this make sense?” “Could my results be duplicated?” and/or “Does the design solve the problem with the given constraints?”</p>

Sixth Grade Science Standards

<p>SEPS.5 Using mathematics and computational thinking</p>	<p>In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p>	<p>Using mathematics and computational thinking. In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p>
<p>SEPS.6 Constructing explanations (for science) and designing solutions (for engineering)</p>	<p>Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.</p>	<p>Constructing explanations (for science) and designing solutions (for engineering) Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.</p>

Sixth Grade Science Standards

<p>SEPS.7 Engaging in argument from evidence</p>	<p>Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.</p>	<p>Engaging in argument from evidence Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.</p>
<p>SEPS.8 Obtaining, evaluating, and communicating information</p>	<p>Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.</p>	<p>Obtaining, evaluating, and communicating information Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.</p>

Sixth Grade Science Standards

Physical Science (PS)	Content Connector
6.PS.1 Distinguish between the terms position, distance, and displacement, as well as, the terms speed and velocity.	6.PS.1.a.1 Distinguish between the terms position, distance, and displacement, as well as, the terms speed and velocity.
6.PS.2 Describe the motion of an object graphically showing the relationship between time and position.	6.PS.2.a.1 Describe the motion of an object graphically showing the relationship between time and position.
6.PS.3 Describe how potential and kinetic energy can be transferred from one form to another.	6.PS.3.a.1 Describe how potential and kinetic energy can be transferred from one form to another.
6.PS.4 Investigate the properties of light, sound, and other energy waves and how they are reflected, absorbed, and transmitted through materials and space.	6.PS.4.a.1 Investigate the properties of light, sound, and other energy waves and how they are reflected, absorbed, and transmitted through materials and space.

Earth and Space Science (ESS)	Content Connector
6.ESS.1 Describe the role of gravity and inertia in maintaining the regular and predictable motion of celestial bodies.	6.ESS.1.a.1 Describe the role of gravity and inertia in maintaining the regular and predictable motion of celestial bodies.
6.ESS.2 Design models to describe how Earth's rotation, revolution, tilt, and interaction with the sun and moon cause seasons, tides, changes in daylight hours, eclipses, and phases of the moon.	6.ESS.2.a.1 Demonstrate how Earth's rotation, revolution, tilt, and interaction with the sun and moon cause seasons, tides, changes in daylight hours, eclipses, and phases of the moon.
6.ESS.3 Compare and contrast the Earth, its moon, and other planets in the solar system, including comets and asteroids. (Comparisons should be made in regard to size, surface features, atmospheric characteristics, and the ability to support life.)	6.ESS.3.a.1 Compare and contrast the Earth, its moon, and other planets in the solar system, including comets and asteroids. (Comparisons should be made in regard to size, surface features, atmospheric characteristics, and the ability to support life.)

Sixth Grade Science Standards

Life Science (LS)	Content Connector
6.LS.1 Investigate and describe how homeostasis is maintained as living things seek out their basic needs of food, water, shelter, space, and air.	6.LS.1.a.1 Investigate and describe how homeostasis is maintained as living things seek out their basic needs of food, water, shelter, space, and air.
6.LS.2 Describe the role of photosynthesis in the flow of energy in food chains, energy pyramids, and food webs. Create diagrams to show how the energy in animals' food used for bodily processes was once energy from the sun.	6.LS.2.a.1 Describe the role of photosynthesis in the flow of energy in food chains, energy pyramids, and food webs.
6.LS.3 Describe specific relationships (predator/prey, consumer/producer, parasite/host) and symbiotic relationships between organisms. Construct an explanation that predicts why patterns of interactions develop between organisms in an ecosystem.	6.LS.3.a.1 Describe specific relationships (predator/prey, consumer/producer, parasite/host) and symbiotic relationships between organisms.
6.LS.4 Investigate and use data to explain how changes in biotic and abiotic components in a given habitat can be beneficial or detrimental to native plants and animals.	6.LS.4.a.1 Investigate how changes in biotic and abiotic components in a given habitat can be beneficial or detrimental to native and animals.
6.LS.5 Research invasive species and discuss their impact on ecosystems.	

Sixth Grade Science Standards

Engineering (E)	Content Connector
6-8.E.1 Identify the criteria and constraints of a design to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.	6-8.E.1.a.1 Identify the criteria and constraints of a design to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
6-8.E.2 Evaluate competing design solutions using a systematic process to identify how well they meet the criteria and constraints of the problem.	
6-8.E.3 Analyze data from investigations to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.	
6-8.E.4 Develop a prototype to generate data for repeated investigations and modify a proposed object, tool, or process such that an optimal design can be achieved.	



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Science and Engineering Process Standards (SEPS)		Content Connectors
<p>SEPS.1 Posing questions (for science) and defining problems (for engineering)</p>	<p>A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.</p>	<p>A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.</p>



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Science and Engineering Process Standards (SEPS)		Content Connectors
<p>SEPS.2 Developing and using models and tools</p>	<p>A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models.</p> <p>Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.</p>	<p>A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models.</p> <p>Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.</p>



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Science and Engineering Process Standards (SEPS)		Content Connectors
SEPS.3 Constructing and performing investigations	Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.	Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.
SEPS.4 Analyzing and interpreting data	Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: "Does this make sense?" "Could my results be duplicated?" and/or "Does the design solve the problem with the given constraints?"	Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: "Does this make sense?" "Could my results be duplicated?" and/or "Does the design solve the problem with the given constraints?"



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Science and Engineering Process Standards (SEPS)		Content Connectors
SEPS.5 Using mathematics and computational thinking	In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.	In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.
SEPS.6 Constructing explanations (for science) and designing solutions (for engineering)	Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.	Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.



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Science and Engineering Process Standards (SEPS)		Content Connectors
SEPS.7 Engaging in argument from evidence	<p>Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.</p>	<p>Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.</p>
SEPS.8 Obtaining, evaluating, and communicating information	<p>Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.</p>	<p>Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.</p>

Seventh Grade Science Standards

Physical Science (PS)	Content Connector
7.PS.1 Draw, construct models, or use animations to differentiate between atoms, elements, molecules, and compounds.	7.PS.1.a.1 Draw, construct models, or use animations to differentiate between atoms, elements, molecules, and compounds.
7.PS.2 Describe the properties of solids, liquids, and gases. Develop models that predict and describe changes in particle motion, density, temperature, and state of a pure substance when thermal energy is added or removed.	7.PS.2.a.1 Describe the properties of solids, liquids, and gases.
	7.PS.2.a.2 Develop models that predict and describe changes in particle motion, density, temperature, and state of a pure substance when thermal energy is added or removed.
7.PS.3 Investigate the Law of Conservation of Mass by measuring and comparing the mass of a substance before and after a change of state.	7.PS.3.a.1 Investigate the Law of Conservation of Mass by measuring and comparing the mass of a substance before and after a change of state.
7.PS.4 Investigate Newton's first law of motion (Law of Inertia) and how different forces (gravity, friction, push and pull) affect the velocity of an object.	7.PS.4.a.1 Investigate Newton's first law of motion (Law of Inertia) and how different forces (gravity, friction, push and pull) affect the velocity of an object.
7.PS.5 Investigate Newton's second law of motion to show the relationship among force, mass and acceleration.	7.PS.5.a.1 Investigate Newton's second law of motion to show the relationship among force, mass and acceleration.
7.PS.6 Investigate Newton's third law of motion to show the relationship between action and reaction forces.	7.PS.6.a.1 Investigate Newton's third law of motion to show the relationship between action and reaction forces.
7.PS.7 Construct a device that uses one or more of Newton's laws of motion. Explain how motion, acceleration, force, and mass are affecting the device.	7.PS.7.a.1 Construct a device that uses one or more of Newton's laws of motion.
	7.PS.7.a.2 Explain how motion, acceleration, force, and mass are affecting the device.
7.PS.8 Investigate a process in which energy is transferred from one form to another and provide evidence that the total amount of energy does not change during the transfer when the system is closed. (Law of conservation of energy)	7.PS.8.a.1 Investigate a process in which energy is transferred from one form to another and provide evidence that the total amount of energy does not change during the transfer when the system is closed. (Law of conservation of energy)
7.PS.9 Compare and contrast the three types of heat transfer: radiation, convection, and conduction.	7.PS.9.a.1 Compare and contrast the three types of heat transfer: radiation, convection, and conduction.

Seventh Grade Science Standards

Earth and Space Science (ESS)	Content Connector
<p>7.ESS.1 Identify and investigate the properties of minerals. Identify and classify a variety of rocks based on physical characteristics from their origin, and explain how they are related using the rock cycle. (i.e. Sedimentary, igneous, and metamorphic rocks)</p>	<p>7.EES.1.a.1 Identify and investigate the properties of minerals.</p>
	<p>7.ESS.1.a.2 Identify and classify a variety of rocks based on physical characteristics from their origin, and explain how they are related using the rock cycle. (i.e. Sedimentary, igneous, and metamorphic rocks)</p>
<p>7.ESS.2 Construct a model or scale drawing (digitally or on paper), based on evidence from rock strata and fossil records, for how the geologic time scale is used to organize Earth's 4.6 billion-year-old history.</p>	<p>7.ESS.2.a.1 Construct a model or scale drawing (digitally or on paper), based on evidence from rock strata and fossil records, for how the geologic time scale is used to organize Earth's 4.6 billion-year-old history.</p>
<p>7.ESS.3 Using simulations or demonstrations, explain continental drift theory and how lithospheric (tectonic) plates have been and still are in constant motion resulting in the creation of landforms on the Earth's surface over time.</p>	<p>7.ESS.3.a.1 Using simulations or demonstrations, explain continental drift theory and how lithospheric (tectonic) plates have been and still are in constant motion resulting in the creation of landforms on the Earth's surface over time.</p>
<p>7.ESS.4 Construct an explanation, based on evidence found in and around Indiana, for how large scale physical processes, such as Karst topography and glaciation, have shaped the land.</p>	<p>7.ESS.4.a.1 Construct an explanation, based on evidence found in and around Indiana, for how large scale physical processes, such as Karst topography and glaciation, have shaped the land.</p>
<p>7.ESS.5 Construct a model, diagram, or scale drawing of the interior layers of the Earth. Identify and compare the compositional (chemical) layers to the mechanical (physical) layers of the Earth's interior including magnetic properties.</p>	<p>7.ESS.5.a.1 Identify and compare the compositional (chemical) layers to the mechanical (physical) layers of the Earth's interior including magnetic properties.</p>
<p>7.ESS.6 Research common synthetic materials (i.e. plastics, composites, polyester, and alloys) to gain an understanding that synthetic materials do come from natural resources and have an impact on society.</p>	<p>7.ESS.6.a.1 Research common synthetic materials (i.e. plastics, composites, polyester, and alloys) to gain an understanding that synthetic materials do come from natural resources and have an impact on society.</p>
<p>7.ESS.7 Describe the positive and negative environmental impacts of obtaining and utilizing various renewable and nonrenewable energy resources in Indiana. Determine which energy resources are the most beneficial and efficient.</p>	<p>7.ESS.7.a.1 Describe the positive and negative environmental impacts of obtaining and utilizing various renewable and nonrenewable energy resources in Indiana.</p>
	<p>7.ESS.7.a.2 Determine which energy resources are the most beneficial and efficient.</p>

Seventh Grade Science Standards

Life Science (LS)	Content Connector
<p>7.LS.1 Investigate and observe cells in living organisms and collect evidence showing that living things are made of cells. Compare and provide examples of prokaryotic and eukaryotic organisms. Identify the characteristics of living things.</p>	<p>7.LS.1.a.1 Identify the characteristics of living things.</p>
	<p>7.LS.1.a.2 Investigate and observe cells in living organisms and collect evidence showing that living things are made of cells.</p>
	<p>7.LS.1.a.3 Compare and provide examples of prokaryotic and eukaryotic organisms.</p>
<p>7.LS.2 Create a model to show how the cells in multicellular organisms repeatedly divide to make more cells for growth and repair as a result of mitosis. Explain how mitosis is related to cancer.</p>	<p>7.LS.2.a.1 Create a model to show how the cells in multicellular organisms repeatedly divide to make more cells for growth and repair as a result of mitosis.</p>
	<p>7.LS.2.a.2 Explain how mitosis is related to cancer.</p>
<p>7.LS.3 Explain how cells develop through differentiation into specialized tissues and organs in multicellular organisms.</p>	<p>7.LS.3.a.1 Explain how cells develop through differentiation into specialized tissues and organs in multicellular organisms.</p>
<p>7.LS.4 Research and describe the functions and relationships between various cell types, tissues, and organs in the immune system, circulatory system and digestive system of the human body.</p>	<p>7.LS.4.a.1 Research and describe the functions and relationships between various cell types, tissues, and organs in the immune system, circulatory system and digestive system of the human body.</p>
<p>7.LS.5 Compare and contrast the form and function of the organelles found in plant and animal cells.</p>	<p>7.LS.5.a.1 Compare and contrast the form and function of the organelles found in plant cells.</p>
	<p>7.LS.5.a.2 Compare and contrast the form and function of the organelles found in animal cells.</p>

Seventh Grade Science Standards

Engineering (E)	Content Connector
6-8.E.1 Identify the criteria and constraints of a design to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.	6-8.E.1.a.1 Identify the criteria and constraints of a design to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
6-8.E.2 Evaluate competing design solutions using a systematic process to identify how well they meet the criteria and constraints of the problem.	
6-8.E.3 Analyze data from investigations to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.	
6-8.E.4 Develop a prototype to generate data for repeated investigations and modify a proposed object, tool, or process such that an optimal design can be achieved.	



DEPARTMENT OF EDUCATION

Dr. Jennifer McCormick
Superintendent of Public Instruction

Working Together for Student Success

Science and Engineering Process Standards (SEPS)		Content Connectors
SEPS.1 Posing questions (for science) and defining problems (for engineering)	A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.	A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.

Eighth Grade Science Standards

<p>SEPS.2 Developing and using models and tools</p>	<p>A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models.</p> <p>Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.</p>	<p>A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models.</p> <p>Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.</p>
<p>SEPS.3 Constructing and performing investigations</p>	<p>Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.</p>	<p>Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.</p>

Eighth Grade Science Standards

<p>SEPS.4 Analyzing and interpreting data</p>	<p>Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: “Does this make sense?” “Could my results be duplicated?” and/or “Does the design solve the problem with the given constraints?”</p>	<p>Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: “Does this make sense?” “Could my results be duplicated?” and/or “Does the design solve the problem with the given constraints?”</p>
<p>SEPS.5 Using mathematics and computational thinking</p>	<p>In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p>	<p>In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p>
<p>SEPS.6 Constructing explanations (for science) and designing solutions (for engineering)</p>	<p>Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.</p>	<p>Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.</p>

Eighth Grade Science Standards

<p>SEPS.7 Engaging in argument from evidence</p>	<p>Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.</p>	<p>Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.</p>
<p>SEPS.8 Obtaining, evaluating, and communicating information</p>	<p>Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.</p>	<p>Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.</p>

Eighth Grade Science Standards

Physical Science (PS)	Content Connector
<p>8.PS.1 Create models to represent the arrangement and charges of subatomic particles in an atom (protons, neutrons and electrons). Understand the significance that the currently 118 known chemical elements combine to form all the matter in the universe.</p>	<p>8.PS.1.a.1 Create models to represent the arrangement and charges of subatomic particles in an atom (protons, neutrons and electrons).</p>
	<p>8.PS.1.a.2 Understand the significance that the currently 118 known chemical elements combine to form all the matter in the universe.</p>
<p>8.PS.2 Illustrate with diagrams (drawings) how atoms are arranged in simple molecules. Distinguish between atoms, elements, molecules, and compounds.</p>	<p>8.PS.2.a.1 Illustrate how atoms are arranged in simple molecules. Distinguish between atoms, elements, molecules, and compounds.</p>
<p>8.PS.3 Use basic information provided for an element (atomic mass, atomic number, symbol, and name) to determine its place on the Periodic Table. Use this information to find the number of protons, neutrons, and electrons in an atom.</p>	<p>8.PS.3.a.1 Use basic information provided for an element (atomic mass, atomic number, symbol, and name) to determine its place on the Periodic Table.</p>
	<p>8.PS.3.a.2 Use this information to find the number of protons, neutrons, and electrons in an atom.</p>
<p>8.PS.4 Identify organizational patterns (radius, atomic number, atomic mass, properties and radioactivity) on the Periodic Table.</p>	<p>8.PS.4.a.1 Identify organizational patterns (radius, atomic number, atomic mass, properties and radioactivity) on the Periodic Table.</p>
<p>8.PS.5 Investigate the property of density and provide evidence that properties, such as density, do not change for a pure substance.</p>	<p>8.PS.5.a.1 Investigate the property of density and provide evidence that properties, such as density, do not change for a pure substance.</p>
<p>8.PS.6 Compare and contrast physical change vs. chemical change. Analyze the properties of substances before and after substances interact to determine if a chemical reaction has occurred.</p>	<p>8.PS.6.a.1 Compare and contrast physical change vs. chemical change.</p>
	<p>8.PS.6.a.2 Analyze the properties of substances before and after substances interact to determine if a chemical reaction has occurred.</p>
<p>8.PS.7 Balance chemical equations to show how the total number of atoms for each element does not change in chemical reactions and as a result, mass is always conserved in a closed system. (Law of Conservation of Mass.)</p>	<p>8.PS.7.a.1 Balance chemical equations to show how the total number of atoms for each element does not change in chemical reactions and as a result, mass is always conserved in a closed system. (Law of Conservation of Mass.)</p>

Eighth Grade Science Standards

Earth and Space Science (ESS)	Content Connector
<p>8.ESS.1 Research global temperatures over the past century. Compare and contrast data in relation to the theory of climate change.</p>	<p>8.ESS.1.a.1 Research global temperatures over the past century.</p>
	<p>8.ESS.1.a.2 Compare and contrast data in relation to the theory of climate change.</p>
<p>8.ESS.2 Create a diagram or carry out a simulation to describe how water is cycled through the earth's crust, atmosphere and oceans. Explain how the water cycle is driven by energy from the sun and the force of gravity.</p>	<p>8.ESS.2.a.1 Create a diagram or carry out a simulation to describe how water is cycled through the earth's crust, atmosphere and oceans. Explain how the water cycle is driven by energy from the sun and the force of gravity.</p>
<p>8.ESS.3 Research how human consumption of finite natural resources (i.e. coal, oil, natural gas, and clean water) and human activities have had an impact on the environment (i.e. causes of air, water, soil, light, and noise pollution).</p>	<p>8.ESS.3.a.1 Research how human consumption of finite natural resources (i.e. coal, oil, natural gas, and clean water) and human activities have had an impact on the environment (i.e. causes of air, water, soil, light, and noise pollution).</p>

Eighth Grade Science Standards

Life Science (LS)	Content Connector
8.LS.1 Compare and contrast the transmission of genetic information in sexual and asexual reproduction. Research organisms that undergo these two types of reproduction.	8.LS.1.a.1 Compare and contrast the transmission of genetic information in sexual and asexual reproduction.
	8.LS.1.a.2 Research organisms that undergo sexual and asexual reproduction.
8.LS.2 Demonstrate how genetic information is transmitted from parent to offspring through chromosomes via the process of meiosis. Explain how living things grow and develop.	8.LS.2.a.1 Demonstrate how genetic information is transmitted from parent to offspring through chromosomes via the process of meiosis. Explain how living things grow and develop.
8.LS.3 Create and analyze Punnett squares to calculate the probability of specific traits being passed from parents to offspring using different patterns of inheritance.	8.LS.3.a.1 Create and analyze Punnett squares to calculate the probability of specific traits being passed from parents to offspring using different patterns of inheritance.
8.LS.4 Differentiate between and provide examples of acquired and genetically inherited traits.	8.LS.4.a.1 Differentiate between acquired traits and genetically inherited traits.
	8.LS.4.a.2 Provide examples of acquired traits and genetically inherited traits.
8.LS.5 Explain how factors affecting natural selection (competition, genetic variations, environmental changes, and overproduction) increase or decrease a species' ability to survive and reproduce.	8.LS.5.a.1 Explain how factors affecting natural selection (competition, genetic variations, environmental changes, and overproduction) increase or decrease a species' ability to survive and reproduce.
8.LS.6 Create models to show how the structures of chromatin, chromosomes, chromatids, genes, alleles and deoxyribonucleic acid (DNA) molecules are related and differ.	8.LS.6.a.1 Create models to show how the structures of chromatin, chromosomes, chromatids, genes, alleles and deoxyribonucleic acid (DNA) molecules are related and differ.
8.LS.7 Recognize organisms are classified into taxonomic levels according to shared characteristics. Explain how an organism's scientific name correlates to these shared characteristics.	8.LS.7.a.1 Recognize organisms are classified into taxonomic levels according to shared characteristics. Explain how an organism's scientific name correlates to these shared characteristics.
8.LS.8 Explore and predict the evolutionary relationships between species looking at the anatomical differences among modern organisms and fossil organisms.	8.LS.8.a.1 Explore and predict the evolutionary relationships between species looking at the anatomical differences among modern organisms and fossil organisms.
8.LS.9 Examine traits of individuals within a species that may give them an advantage or disadvantage to survive and reproduce in stable or changing environment.	8.LS.9.a.1 Examine traits of individuals within a species that may give them an advantage or disadvantage to survive and reproduce in stable or changing environment.

Eighth Grade Science Standards

8.LS.10 Gather and synthesize information about how humans alter organisms genetically through a variety of methods.	8.LS.10.a.1 Gather and synthesize information about how humans alter organisms genetically through a variety of methods.
8.LS.11 Investigate how viruses and bacteria affect the human body.	8.LS.11.a.1 Investigate how viruses and bacteria affect the human body.

Engineering (E)	Content Connector
6-8.E.1 Identify the criteria and constraints of a design to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.	6-8.E.1.a.1 Identify the criteria and constraints of a design to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
6-8.E.2 Evaluate competing design solutions using a systematic process to identify how well they meet the criteria and constraints of the problem.	
6-8.E.3 Analyze data from investigations to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.	
6-8.E.4 Develop a prototype to generate data for repeated investigations and modify a proposed object, tool, or process such that an optimal design can be achieved.	

LITERACY IN SCIENCE AND TECHNICAL SUBJECTS

Guiding Principle: *Students develop discipline-specific reading and writing skills. Within the content areas of Science and Technical Subjects, students apply these skills in order to develop a deeper understanding of the content area.*

There are six key areas found in the Literacy in Science and Technical Subjects section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, Synthesis and Connection of Ideas, Writing Genres, the Writing Process, and the Research Process. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Literacy in Science and Technical Subjects.

Note that the standards in this section are not designed for implementation in an English/Language Arts classroom. Instead, they provide guidance to content-area teachers in grades 6-12 (e.g., History/ Social Studies teachers, Science teachers, Career and Technical Education teachers, etc.) on expectations for integrating reading and writing skills into their classrooms.

In Literacy in Science and Technical Subjects, students are expected to do the following:

LST.1: LEARNING OUTCOME FOR LITERACY IN SCIENCE/TECHNICAL SUBJECTS			
Read and comprehend science and technical texts independently and proficiently and write effectively for a variety of discipline-specific tasks, purposes, and audiences			
LEARNING OUTCOMES	Indiana Academic Standards		Content Connector
	GRADES 6-8	6-8.LST.1.1: Read and comprehend science and technical texts within a range of complexity appropriate for grades 6-8 independently and proficiently by the end of grade 8.	6-8.LST.1.1.a: Read and comprehend science and technical texts within a range of complexity appropriate for grades 6-8 independently and proficiently by the end of grade 8.
		6-8.LST.1.2: Write routinely over a variety of time frames for a range of discipline-specific tasks, purposes, and audiences.	6-8.LST.1.2.a: Write routinely over a variety of time frames for a range of discipline-specific tasks, purposes, and audiences.
	GRADES 9-10	9-10.LST.1.1: Read and comprehend science and technical texts within a range of complexity appropriate for grades 9-10 independently and proficiently by the end of grade 10.	9-10.LST.1.1.a: Read and comprehend science and technical texts within a range of complexity appropriate for grades 9-10 independently and proficiently by the end of grade 10.
		9-10.LST.1.2: Write routinely over a variety of time frames for a range of discipline-specific tasks, purposes, and audiences.	9-10.LST.1.2.a: Write routinely over a variety of time frames for a range of discipline-specific tasks, purposes, and audiences.
GRADES 11-12	11-12.LST.1.1: Read and comprehend science and	11-12.LST.1.1.a: Read and comprehend science and technical	

	technical texts within a range of complexity appropriate for grades 11-CCR independently and proficiently by the end of grade 12.	texts within a range of complexity appropriate for grades 11-CCR independently and proficiently by the end of grade 12.
	11-12.LST.1.2: Write routinely over a variety of time frames for a range of discipline-specific tasks, purposes, and audiences.	11-12.LST.1.2.a: Write routinely over a variety of time frames for a range of discipline-specific tasks, purposes, and audiences.

LST.2: KEY IDEAS AND TEXTUAL SUPPORT (READING)		
Extract and construct meaning from science and technical texts using a variety of comprehension skills		
Indiana Academic Standards		Content Connector
GRADES 6-8	6-8.LST.2.1: Cite specific textual evidence to support analysis of science and technical texts.	6-8.LST.2.1.a: Cite specific textual evidence to support analysis of science and technical texts.
	6-8.LST.2.2: Determine the central ideas or conclusions of a text; provide an accurate, objective summary of the text.	6-8.LST.2.2.a: Determine the central ideas or conclusions of a text; provide an accurate, objective summary of the text.
	6-8.LST.2.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.	6-8.LST.2.3.a: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
GRADES 9-10	9-10.LST.2.1: Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.	9-10.LST.2.1.a: Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.
	9-10.LST.2.2: Determine the central ideas or conclusions of a text; trace the text’s explanation or depiction of a complex process, phenomenon, or concept; provide an accurate, objective summary of the text.	9-10.LST.2.2.a: Determine the central ideas or conclusions of a text; trace the text’s explanation or depiction of a complex process, phenomenon, or concept; provide an accurate, objective summary of the text.
	9-10.LST.2.3: Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.	9-10.LST.2.3.a: Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
GRADES 11-12	11-12.LST.2.1: Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.	11-12.LST.2.1.a: Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.
	11-12.LST.2.2: Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.	11-12.LST.2.2.a: Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
	11-12.LST.2.3: Follow precisely a complex multistep	11-12.LST.2.3.a: Follow precisely a complex multistep

		procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.	procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
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LST.3: STRUCTURAL ELEMENTS AND ORGANIZATION (READING)

Build understanding of science and technical texts, using knowledge of structural organization and author’s purpose and message

STRUCTURAL ELEMENTS AND ORGANIZATION

		Indiana Academic Standards	Content Connector
GRADES 6-8		6-8.LST.3.1: Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.	6-8.LST.3.1.a: Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.
		6-8.LST.3.2: Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.	6-8.LST.3.2.a: Describe the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.
		6-8.LST.3.3: Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.	6-8.LST.3.3.a: Describe the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.
GRADES 9-10		9-10.LST.3.1: Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics.	9-10.LST.3.1.a: Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics.
		9-10.LST.3.2: Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., <i>force, friction, reaction force, energy</i>).	9-10.LST.3.2.a: Describe the structure of the relationships among concepts in a text, including relationships among key terms (e.g., <i>force, friction, reaction force, energy</i>).
		9-10.LST.3.3: Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address.	9-10.LST.3.3.a: Describe the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address.
GRADES 11-12		11-12.LST.3.1: Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.	11-12.LST.3.1.a: Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.
		11-12.LST.3.2: Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.	11-12.LST.3.2.a: Describe how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.
		11-12.LST.3.3: Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.	11-12.LST.3.3.a: Describe the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

LST.4: SYNTHESIS AND CONNECTION OF IDEAS (READING)**Build understanding of science and technical texts by synthesizing and connecting ideas and evaluating specific claims**

Indiana Academic Standards		Content Connector
GRADES 6-8	6-8.LST.4.1: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., <i>in a flowchart, diagram, model, graph, or table</i>).	6-8.LST.4.1.a: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., <i>in a flowchart, diagram, model, graph, or table</i>).
	6-8.LST.4.2: Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.	6-8.LST.4.2.a: Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.
	6-8.LST.4.3: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.	6-8.LST.4.3.a: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
GRADES 9-10	9-10.LST.4.1: Translate quantitative or technical information expressed in words in a text into visual form (e.g., <i>a table or chart</i>) and translate information expressed visually or mathematically (e.g., <i>in an equation</i>) into words.	9-10.LST.4.1.a: Translate quantitative or technical information expressed in words in a text into visual form (e.g., <i>a table or chart</i>) and translate information expressed visually or mathematically (e.g., <i>in an equation</i>) into words.
	9-10.LST.4.2: Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.	9-10.LST.4.2.a: Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.
	9-10.LST.4.3: Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.	9-10.LST.4.3.a: Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.
GRADES 11-12	11-12.LST.4.1: Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., <i>quantitative data, video, multimedia</i>) in order to address a question or solve a problem.	11-12.LST.4.1.a: Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., <i>quantitative data, video, multimedia</i>) in order to address a question or solve a problem.
	11-12.LST.4.2: Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.	11-12.LST.4.2.a: Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.
	11-12.LST.4.3: Synthesize information from a range of sources (e.g., <i>texts, experiments, simulations</i>) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.	11-12.LST.4.3.a: Draw conclusions from a range of sources (e.g., <i>texts, experiments, simulations</i>) to develop a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

LH.5: WRITING GENRES (WRITING)			
Write for different purposes and to specific audiences or people			
WRITING GENRES	Indiana Academic Standards		Content Connector
	GRADES 6-8	6-8.LST.5.1: Write arguments focused on discipline-specific content.	6-8.LST.5.1.a: Write arguments focused on discipline-specific content.
		6-8.LST.5.2: Write informative texts, including scientific procedures/experiments or technical processes that include precise descriptions and conclusions drawn from data and research.	6-8.LST.5.2.a: Write informative texts, including scientific procedures/experiments or technical processes that include precise descriptions and conclusions drawn from data and research.
	GRADES 9-10	9-10.LST.5.1: Write arguments focused on discipline-specific content.	9-10.LST.5.1.a: Write arguments focused on discipline-specific content.
		9-10.LST.5.2: Write informative texts, including scientific procedures/experiments or technical processes that include precise descriptions and conclusions drawn from data and research.	9-10.LST.5.2.a: Write informative texts, including scientific procedures/experiments or technical processes that include precise descriptions and conclusions drawn from data and research.
	GRADES 11-12	11-12.LST.5.1: Write arguments focused on discipline-specific content.	11-12.LST.5.1.a: Write arguments focused on discipline-specific content.
11-12.LST.5.2: Write informative texts, including scientific procedures/experiments or technical processes that include precise descriptions and conclusions drawn from data and research.		11-12.LST.5.2.a: Write informative texts, including scientific procedures/experiments or technical processes that include precise descriptions and conclusions drawn from data and research.	

LST.6: THE WRITING PROCESS (WRITING)		
Produce coherent and legible documents by planning, drafting, revising, editing, and collaborating with others		
Indiana Academic Standards		Content Connector
GRADES 6-8	6-8.LST.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults.	6-8.LST.6.1.a: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults.
	6-8.LST.6.2: Use technology to produce and publish writing and present the relationships between information and ideas clearly and efficiently.	6-8.LST.6.2.a: Use technology to produce and publish writing and present the relationships between information and ideas clearly and efficiently.
GRADES 9-10	9-10.LST.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach, focusing on addressing what is most significant for a specific purpose and audience; and edit to produce and strengthen writing that is clear and coherent.	9-10.LST.6.1.a: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach, focusing on addressing what is most significant for a specific purpose and audience; and edit to produce and strengthen writing that is clear and coherent.
	9-10.LST.6.2: Use technology to produce, publish, and update individual or shared writing products, taking advantage of technology’s capacity to link to other information and to display information flexibly and dynamically.	9-10.LST.6.2.a: Use technology to produce, publish, and update individual or shared writing products, taking advantage of technology’s capacity to link to other information and to display information flexibly and dynamically.
GRADES 11-12	11-12.LST.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach, focusing on addressing what is most significant for a specific purpose and audience; and edit to produce and strengthen writing that is clear and coherent.	11-12.LST.6.1.a: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach, focusing on addressing what is most significant for a specific purpose and audience; and edit to produce and strengthen writing that is clear and coherent.
	11-12.LST.6.2: Use technology to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	11-12.LST.6.2.a: Use technology to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

THE WRITING PROCESS

LST.7: THE RESEARCH PROCESS (WRITING)

Build knowledge about the research process and the topic under study by conducting short or more sustained research

Indiana Academic Standards

Content Connector

THE RESEARCH PROCESS

		Indiana Academic Standards	Content Connector
GRADES 6-8		6-8.LST.7.1: Conduct short research assignments and tasks to answer a question (including a self-generated question), or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.	6-8.LST.7.1.a: Conduct short research assignments and tasks to answer a question (including a self-generated question), or test a hypothesis, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
		6-8.LST.7.2: Gather relevant information from multiple sources, using search terms effectively; annotate sources; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation (e.g., <i>APA</i> or <i>CSE</i>).	6-8.LST.7.2.a: Gather relevant information from multiple sources, using search terms effectively; annotate sources; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation (e.g., <i>APA</i> or <i>CSE</i>).
		6-8.LST.7.3: Draw evidence from informational texts to support analysis, reflection, and research.	6-8.LST.7.3.a: Draw evidence from informational texts to support analysis, reflection, and research.
GRADES 9-10		9-10.LST.7.1: Conduct short as well as more sustained research assignments and tasks to answer a question (including a self-generated question), test a hypothesis, or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	9-10.LST.7.1.a: Conduct short as well as more sustained research assignments and tasks to answer a question (including a self-generated question), test a hypothesis, or solve a problem; narrow or broaden the inquiry when appropriate; cite evidence from multiple sources on the subject, demonstrating understanding of the subject under investigation.
		9-10.LST.7.2: Gather relevant information from multiple authoritative sources, using advanced searches effectively; annotate sources; assess the usefulness of each source in answering the research question; synthesize and integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation (e.g., <i>APA</i> or <i>CSE</i>).	9-10.LST.7.2.a: Gather relevant information from multiple authoritative sources, using advanced searches effectively; annotate sources; assess the usefulness of each source in answering the research question; interpret and integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation (e.g., <i>APA</i> or <i>CSE</i>).
		9-10.LST.7.3: Draw evidence from informational texts to support analysis, reflection, and research.	9-10.LST.7.3.a: Draw evidence from informational texts to support analysis, reflection, and research.
GRADES 11-12		11-12.LST.7.1: Conduct short as well as more sustained research assignments and tasks to answer a question (including a self-generated question), test a hypothesis, or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	11-12.LST.7.1.a: Conduct short as well as more sustained research assignments and tasks to answer a question (including a self-generated question), test a hypothesis, or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

		<p>11-12.LST.7.2: Gather relevant information from multiple types of authoritative sources, using advanced searches effectively; annotate sources; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; synthesize and integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation (e.g., <i>APA</i> or <i>CSE</i>).</p>	<p>11-12.LST.7.2.a: Gather relevant information from multiple types of authoritative sources, using advanced searches effectively; annotate sources; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; synthesize and integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation (e.g., <i>APA</i> or <i>CSE</i>).</p>
		<p>11-12.LST.7.3: Draw evidence from informational texts to support analysis, reflection, and research.</p>	<p>11-12.LST.7.3.a: Draw evidence from informational texts to support analysis, reflection, and research.</p>

Third – Fifth Grade Computer Science Standards



Dr. Jennifer McCormick
Superintendent of Public Instruction

Working Together for Student Success

Introduction to Indiana’s Academic Standards for Computer Science

Indiana’s Academic Standards for Computer Science allows for students to be prepared in the ever-changing computer science areas providing inquiry-based, hands-on experiences based on two components: Concepts and Practices. These standards are to be implemented in the 2016-2017 school year. The expectation is for students to work through the standards in multi-subject areas. As students move through grade levels, they will work with and experience the standards at those grade bands (K-2, 3-5, and 6-8). The standards are based on the five core concepts: Computing Devices and Systems, Networking and Communication, Data and Information, Programs and Algorithms, Impact and Culture.

Data and Information (DI)	Content Connector
3-5.DI.1 Understand and use the basic steps in algorithmic problem solving (e.g., problem statement and exploration, examination of sample instances, design, implementation, and testing).	3-5.DI.1.a.1 Understand and use the basic steps in algorithmic problem solving (e.g., problem statement and exploration, examination of sample instances, design, implementation, and testing).
3-5.DI.2 Develop a simple understanding of an algorithm (e.g., search, sequence of events, or sorting) using computer-free exercises.	3-5.DI.2.a.1 Develop a simple understanding of an algorithm (e.g., search, sequence of events, or sorting) using computer-free exercises.
3-5.DI.3 Demonstrate how a string of bits can be used to represent alphanumeric information and how 1's and 0's represent information.	
3-5.DI.4 Describe how a simulation can be used to solve a problem.	3-5.DI.4.a.1 Describe how a simulation can be used to solve a problem.
3-5.DI.5 Understand the connections between computer science and other fields.	3-5.DI.5.a.1 Understand the connections between computer science and other fields.

Computing Devices and Systems (CD)	Content Connector
3-5.CD.1 Demonstrate proficiency with keyboards and other input and output devices.	3-5.CD.1.a.1 Demonstrate proficiency with keyboards and other input and output devices.
3-5.CD.2 Understand the pervasiveness of computers and computing in daily life (e.g., voicemail, downloading videos and audio files, microwave	3-5.CD.2.a.1 Understand the pervasiveness of computers and computing in daily life (e.g., voicemail, downloading videos and audio files, microwave

Third – Fifth Grade Computer Science Standards

ovens, thermostats, wireless Internet, mobile computing devices, GPS systems).	ovens, thermostats, wireless Internet, mobile computing devices, GPS systems).
3-5.CD.3 Apply troubleshooting strategies for identifying simple hardware and software problems that may occur during use.	3-5.CD.3.a.1 Apply troubleshooting strategies for identifying simple hardware and software problems that may occur during use
3-5.CD.4 Recognize that computers model intelligent behavior (as found in robotics, speech and language recognition, and computer animation).	

Programs and Algorithms (PA)	Content Connector
3-5.PA.1 Use technology resources (e.g., calculators, data collection probes, mobile devices, videos, educational software, and web tools) for problem-solving and self-directed learning, and general-purpose productivity tools and peripherals to support personal productivity, remediate skill deficits, facilitate learning, and individual/collaborative writing, communication, and publishing activities.	3-5.PA.1.a.1 Use technology resources (e.g., calculators, data collection probes, mobile devices, videos, educational software, and web tools) for problem solving and self-directed learning.
3-5.PA.2 Use digital tools to gather, manipulate, and modify data for use by a program.	
3-5.PA.3 Implement problem solutions using a block-based visual programming language.	

Networking and Communication (NC)	Content Connector
3-5.NC.1 Use online resources (e.g., email, online discussions, collaborative web environments) to participate in collaborative problem-solving activities for the purpose of developing solutions or products.	3-5.NC.1.a.1 Use online resources (e.g., email, online discussions, collaborative web environments) to participate in collaborative problem-solving activities for the purpose of developing solutions or products.
3-5.NC.2 Use productivity technology tools (e.g., word processing, spreadsheet, presentation software) for individual and collaborative writing, communication, and publishing activities.	3-5.NC.2.a.1 Use productivity technology tools (e.g., word processing, spreadsheet, presentation software) for individual and collaborative writing, communication, and publishing activities.

Impact and Culture (IC)	Content Connector
3-5.IC.1 Discuss basic issues related to responsible use of technology and information, and the consequences of inappropriate use.	3-5.IC.1.a.1 Discuss basic issues related to responsible use of technology and information, and the consequences of inappropriate use.
3-5.IC.2 Identify the impact of technology (e.g., social networking, cyber bullying, mobile computing and communication, web technologies, cyber security, and virtualization) on personal life and society.	3-5.IC.2.a.1 Identify the impact of technology (e.g., social networking, cyber bullying, mobile computing and communication, web technologies, cyber security, and virtualization) on personal life and society.

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3-5.IC.3 Evaluate the accuracy, relevance, appropriateness, comprehensiveness, and biases that occur in electronic information sources.	3-5.IC.3.a.1 Evaluate the accuracy, relevance, appropriateness, comprehensiveness, and biases that occur in electronic information sources.
3-5.IC.4 Understand ethical issues that relate to computers and networks (e.g., equity of access, security, privacy, copyright, and intellectual property).	3-5.IC.4.a.1 Understand ethical issues that relate to computers and networks (e.g., equity of access, security, privacy, copyright, plagiarism and intellectual property).



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Data and Information (DI)	Content Connector
<p>6-8.DI.1 Use the basic steps in algorithmic problem-solving to design solutions (e.g., problem statement and exploration, examination of sample instances, design, implementing a solution, testing, and evaluation).</p>	<p>6-8.DI.1.a.1 Use the basic steps in algorithmic problem-solving to design solutions (e.g., problem statement and exploration, examination of sample instances, design, implementing a solution, testing, and evaluation).</p>
<p>6-8.DI.2 Describe the process of parallelization as it relates to problem solving.</p>	
<p>6-8.DI.3 Represent data in a variety of ways (e.g., text, sounds, pictures, and numbers), and use different visual representations of problems, structures, and data (e.g., graphs, charts, network diagrams, flowcharts).</p>	<p>6-8.DI.3.a.1 Represent data in a variety of ways (e.g., text, sounds, pictures, and numbers), and use different visual representations of problems, structures, and data (e.g., graphs, charts, network diagrams, flowcharts).</p>
<p>6-8.DI.4 Understand the notion of hierarchy and abstraction in computing including high-level languages, translation, instruction set, and logic circuits.</p>	
<p>6-8.DI.5 Demonstrate interdisciplinary applications of computational thinking and interact with content-specific models and simulations to support learning and research.</p>	



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Computing Devices and Systems (CD)	Content Connector
<p>6-8.CD.1 Demonstrate an understanding of the relationship between hardware and software.</p>	<p>6-8.CD.1.a.1 Demonstrate an understanding of the relationship between hardware and software.</p>
<p>6-8.CD.2 Apply troubleshooting strategies to identify and solve routine hardware and software problems that occur during everyday computer use.</p>	<p>6-8.CD.2.a.1 Apply troubleshooting strategies to identify and solve routine hardware and software problems that occur during everyday computer use.</p>
<p>6-8.CD.3 Describe the major components and functions of computer systems and network.</p>	
<p>6-8.CD.4 Describe what distinguishes humans from machines focusing on human intelligence versus machine intelligence and ways we can communicate, as well as ways in which computers use models of intelligent behavior (e.g., robot motion, speech and language understanding, and computer vision).</p>	<p>6-8.CD.4.a.1 Distinguish humans from machines by focusing on human intelligence versus machine intelligence and ways we can communicate, as well as ways in which computers use models of intelligent behavior (e.g., robot motion, speech and language understanding, and computer vision).</p>



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Programs and Algorithms (PA)	Content Connector
<p>6-8.PA.1 Select appropriate tools and technology resources to support learning and personal productivity, publish individual products, and design, develop, and publish data, accomplish a variety of tasks, and solve problems.</p>	<p>6-8.PA.1.a.1 Select appropriate tools and technology resources to support learning and personal productivity, publish individual products, and design, develop, and publish data, accomplish a variety of tasks, and solve problems.</p>
<p>6-8.PA.2 Implement problem solutions using a programming language that includes looping behavior, conditional statements, logic, expressions, variables, and functions.</p>	
<p>6-8.PA.3 Demonstrate dispositions amenable to open-ended problem solving and programming (e.g., comfort with complexity, persistence, brainstorming, adaptability, patience, propensity to tinker, creativity, accepting challenge).</p>	<p>6-8.PA.2.a.1 Demonstrate dispositions amenable to open-ended problem solving (e.g., comfort with complexity, persistence, brainstorming, adaptability, patience, propensity to tinker, creativity, accepting challenge).</p>

Networking and Communication (NC)	Content Connector
<p>6-8.NC.1 Collaboratively design, develop, publish, and present products (e.g., videos, podcasts, websites) using technology resources that demonstrate and communicate curriculum concepts.</p>	<p>6-8.NC.1.a.1 Collaboratively design, develop, publish, and present products (e.g., videos, podcasts, websites) using technology resources that demonstrate and communicate curriculum concepts.</p>
<p>6-8.NC.2 Exhibit dispositions necessary for collaboration: providing useful feedback, integrating feedback, understanding and accepting multiple perspectives, socialization.</p>	<p>6-8.NC.2.a.1 Exhibit dispositions necessary for collaboration: providing useful feedback, integrating feedback, understanding and accepting multiple perspectives, socialization.</p>



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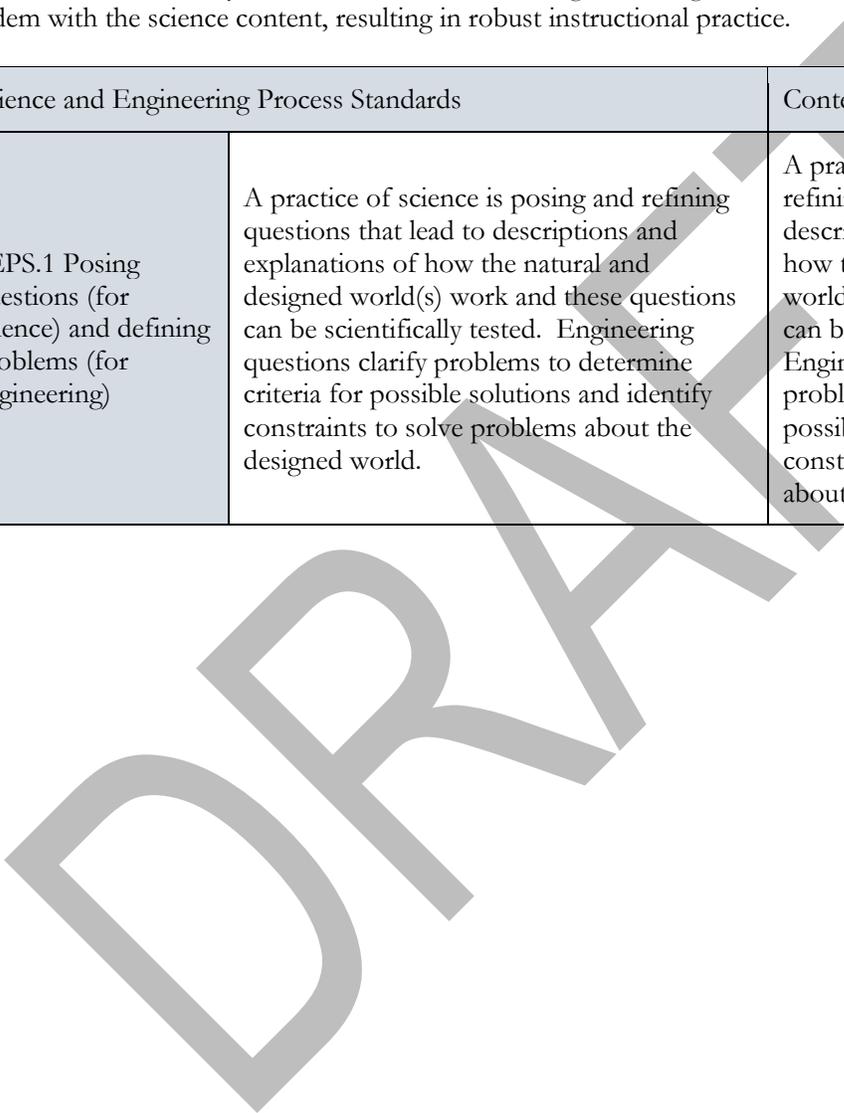
Impact and Culture (IC)	Content Connector
<p>6-8.IC.1 Exhibit legal and ethical behaviors when using technology and information and discuss the consequences of misuse.</p>	<p>6-8.IC.1.a.1 Exhibit legal and ethical behaviors when using technology and information and discuss the consequences of misuse.</p>
<p>6-8.IC.2 Analyze the positive and negative impacts of technology on one's personal life, society, and our culture.</p>	<p>6-8.IC.2.a.1 Identify the positive and negative impacts of technology on one's personal life, society, and our culture.</p>
<p>6-8.IC.3 Evaluate the accuracy, relevance, appropriateness, comprehensiveness, and biases that occur in electronic information sources.</p>	<p>6-8.IC.3.a.1 Determine the accuracy relevance, appropriateness, comprehensiveness, and biases that occur in electronic information sources.</p>
<p>6-8.IC.4 Describe ethical issues that relate to computers and networks (e.g., security, privacy, ownership, and information sharing), and discuss how unequal distribution of technological resources in a global economy raises issues of equity, access, and power.</p>	<p>6-8.IC.4.a.1 Describe ethical issues that relate to computers and networks (e.g., security, privacy, ownership, and information sharing).</p>



Science and Engineering Process Standards (SEPS)

The Science and Engineering Process Standards are the processes and skills that students are expected to learn and be able to do within the context of the science content. The separation of the Science and Engineering Process Standards from the Content Standards is intentional; the separation of the standards explicitly shows that what students are doing while learning science is extremely important. The Process Standards reflect the way in which students are learning and doing science and are designed to work in tandem with the science content, resulting in robust instructional practice.

Science and Engineering Process Standards		Content Connectors
SEPS.1 Posing questions (for science) and defining problems (for engineering)	A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.	A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.





<p>SEPS.2 Developing and using models and tools</p>	<p>A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models.</p>	<p>A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models.</p>
	<p>Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.</p>	<p>Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.</p>



<p>SEPS.3 Constructing and performing investigations</p>	<p>Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.</p>	<p>Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.</p>
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<p>SEPS.4 Analyzing and interpreting data</p>	<p>Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: “Does this make sense?” “Could my results be duplicated?” and/or “Does the design solve the problem with the given constraints?”</p>	<p>Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: “Does this make sense?” “Could my results be duplicated?” and/or “Does the design solve the problem with the given constraints?”</p>
<p>SEPS.5 Using mathematics and computational thinking</p>	<p>In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p>	<p>In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p>



<p>SEPS.6 Constructing explanations (for science) and designing solutions (for engineering)</p>	<p>Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.</p>	<p>Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.</p>
<p>SEPS.7 Engaging in argument from evidence</p>	<p>Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.</p>	<p>Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.</p>



<p>SEPS.8 Obtaining, evaluating, and communicating information</p>	<p>Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.</p>	<p>Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.</p>
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Content Standards

For the high school science courses, the content standards are organized around the core ideas in each particular course. Within each core idea are indicators which serve as the more detailed expectations within each of the content areas.

Indiana Environmental Science		Content Connectors
<p>Standard 1: Environmental Systems</p>	<p>Env.1.1 Understand and explain that ecosystems have cyclic fluctuations, such as seasonal changes or changes in population, as a result of migration, birth, and mortality.</p>	<p>Env.1.1.a.1 Understand and explain that ecosystems have cyclic fluctuations, such as seasonal changes or changes in population, as a result of migration, birth, and mortality.</p>
	<p>Env.1.2 Understand and explain that human beings are part of Earth’s ecosystems and give examples of how human activities can, deliberately or inadvertently, alter ecosystems.</p>	<p>Env.1.2.a.1 Understand and explain that human beings are part of Earth’s ecosystems and give examples of how human activities can, deliberately or inadvertently, alter ecosystems.</p>
	<p>Env.1.3 Recognize and describe the difference between systems in equilibrium and systems in disequilibrium. Describe how steady state is achieved through negative and positive feedback loops.</p>	<p>Env.1.3.a.1 Recognize and describe the difference between systems in equilibrium and systems in disequilibrium. Describe how steady state is achieved through negative and positive feedback loops.</p>



	<p>Env.1.4 Diagram the cycling of carbon, nitrogen, phosphorus, and water and describe the human impacts on each.</p>	<p>Env.1.4.a.1 Diagram the cycling of carbon, nitrogen, phosphorus, and water and describe the human impacts on each.</p>
	<p>Env.1.5 Identify and measure biological, chemical, and physical (abiotic and biotic) factors within an ecosystem.</p>	<p>Env.1.5.a.1 Identify and measure biological, chemical, and physical (abiotic and biotic) factors within an ecosystem.</p>
	<p>Env.1.6 Describe the difference between weather and climate. Locate, identify, and describe the major Earth biomes. Explain how biomes are determined by climate (temperature and precipitation patterns) that support specific kinds of plants.</p>	<p>Env.1.6.a.1 Describe the difference between weather and climate.</p>
		<p>Env.1.6.a.2 Locate, identify, and describe the major Earth biomes. Explain how biomes are determined by climate (temperature and precipitation patterns) that support specific kinds of plants.</p>
	<p>Env.1.7 Identify tools and technologies used to adapt and alter environments and natural resources in order to meet human physical and cultural needs.</p>	<p>Env.1.7.a.1 Identify tools and technologies used to adapt and alter environments and natural resources in order to meet human physical and cultural needs.</p>
	<p>Env.1.8 Explain the factors that influence weather and climate, the action of gravitational forces, and the rotation of the Earth.</p>	<p>Env.1.8.a.1 Explain the factors that influence weather and climate, the action of gravitational forces, and the rotation of the Earth.</p>
	<p>Env.1.9 Describe how weather can be influenced by global climatic patterns, such as El Niño and La Niña.</p>	<p>Env.1.9.a.1 Describe how weather can be influenced by global climatic patterns, such as El Niño and La Niña.</p>
<p>Standard 2: Flow of Matter and Energy</p>	<p>Env.2.1 Describe how matter cycles through sources and sinks and how energy is transferred. Explain how matter and energy move between and within components of an environmental system.</p>	<p>Env.2.1.a.1 Describe how matter cycles through sources and sinks and how energy is transferred. Explain how matter and energy move between and within components of an environmental system.</p>
	<p>Env.2.2 Identify the different forms of energy and understand that energy may be converted from one form to another, but cannot be created or destroyed.</p>	<p>Env.2.2.a.1 Identify the different forms of energy and understand that energy may be converted from one form to another, but cannot be created or destroyed.</p>



<p>Env.2.3 Recognize and explain that the amount of life any environment can support is limited by the available energy, water, oxygen, nutrients and minerals, and by the ability of ecosystems to recycle organic materials from the remains of dead organisms.</p>	<p>Env.2.3.a.1 Recognize and explain that the amount of life any environment can support is limited by the available energy, water, oxygen, nutrients and minerals, and by the ability of ecosystems to recycle organic materials from the remains of dead organisms.</p>
<p>Env.2.4 Recognize and describe the different sources of energy, including fossil fuels, nuclear, and alternative sources of energy provided by water, wind, geothermal, biomass/biofuels, and the sun.</p>	<p>Env.2.4.a.1 Recognize and describe the different sources of energy, including fossil fuels, nuclear, and alternative sources of energy provided by water, wind, geothermal, biomass/biofuels, and the sun.</p>
<p>Env.2.5 Give examples of the various forms and uses of fossil fuels and nuclear energy in our society.</p>	<p>Env.2.5.a.1 Give examples of the various forms and uses of fossil fuels and nuclear energy in our society.</p>
<p>Env.2.6 Understand and describe how layers of energy-rich organic material have been gradually turned into great coal beds and oil pools by the pressure of the overlying earth. Recognize that by burning these fossil fuels, people are passing stored energy back into the environment as heat and releasing large amounts of matter such as carbon dioxide and other air pollutants.</p>	<p>Env.2.6.a.1 Understand and describe how layers of energy-rich organic material have been gradually turned into great coal beds and oil pools by the pressure of the overlying earth. Recognize that by burning these fossil fuels, people are passing stored energy back into the environment as heat and releasing large amounts of matter such as carbon dioxide and other air pollutants.</p>
<p>Env.2.7 Differentiate between renewable and nonrenewable resources, and compare and contrast the pros and cons of using nonrenewable resources.</p>	<p>Env.2.7.a.1 Differentiate between renewable and nonrenewable resources.</p>
	<p>Env.2.7.a.2 Compare and contrast the pros and cons of using nonrenewable resources.</p>
<p>Env.2.8 Cite examples of how all fuels, renewable and nonrenewable, have advantages and disadvantages that society must question when considering the trade-offs among them, such as how energy use contributes to the rising standard of living in the industrially developing nations. However, explain that this energy use also leads to more rapid depletion of Earth's</p>	<p>Env.2.8.a.1 Cite examples of how all fuels, renewable and nonrenewable, have advantages and disadvantages that society must question when considering the trade-offs among them, such as how energy use contributes to the rising standard of living in the industrially developing nations.</p>



	energy resources and to environmental risks associated with the use of fossil and nuclear fuels.	However, explain that this energy use also leads to more rapid depletion of Earth’s energy resources and to environmental risks associated with the use of fossil and nuclear fuels.
	Env.2.9 Describe how decisions to slow the depletion of energy sources through efficient technologies can be made at many levels, from personal to national, and these technologies involve trade-offs of economic costs and social values.	Env.2.9.a.1 Describe how decisions to slow the depletion of energy sources through efficient technologies can be made at many levels, from personal to national, and these technologies involve trade-offs of economic costs and social values.
	Env.2.10 Understand and describe how nuclear reactions release energy without the combustion products of burning fuels, but that the radioactivity of fuels and by-products poses other risks which may last for thousands of years. Understand and assess the uses of nuclear fission and fusion, including the implications for society.	Env.2.10.a.1 Understand and describe how nuclear reactions release energy without the combustion products of burning fuels, but that the radioactivity of fuels and by-products poses other risks which may last for thousands of years.
		Env.2.10.a.2 Understand and assess the uses of nuclear fission and fusion, including the implications for society.
	Env.2.11 Recognize and describe the role of natural resources in providing the raw materials for an industrial society.	Env.2.11.a.1 Recognize and describe the role of natural resources in providing the raw materials for an industrial society.
Standard 3: Natural Disasters	Env.3.1 Identify and describe geomorphic processes controlled by tectonics (i.e. volcanic activity, uplift, and shaping of landforms).	Env.3.1.a.1 Identify and describe geomorphic processes controlled by tectonics (i.e. volcanic activity, uplift, and shaping of landforms).
	Env.3.2 Identify and describe tornado formation with the use of a weather map.	Env.3.2.a.1 Identify and describe tornado formation with the use of a weather map.
	Env.3.3 Read and describe a weather map in terms of pressure systems, fronts, and changing weather patterns.	Env.3.3.a.1 Read and describe a weather map in terms of pressure systems, fronts, and changing weather patterns.



	<p>Env.3.4 Identify natural Earth hazards, such as earthquakes and hurricanes, and identify the regions in which they occur as well as the short-term and long-term effects on the environment and on people.</p>	<p>Env.3.4.a.1 Identify natural Earth hazards, such as earthquakes and hurricanes, and identify the regions in which they occur as well as the short-term and long-term effects on the environment and on people.</p>
<p>Standard 4: Environmental Policy</p>	<p>Env.4.1 Explain environmental policies/ organizations (Clean Water Act, Clean Air Act, Endangered Species Act, Species Survival Plan, Resource Conservation and Recovery Act, Department of Energy, and the World Health Organization) and identify their impact.</p>	<p>Env.4.1.a.1 Explain environmental policies/ organizations (Clean Water Act, Clean Air Act, Endangered Species Act, Species Survival Plan, Resource Conservation and Recovery Act, Department of Energy, and the World Health Organization) and identify their impact.</p>
	<p>Env.4.2 Understand that environmental policies/decisions have negative and positive impacts on people, societies, and the environment.</p>	<p>Env.4.2.a.1 Understand that environmental policies/decisions have negative and positive impacts on people, societies, and the environment.</p>
<p>Standard 5: Biodiversity</p>	<p>Env.5.1 Explain how variation within a species increases the chances of survival of the species under changing environmental conditions.</p>	<p>Env.5.1.a.1 Explain how variation within a species increases the chances of survival of the species under changing environmental conditions.</p>
	<p>Env.5.2 Explain how the great diversity of species increases the chance that at least some living organisms will survive in the event of major global changes.</p>	<p>Env.5.2.a.1 Explain how the great diversity of species increases the chance that at least some living organisms will survive in the event of major global changes.</p>
	<p>Env.5.3 Explain genetic engineering and identify implications on the environment and society.</p>	<p>Env.5.3.a.1 Explain genetic engineering and identify implications on the environment and society.</p>
	<p>Env.5.4 Describe, provide examples, and contrast GMO products, organic products, and conventional products. Describe and explain the environmental concerns associated with GMOs.</p>	<p>Env.5.4.a.1 Describe, provide examples, and contrast GMO products, organic products, and conventional products.</p> <p>Env.5.4.a.2 Describe and explain the environmental concerns associated with GMOs.</p>



	<p>Env.5.5 Identify the indirect and direct threats to biodiversity (e.g. habitat loss and destruction, invasion by exotic species, commercial over fishing and hunting, pollution, climate change, and bioaccumulation and biomagnification of toxins).</p>	<p>Env.5.5.a.1 Identify the indirect and direct threats to biodiversity (e.g. habitat loss and destruction, invasion by exotic species, commercial over fishing and hunting, pollution, climate change, and bioaccumulation and biomagnification of toxins).</p>
	<p>Env.5.6 Identify and explain the three levels of biodiversity: genetic, species, and ecosystem.</p>	<p>Env.5.6.a.1 Identify and explain the three levels of biodiversity: genetic, species, and ecosystem.</p>
Standard 6: Population	<p>Env.6.1 Demonstrate, calculate, and explain how factors such as birth rate, death rate, and migration rate determine growth rates of populations.</p>	<p>Env.6.1.a.1 Demonstrate, calculate, and explain how factors such as birth rate, death rate, and migration rate determine growth rates of populations.</p>
	<p>Env.6.2 Explain how the size and rate of growth of the human population in any location is affected by economic, political, religious, technological, and environmental (resource availability) factors.</p>	<p>Env.6.2.a.1 Explain how the size and rate of growth of the human population in any location is affected by economic, political, religious, technological, and environmental (resource availability) factors.</p>
	<p>Env.6.3 Describe and give examples about how the decisions of one generation both provide and limit the range of possibilities open to the next generation.</p>	<p>Env.6.3.a.1 Describe and give examples about how the decisions of one generation both provide and limit the range of possibilities open to the next generation.</p>
	<p>Env.6.4 Explain how the carrying capacity of an ecosystem may change as availability of resources changes.</p>	<p>Env.6.4.a.1 Explain how the carrying capacity of an ecosystem may change as availability of resources changes.</p>
Standard 7: Pollution	<p>Env.7.1 Identify evidence, consequences, and prevention for climate change produced by anthropogenic sources.</p>	<p>Env.7.1.a.1 Identify evidence, consequences, and prevention for climate change produced by anthropogenic sources.</p>
	<p>Env.7.2 Differentiate between natural pollution and pollution caused by humans.</p>	<p>Env.7.2.a1 Differentiate between natural pollution and pollution caused by humans.</p>



	<p>Env.7.3 Compare and contrast the effects of environmental stressors (i.e. herbicides, pesticides) on plants and animals. Give examples of secondary effects on other environmental components.</p>	<p>Env.7.3.a.1 Compare and contrast the effects of environmental stressors (i.e. herbicides, pesticides) on plants and animals. Give examples of secondary effects on other environmental components.</p>
	<p>Env.7.4 Explain what common household toxins are, what to do in an emergency, and how to properly dispose.</p>	<p>Env.7.4.a.1 Explain what common household toxins are, what to do in an emergency, and how to properly dispose.</p>
	<p>Env.7.5 Identify and describe the major air pollutants and their sources and impacts on the environment and human health.</p>	<p>Env.7.5.a.1 Identify and describe the major air pollutants and their sources and impacts on the environment and human health.</p>
	<p>Env.7.6 Understand and explain how the burning of fossil fuels releases energy, waste heat, and matter (air pollutants).</p>	<p>Env.7.6.a.1 Understand and explain how the burning of fossil fuels releases energy, waste heat, and matter (air pollutants).</p>
	<p>Env.7.7 Describe and explain the product life cycle and waste stream and its implications to waste management. Explain the difference between reduce, reuse, and recycle.</p>	<p>Env.7.7.a.1 Describe and explain the product life cycle and waste stream and its implications to waste management. Explain the difference between reduce, reuse, and recycle.</p>
Standard 8: Natural and Anthropogenic Resource Cycles	<p>Env.8.1 Demonstrate a knowledge of the distribution of natural resources in the U.S. and the world, and explain how natural resources influence relationships among nations.</p>	<p>Env.8.1.a.1 Demonstrate a knowledge of the distribution of natural resources in the U.S. and the world.</p>
		<p>Env.8.1.a.2 Explain how natural resources influence relationships among nations.</p>
	<p>Env.8.2 Understand and describe the concept of integrated natural resource management and the values of managing natural resources as an ecological unit.</p>	<p>Env.8.2.a.1 Understand and describe the concept of integrated natural resource management and the values of managing natural resources as an ecological unit.</p>
	<p>Env.8.3 Recognize and explain that in evolutionary change, the present arises from the materials of the past and in ways that can be explained, such as the formation of soil from rocks and dead organic matter.</p>	<p>Env.8.3.a.1 Recognize and explain that in evolutionary change, the present arises from the materials of the past and in ways that can be explained, such as the</p>



		formation of soil from rocks and dead organic matter.
Env.8.4 Describe how agricultural technology requires trade-offs between increased production and environmental harm and between efficient production and social values.	Env.8.4.a.1 Describe how agricultural technology requires trade-offs between increased production and environmental harm and between efficient production and social values.	
Env.8.5 Describe and examine how water is controlled in developed and undeveloped nations.	Env.8.5.a.1 Describe and examine how water is controlled in developed nations.	
	Env.8.5.a.2 Describe and examine how water is controlled in undeveloped nations.	
Env.8.6 Understand and describe the concept and the importance of natural and human recycling in conserving our natural resources.	Env.8.6.a.1 Understand and describe the concept and the importance of natural and human recycling in conserving our natural resources.	
Env.8.7 Understand and explain that waste management includes considerations of quantity, safety, degradability, and cost. Also understand that waste management requires social and technological innovations because waste-disposal problems are political and economic as well as technical.	Env.8.7.a.1 Understand and explain that waste management includes considerations of quantity, safety, degradability, and cost. Also understand that waste management requires social and technological innovations because waste-disposal problems are political and economic as well as technical.	



Science and Engineering Process Standards (SEPS)

The Science and Engineering Process Standards are the processes and skills that students are expected to learn and be able to do within the context of the science content. The separation of the Science and Engineering Process Standards from the Content Standards is intentional; the separation of the standards explicitly shows that what students are doing while learning science is extremely important. The Process Standards reflect the way in which students are learning and doing science and are designed to work in tandem with the science content, resulting in robust instructional practice.

Science and Engineering Process Standards (SEPS)		Content Connector
<p>SEPS.1 Posing questions (for science) and defining problems (for engineering)</p>	<p>A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.</p>	<p>A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.</p>



Science and Engineering Process Standards (SEPS)	Content Connector
<p>SEPS.2 Developing and using models and tools</p> <p>A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models.</p> <p>Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.</p>	<p>A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models.</p> <p>Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.</p>



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Science and Engineering Process Standards (SEPS)	Content Connector
<p>SEPS.3 Constructing and performing investigations</p>	<p>Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.</p>



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Science and Engineering Process Standards (SEPS)	Content Connector
<p>SEPS.4 Analyzing and interpreting data</p> <p>Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: “Does this make sense?” “Could my results be duplicated?” and/or “Does the design solve the problem with the given constraints?”</p>	<p>Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: “Does this make sense?” “Could my results be duplicated?” and/or “Does the design solve the problem with the given constraints?”</p>



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Science and Engineering Process Standards (SEPS)	Content Connector
<p>SEPS.5 Using mathematics and computational thinking</p>	<p>In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p>
<p>SEPS.6 Constructing explanations (for science) and designing solutions (for engineering)</p>	<p>Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.</p>



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Science and Engineering Process Standards (SEPS)	Content Connector
<p>SEPS.7 Engaging in argument from evidence</p>	<p>Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.</p>
<p>SEPS.8 Obtaining, evaluating, and communicating information</p>	<p>Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.</p>



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Content Standards

For the high school science courses, the content standards are organized around the core ideas in each particular course. Within each core idea are indicators which serve as the more detailed expectations within each of the content areas.

Indiana Biology Content Connectors		
	Indiana Academic Standard	Content Connector
Standard 1: Cellular Structure and Function	<p>B.1.1 Compare and contrast the shape and function of the essential biological macromolecules (i.e. carbohydrates, lipids, proteins, and nucleic acids), as well as, how chemical elements (i.e. carbon, hydrogen, oxygen, nitrogen, phosphorus, and sulfur) can combine to form these biomolecules.</p>	<p>B.1.1.a.1 Compare and contrast the shape and function of the essential biological macromolecules (i.e., carbohydrates, lipids, proteins, and nucleic acids).</p>
		<p>B.1.1.a.2 Describe how chemical elements (i.e., carbon, hydrogen, oxygen, nitrogen, phosphorus, and sulfur) can combine to form biomolecules (i.e., carbohydrates, lipids, proteins, and nucleic acids).</p>
	<p>B.1.2 Analyze how the shape of a molecule determines its role in the many different types of cellular processes (e.g., metabolism, homeostasis, growth and development, and heredity) and understand that the majority of these processes involve proteins that act as enzymes.</p>	
	<p>B.1.3 Develop and use models that illustrate how a cell membrane regulates the uptake of materials essential for growth and survival while removing or preventing harmful waste materials from accumulating through the processes of active and passive transport.</p>	<p>B.1.3.a.1 Refer to a model to explain how a cell membrane functions.</p>



Indiana Biology Content Connectors		
	<p>B.1.4 Develop and use models to illustrate how specialized structures within cells (i.e. nuclei, ribosomes, Golgi, endoplasmic reticulum) interact to produce, modify, and transport proteins.</p>	<p>B.1.4.a.1 Use a model to describe the specialized structures within cells (i.e. nuclei, ribosomes, Golgi, endoplasmic reticulum).</p>
	<p>B.1.5 Develop and use a model to illustrate the hierarchical organization of interacting systems (cell, tissue, organ, organ system) that provide specific functions within multicellular organisms.</p>	<p>B.1.5.a.1 Use a model to describe the organization of interacting systems (cell, tissue, organ, organ system) that provide specific functions within multicellular organisms.</p>

	Indiana Academic Standard	Content Connector
Standard 2: Matter Cycles and Energy Transfer	<p>B.2.1 Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.</p>	
	<p>B.2.2 Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.</p>	<p>B.2.2.a.1 Use a model to describe how cellular respiration results in a net transfer of energy.</p>
	<p>B.2.3 Use mathematical and/or computational representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.</p>	<p>B.2.3.a.1 Use visual representations to demonstrate the cycling of matter and flow of energy among organisms in an ecosystem.</p>
	<p>B.2.4 Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.</p>	<p>B.2.4.a.1 Describe the role of photosynthesis and cellular respiration in the carbon cycle.</p>



	Indiana Academic Standard	Content Connector
Standard 3: Interdependence	B.3.1 Use mathematical and/or computational representation to explain why the carrying capacity ecosystems can support is limited by the available energy, water, oxygen, and minerals and by the ability of ecosystems to recycle the remains of dead organisms.	B.3.1.a.1 Explain how given resources (energy, water, oxygen, and minerals) place limits on an ecosystem's population.
	B.3.2 Design, evaluate, and refine a model which shows how human activities and natural phenomena can change the flow of matter and energy in an ecosystem and how those changes impact the environment and biodiversity of populations in ecosystems of different scales, as well as, how these human impacts can be reduced.	B.3.2.a.1 Demonstrate how human activities and natural phenomena can change the flow of matter and energy in an ecosystem.
		B.3.2.a.2 Identify how human activities and natural phenomena impact the environment and biodiversity of populations in ecosystems.
		B.3.2.a.3 Describe how human impact on ecosystems can be reduced.
B.3.3 Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, and identify the impact of changing conditions or introducing non-native species into that ecosystem.		



	Indiana Academic Standard	Content Connector
Standard 4: Inheritance and Variation in Traits	B.4.1 Develop and revise a model that clarifies the relationship between DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.	B.4.1.a.1 Describe how DNA and chromosomes influence traits passed from parents to offspring.
	B.4.2 Construct an explanation for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells.	B.4.2.a.1 Explain how the structure of DNA determines the structure of proteins that carry out essential functions of life through systems of specialized cells.
	B.4.3 Construct a model to explain that the unique shape and function of each protein is determined by the sequence of its amino acids, and thus is determined by the sequence of the DNA that codes for this protein.	B.4.3.a.1 Model the primary structure of protein as determined by the sequence of its amino acids and DNA codes.
	B.4.4 Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.	B.4.4.a.1 Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.
	B.4.5 Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and (3) mutations caused by environmental factors.	
	B.4.6 Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.	



	Indiana Academic Standard	Content Connector
Standard 5: Evolution	<p>B.5.1 Evaluate anatomical and molecular evidence to provide an explanation of how organisms are classified and named based on their evolutionary relationships into taxonomic categories.</p>	<p>B.5.1.a.1 Describe how organisms are named and classified (e.g., taxonomic categories based on evolutionary relationships).</p>
	<p>B.5.2 Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence including both anatomical and molecular evidence.</p>	
	<p>B.5.3 Apply concepts of statistics and probability to support a claim that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.</p>	
	<p>B.5.4 Evaluate evidence to explain the role of natural selection as an evolutionary mechanism that leads to the adaptation of species, and to support claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and/or (3) the extinction of other species.</p>	<p>B.5.4.a.1 Explain the role of natural selection in adaptation of species.</p>
		<p>B.5.4.a.2 Describe how environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and/or (3) the extinction of other species.</p>
<p>B.5.5 Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.</p>	<p>B.5.5.a.1 Describe the four primary factors affecting evolution: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.</p>	



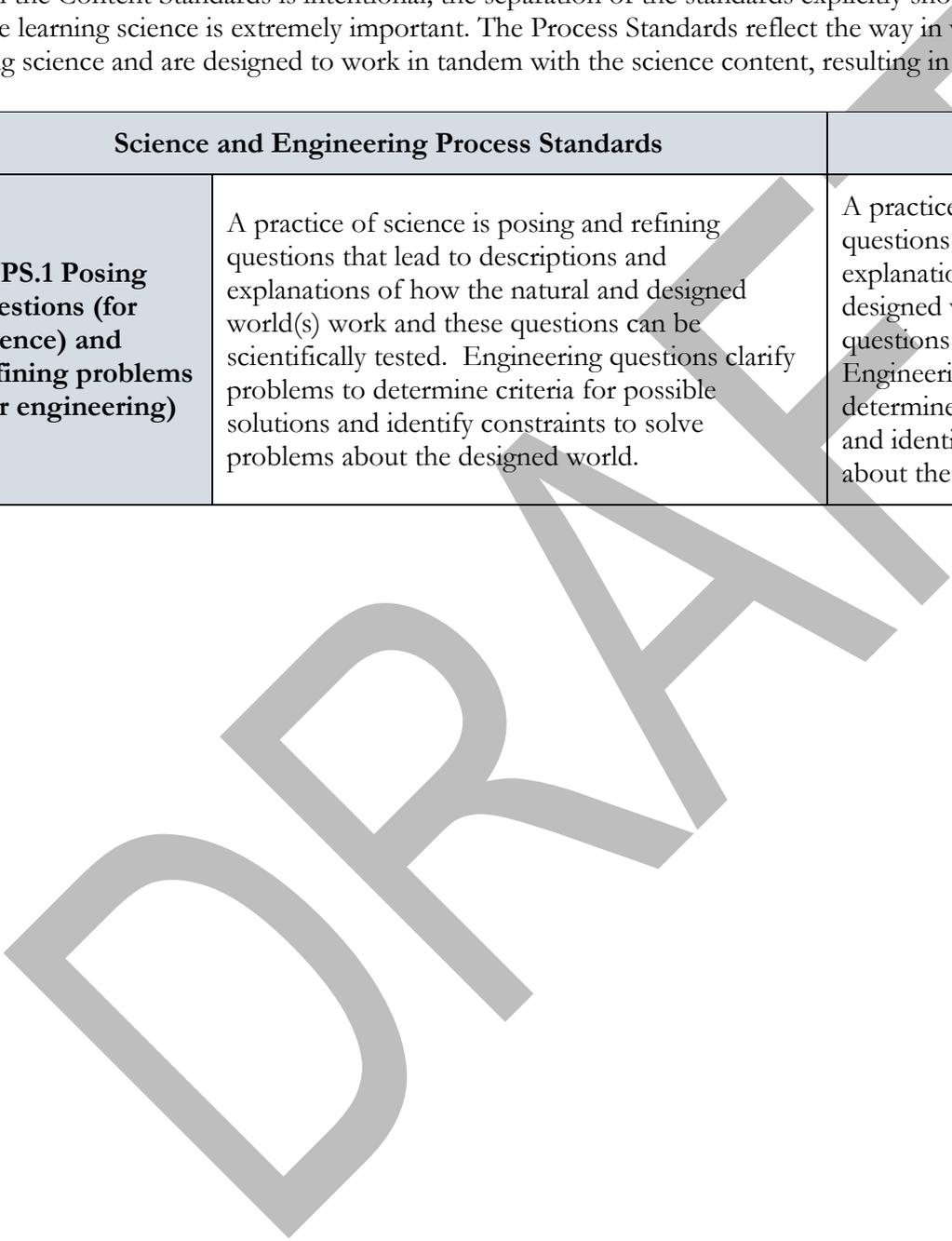
	<p>B.5.6 Analyze and interpret data for patterns in the fossil record and molecular data that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.</p>	
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Science and Engineering Process Standards (SEPS)

The Science and Engineering Process Standards are the processes and skills that students are expected to learn and be able to do within the context of the science content. The separation of the Science and Engineering Process Standards from the Content Standards is intentional; the separation of the standards explicitly shows that what students are doing while learning science is extremely important. The Process Standards reflect the way in which students are learning and doing science and are designed to work in tandem with the science content, resulting in robust instructional practice.

Science and Engineering Process Standards		Content Connectors
<p>SEPS.1 Posing questions (for science) and defining problems (for engineering)</p>	<p>A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.</p>	<p>A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.</p>



SEPS.2
Developing and
using models and
tools

A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models.

Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.

A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models.

Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.

<p>SEPS.3 Constructing and performing investigations</p>	<p>Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.</p>	<p>Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.</p>
<p>SEPS.4 Analyzing and interpreting data</p>	<p>Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: “Does this make sense?” “Could my results be duplicated?” and/or “Does the design solve the problem with the given constraints?”</p>	<p>Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: “Does this make sense?” “Could my results be duplicated?” and/or “Does the design solve the problem with the given constraints?”</p>

<p>SEPS.5 Using mathematics and computational thinking</p>	<p>In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p>	<p>In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p>
<p>SEPS.6 Constructing explanations (for science) and designing solutions (for engineering)</p>	<p>Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.</p>	<p>Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.</p>

<p>SEPS.7 Engaging in argument from evidence</p>	<p>Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.</p>	<p>Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.</p>
<p>SEPS.8 Obtaining, evaluating, and communicating information</p>	<p>Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.</p>	<p>Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.</p>

Content Standards

For the high school science courses, the content standards are organized around the core ideas in each particular course. Within each core idea are indicators which serve as the more detailed expectations within each of the content areas.

Indiana Earth and Space Science		Content Connectors
<p>Standard 1: The</p>	<p>ES.1.1 Construct an explanation detailing how space can be studied by observing all frequencies of the</p>	<p>ES.1.1.a.1 Construct an explanation detailing how space can be studied by observing all frequencies of</p>

	electromagnetic radiation with differentiated telescopes and observational tools.	the electromagnetic radiation with differentiated telescopes and observational tools.
	ES.1.2 Describe the expanding universe theory, also known as the "Big Bang Theory," based on observed astronomical evidence including: The Doppler Effect, red shift, Hubble's Law, and the cosmic microwave background.	ES.1.2.a.1 Describe the expanding universe theory, also known as the "Big Bang Theory," based on observed astronomical evidence including: The Doppler Effect, red shift, Hubble's Law, and the cosmic microwave background.
	ES.1.3 Create a diagram, flowchart, or written explanation that details the cooling of energy into protons and early elements, and early elements into superstars and galaxies. Explain the role of gravitational attraction in the formation of stars and galaxies from clouds of these early elements.	ES.1.3.a.1 Create a diagram, flowchart, or written explanation that details the cooling of energy into protons and early elements, and early elements into superstars and galaxies.
		ES.1.3.a.2 Explain the role of gravitational attraction in the formation of stars and galaxies from clouds of these early elements.
	ES.1.4 Differentiate between the life cycles of stars of different masses found on the Hertzsprung-Russell Diagram. Differentiate between low, medium (including our sun), and high mass stars by what elements can be produced, and therefore whether or not they can achieve red giant phase or go supernova.	ES.1.4.a.1 Differentiate between the life cycles of stars of different masses found on the Hertzsprung-Russell Diagram. Differentiate between low, medium (including our sun), and high mass stars by what elements can be produced, and therefore whether or not they can achieve red giant phase or go supernova.
	ES.1.5 Illustrate the hierarchical relationship and scales of stars, planetary systems including multiple-star systems, star clusters, galaxies, and galactic groups in the universe.	ES.1.5.a.1 Illustrate the hierarchical relationship and scales of stars, planetary systems including multiple-star systems, star clusters, galaxies, and galactic groups in the universe.
Standard 2: The Solar System	ES.2.1 Construct a flowchart with diagrams and descriptions outlining the nebular theory of solar system formation. Include the formation of one or more stars, planetesimals, protoplanets, Jovian and terrestrial planets, and other objects including satellites and small bodies.	ES.2.1.a.1 Construct a flowchart with diagrams and descriptions outlining the nebular theory of solar system formation. Include the formation of one or more stars, planetesimals, protoplanets, Jovian and terrestrial planets, and other objects including satellites and small bodies.
	ES.2.2 Describe the characteristics of the various kinds of objects in the solar system including planets,	ES.2.2.a.1 Describe the characteristics of the various kinds of objects in the solar system

<p>satellites, comets, asteroids, and protoplanets. Recognize that planets have been identified orbiting stars other than the sun, or exist outside of solar systems orbiting no sun at all. Describe the organization of our solar system including terrestrial and Jovian planets, asteroid belts, and the Oort Cloud.</p>	<p>including planets, satellites, comets, asteroids, and protoplanets.</p>
<p>ES.2.3 Develop a model illustrating the layers and life span of the sun. Explain how nuclear fusion in the core produces elements and energy, which are both retained through convection and released to space, including Earth, through radiation. Additionally, elements heavier than iron cannot form in stars, and form only as a result of supernovae.</p>	<p>ES.2.2 .a.2 Describe the organization of our solar system including terrestrial and Jovian planets, asteroid belts, and the Oort Cloud.</p> <p>ES.2.2.a.3 Recognize that planets have been identified orbiting stars other than the sun, or exist outside of solar systems orbiting no sun at all.</p> <p>ES.2.3.a.1 Develop a model illustrating the layers and life span of the sun.</p> <p>ES.2.3.a.2 Explain how nuclear fusion in the core of the sun produces elements and energy, which are both retained through convection and released to space, including Earth, through radiation.</p>
<p>ES.2.4 Use mathematical and/or computational representations to demonstrate the motions of the various kinds of objects in our solar system including planets, satellites, comets, and asteroids. Explain that Kepler’s Laws determine the orbits of those objects and know that Kepler’s Laws are a direct consequence of Newton’s Law of Universal Gravitation together with his laws of motion.</p>	<p>ES.2.4.a.1 Use mathematical and/or computational representations to demonstrate the motions of the various kinds of objects in our solar system including planets, satellites, comets, and asteroids.</p> <p>Explain that Kepler’s Laws determine the orbits of those objects and know that Kepler’s Laws are a direct consequence of Newton’s Law of Universal Gravitation together with his laws of motion.</p>
<p>ES.2.5 Explain how scientific theory changes over time with the introduction of new information and observational data. Use works from ancient Greeks such as Ptolemy, and other astronomers including Copernicus, Brahe, Kepler, and Galileo to demonstrate the effect of observational data and scientific discussion on our understanding of the mechanics and motion of our solar system.</p>	<p>ES.2.5.a.1 Explain how scientific theory changes over time with the introduction of new information and observational data. Use works from ancient Greeks such as Ptolemy, and other astronomers including Copernicus, Brahe, Kepler, and Galileo to demonstrate the effect of observational data and scientific discussion on our understanding of the mechanics and motion of our solar system.</p>

Standard 3: Earth Cycles and Systems	<p>ES.3.1 Create flowcharts that show the exchange of carbon and oxygen between the lithosphere, hydrosphere, biosphere, and atmosphere, including carbon dioxide and methane. Explain how human activities such as farming and industry, temperature change in oceans, and natural processes such as volcanic eruptions can speed or slow the cycling from reservoirs within the solid earth and oceans into the atmosphere.</p>	<p>ES.3.1.a.1 Create flowcharts that show the exchange of carbon and oxygen between the lithosphere, hydrosphere, biosphere, and atmosphere, including carbon dioxide and methane.</p>
		<p>ES.3.1.a.2 Explain how human activities such as farming and industry, temperature change in oceans, and natural processes such as volcanic eruptions can speed or slow the cycling from reservoirs within the solid earth and oceans into the atmosphere.</p>
	<p>ES.3.2 Create diagrams and flowcharts that show the cycling between the lithosphere, hydrosphere, biosphere, and atmosphere for nitrogen. Complete the same for phosphorus, excluding the atmosphere. Explain how human activities can alter the amounts of both phosphorus and nitrogen between these layers.</p>	<p>ES.3.2.a.1 Create diagrams and flowcharts that show the cycling between the lithosphere, hydrosphere, biosphere, and atmosphere for nitrogen. Complete the same for phosphorus, excluding the atmosphere.</p>
		<p>ES.3.2.a.2 Explain how human activities can alter the amounts of both phosphorus and nitrogen between the lithosphere, hydrosphere, biosphere, and atmosphere.</p>
	<p>ES.3.3 Analyze and explain how events on one side of the world can alter temperature and precipitation around the globe. Analyze and explain the possible effects of natural and human-driven processes on our atmosphere and climate.</p>	<p>ES.3.3.a.1 Analyze and explain how events on one side of the world can alter temperature and precipitation around the globe.</p>
		<p>ES.3.3.a.2 Analyze and explain the possible effects of natural and human-driven processes on our atmosphere and climate.</p>
	<p>ES.3.4 Evaluate the use of sustainable versus nonrenewable resources. Explain the consequences of overuse and continued increased consumption of limited resources. Analyze and evaluate the benefits of researching, designing, and developing sustainable resources for private use and industry.</p>	<p>ES.3.4.a.1 Evaluate the use of sustainable versus nonrenewable resources. Explain the consequences of overuse and continued increased consumption of limited resources.</p>
		<p>ES.3.4.a.2 Analyze and evaluate the benefits of researching, designing, and developing sustainable resources for private use and industry.</p>
Standard 4: The	<p>ES.4.1 Create a model that shows the composition, distribution, and circulation of gases in Earth's atmosphere. Show how carbon and oxygen cycles</p>	<p>ES.4.1.a.1 Create a model that shows the composition, distribution, and circulation of gases in Earth's atmosphere. Show how carbon and oxygen</p>

<p>affect the composition through gas exchange with organisms, oceans, the solid earth, and industry.</p>	<p>cycles affect the composition through gas exchange with organisms, oceans, the solid earth, and industry.</p>
<p>ES.4.2 Create models to demonstrate the circulation, retention, and reflection of heat in regards to the atmosphere, solid land, and bodies of water including lakes and oceans. Demonstrate the effects of cities, various terrain, cloud cover, sea ice, and open water on albedo. Examine local and global heat exchanges, including land & sea breezes, lake effects, urban heat islands, and thermohaline circulation.</p>	<p>ES.4.2.a.1 Create models to demonstrate the circulation, retention, and reflection of heat in regard to the atmosphere, solid land, and bodies of water including lakes and oceans. Demonstrate the effects of cities, various terrain, cloud cover, sea ice, and open water on albedo. Examine local and global heat exchanges, including land & sea breezes, lake effects, urban heat islands, and thermohaline circulation.</p>
<p>ES.4.3 Create a presentation that demonstrates the process of the water cycle on both local and global scales. Illustrate the process of water cycling both from the solid earth to the atmosphere and around the solid earth. Examine the interaction of ground water, surface water, and ocean circulation. Illustrate the effects of human activity on water systems.</p>	<p>ES.4.3.a.1 Create a presentation that demonstrates the process of the water cycle on both local and global scales. Illustrate the process of water cycling both from the solid earth to the atmosphere and around the solid earth.</p> <p>ES.4.3.a.2 Examine the interaction of ground water, surface water, and ocean circulation. Illustrate the effects of human activity on water systems.</p>
<p>ES.4.4 Create a model to demonstrate how the Coriolis Effect influences the global circulation of the atmosphere. Explain how changes in the circulation of the atmosphere and oceans can create events such as El Niño and La Niña.</p>	<p>ES.4.4.a.1 Create a model to demonstrate how the Coriolis Effect influences the global circulation of the atmosphere. Explain how changes in the circulation of the atmosphere and oceans can create events such as El Niño and La Niña.</p>
<p>ES.4.5 Chart and explain the changes in weather as it relates to humidity, air pressure, and temperature. Explain how these factors result in local wind patterns and cloud cover. Explain the origin, life cycle, and behavior of weather systems, especially severe weather. Create an emergency plan for severe storms, both summer and winter.</p>	<p>ES.4.5.a.1 Chart and explain the changes in weather as it relates to humidity, air pressure, and temperature. Explain how these factors result in local wind patterns and cloud cover.</p> <p>ES.4.5.a.2 Explain the origin, life cycle, and behavior of weather systems, especially severe weather.</p> <p>ES.4.5.a.3 Create an emergency plan for severe storms, both summer and winter.</p>

Standard 4: Earth and Space Science	<p>ES.4.6 Differentiate between weather and climate. Examine long term, natural climate change and periods of glaciation as influenced by Milankovitch Cycles due to the gravity of other solar system bodies (obliquity and precession of axis and eccentricity of orbit). Explain how these are different from any short term (less than thousands of years) changes to climate.</p>	<p>ES.4.6.a.1 Differentiate between weather and climate.</p>
		<p>ES.4.6.a.2 Examine long term, natural climate change and periods of glaciation as influenced by Milankovitch Cycles due to the gravity of other solar system bodies (obliquity and precession of axis and eccentricity of orbit). Explain how these are different from any short term (less than thousands of years) changes to climate.</p>
	<p>ES.4.7 Create diagrams or models to demonstrate the effect of the gravitational pull of the sun and moon on Earth's oceans. Explain the difference between daily (high and low) tides and monthly (spring and neap) tides. Explain how monthly tides relate to the revolution of the moon, and therefore, its phases.</p>	<p>ES.4.7.a.1 Explain the difference between daily (high and low) tides and monthly (spring and neap) tides.</p>
		<p>ES.4.7.a.2 Create diagrams or models to demonstrate the effect of the gravitational pull of the sun and moon on Earth's oceans.</p>
		<p>ES.4.7.a.3 Explain how monthly tides relate to the revolution of the moon, and therefore, its phases.</p>

Standard 5: The Solid Earth	<p>ES.5.1 Construct a lab to analyze minerals based on their physical and chemical properties. Explain how rocks may contain many minerals, one mineral, or no minerals, and minerals can be made of either single elements (such as gold) or compounds (such as silicates).</p>	<p>ES.5.1.a.1 Construct a lab to analyze minerals based on their physical and chemical properties. Explain how rocks may contain many minerals, one mineral, or no minerals, and minerals can be made of either single elements (such as gold) or compounds (such as silicates).</p>
	<p>ES.5.2 Create a rock cycle flowchart or diagram that demonstrates the processes involved in the formation, breakdown, and reformation of igneous, sedimentary, and metamorphic rock. Show how each type can melt and reform igneous rock, undergo the various metamorphic processes, and undergo physical and chemical weathering to form sedimentary rock.</p>	<p>ES.5.2.a.1 Create a rock cycle flowchart or diagram that demonstrates the processes involved in the formation, breakdown, and reformation of igneous, sedimentary, and metamorphic rock. Show how each type can melt and reform igneous rock, undergo the various metamorphic processes, and undergo physical and chemical weathering to form sedimentary rock.</p>
	<p>ES.5.3 Construct a model that demonstrates the difference between weathering, erosion, transportation of material, deposition, and new soil</p>	<p>ES.5.3.a.1 Construct a model that demonstrates the difference between weathering, erosion, transportation of material, deposition, and new soil</p>

	and sedimentary rock formation. Differentiate between types of physical and chemical weathering.	and sedimentary rock formation. Differentiate between types of physical and chemical weathering.
	<p>ES.5.4 Differentiate between relative and absolute geological time. Detail how sedimentary rock can be dated based on relative-age dating and positioning, while igneous formations can be radiometrically dated. Differentiate between radiocarbon dating used for organic materials and other types of radiometric dating for inorganic rock formation.</p>	<p>ES.5.4.a.1 Differentiate between relative and absolute geological time.</p>
		<p>ES.5.4.a.2 Detail how sedimentary rock can be dated based on relative-age dating and positioning, while igneous formations can be radiometrically dated.</p>
		<p>ES.5.4.a.3 Differentiate between radiocarbon dating used for organic materials and other types of radiometric dating for inorganic rock formation.</p>
	<p>ES.5.5 Create a timeline detailing the processes that have occurred in Indiana to create mostly sedimentary bedrock. Explain how changing sea levels, climate, and glaciation have shaped Indiana geology.</p>	<p>ES.5.5.a.1 Create a timeline detailing the processes that have occurred in Indiana to create mostly sedimentary bedrock. Explain how changing sea levels, climate, and glaciation have shaped Indiana geology.</p>
	<p>ES.5.6 Create models or diagrams to show how plate movement and sea level changes have changed continental land masses over time. Include the creation and destruction of inland seas, sedimentary rock formations including evaporites and biochemical formations, and the shaping and destruction of surface features.</p>	<p>ES.5.6.a.1 Create models or diagrams to show how plate movement and sea level changes have changed continental land masses over time. Include the creation and destruction of inland seas, sedimentary rock formations including evaporites and biochemical formations, and the shaping and destruction of surface features.</p>

Standard 6: Earth Processes	<p>ES.6.1 Construct a diagram or model that identifies and describes the physical and chemical properties of the crust, mantle, outer core, and inner core of Earth.</p>	<p>ES.6.1.a.1 Construct a diagram or model that identifies and describes the physical and chemical properties of the crust, mantle, outer core, and inner core of Earth.</p>
	<p>ES.6.2 Explain how Earth's fluid outer core creates the magnetosphere and how this helps protect both</p>	<p>ES.6.2.a.1 Explain how Earth's fluid outer core creates the magnetosphere.</p>

<p>humans and technology (such as satellites) from solar winds.</p>	<p>ES.6.2.a.2 Explain how the magnetosphere helps protect both humans and technology (such as satellites) from solar winds.</p>
<p>ES.6.3 Construct a diagram and explanation showing the convection of Earth's mantle and its impact on the movements of tectonic plates. Explain how the decay of radioactive isotopes and residual energy from Earth's original formation provide the heat to fuel this convective process, which, along with ridge push and slab pull, drive the movements of tectonic plates.</p>	<p>ES.6.3.a.1 Construct a diagram and explanation showing the convection of Earth's mantle and its impact on the movements of tectonic plates.</p>
	<p>ES.6.3.a.2 Explain how the decay of radioactive isotopes and residual energy from Earth's original formation provide the heat to fuel this convective process, which, along with ridge push and slab pull, drive the movements of tectonic plates.</p>
<p>ES.6.4 Create a timeline to show the development of modern tectonic plate theory. Identify and explain how the evidence from the theory of continental drift, seafloor spreading, and paleomagnetism built upon each other to support tectonic plate theory.</p>	<p>ES.6.4.a.1 Create a timeline to show the development of modern tectonic plate theory. Identify and explain how the evidence from the theory of continental drift, seafloor spreading, and paleomagnetism built upon each other to support tectonic plate theory.</p>
<p>ES.6.5 Create models that demonstrate different types of orogeny resulting from plate tectonics. Show how the interactions between oceanic and continental plates create different geological features (such as volcanic island arcs or high altitude plateaus) depending on what types of plates are involved in the motions along different plate boundaries.</p>	<p>ES.6.5.a.1 Create models that demonstrate different types of orogeny resulting from plate tectonics. Show how the interactions between oceanic and continental plates create different geological features (such as volcanic island arcs or high altitude plateaus) depending on what types of plates are involved in the motions along different plate boundaries.</p>
<p>ES.6.6 Create models and differentiate between shield, composite, and cinder cone volcanoes. Explain how volcanoes form, how the chemical composition of lava affects the type of volcanoes formed, and how the location (such as hot spots or along continental or oceanic margins) can affect the types of magma present.</p>	<p>ES.6.6.a.1 Create models and differentiate between shield, composite, and cinder cone volcanoes. Explain how volcanoes form, how the chemical composition of lava affects the type of volcanoes formed, and how the location (such as hot spots or along continental or oceanic margins) can affect the types of magma present.</p>
<p>ES.6.7 Use models, diagrams, and captions to explain how tectonic motion creates earthquakes and tsunamis. Using resources such as indianamap.org,</p>	<p>ES.6.7.a.1 Use models, diagrams, and captions to explain how tectonic motion creates earthquakes and tsunamis.</p>

	analyze how close the school is to known faults and liquefaction potential. Differentiate between intraplate fault zones such as the Wabash Valley Fault System and the more commonly discussed faults along tectonic margins.	ES.6.7.a.2 Using resources such as indianamap.org, analyze how close the school is to known faults and liquefaction potential.
		ES.6.7.a.3 Differentiate between intraplate fault zones such as the Wabash Valley Fault System and the more commonly discussed faults along tectonic margins.
	ES.6.8 Create an action plan detailing what to do in an emergency if an earthquake occurred near the school or home. Detail what should be kept in an earthquake preparation kit, how to prepare homes for earthquake safety, and what actions should be taken during and after an earthquake to ensure personal safety.	ES.6.8.a.1 Create an action plan detailing what to do in an emergency if an earthquake occurred near the school or home. Detail what should be kept in an earthquake preparation kit, how to prepare homes for earthquake safety, and what actions should be taken during and after an earthquake to ensure personal safety.

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Dr. Jennifer McCormick
Superintendent of Public Instruction

Working Together for Student Success

GRADE 3: The Local Community and Regional Communities

Subject/Course 0470 Level 3

Through active learning experiences, third grade students gain knowledge and process information about their local community from a variety of resources. They identify important historical events, places, and persons from the past and make connections with their present community. Third grade students explore their own community, including its: (1) geographic location, (2) human and material resources, (3) major work and services, and (4) basic beliefs and values. Students begin to understand other communities in the state and the world through simple comparative studies. For third graders, the study of history emphasizes continuity and change. Concepts of time and space should unfold through such direct experiences as historic role playing, interviews, and the construction of simple maps and charts. Through group work and projects, students should increase communications and decision-making skills and build civic values relating to responsible community citizenship. Skills to receive special emphasis include: (1) using cardinal and intermediate directions and common map symbols; (2) locating their community, major land and water forms, and reference points on maps and globes; (3) making simple generalizations about change, both past and future, and the influence of geographic relationships; (4) giving examples of the diversity of goods and services; (5) exploring the heritage of their own and selected communities; and (6) demonstrating responsible decision-making and citizenship skills.

The Indiana's K – 8 academic standards for social studies are organized around four content areas. The content area standards and the types of learning experiences they provide to students in Grade 3 are described below. On the pages that follow, age-appropriate concepts are listed for each standard. Skills for thinking, inquiry and participation are integrated throughout.

Standard 1 — History

Students describe how significant people, events and developments have shaped their own community and region; compare their community to other communities in the region in other times and places; and use a variety of resources to gather information about the past.

Standard 2 — Civics and Government

Students explain what it means to be citizens of their community, state and nation; be able to identify the functions and major services provided by local governments; use a variety of resources to gather information about local, state and national governments; and demonstrate understanding of democratic principles and practices.

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Standard 3 — Geography

Students explain that simple grid systems (latitude and longitude) are used to locate places on maps and globes, begin to understand the Earth/sun relationship, identify the distinctive physical and cultural features of their community, explain the geographic relationships between their own community and the state and other states within the region, and compare the geographic characteristics of their own community with communities in other parts of the world.

Standard 4 — Economics

Students explain how people in the local community make choices about using goods, services and productive

Social Studies Grade 3

Standard 1 History

Students describe how significant people, events and developments have shaped their own community and region; compare their community to other communities in the region in other times and places; and use a variety of resources to gather information about the past.

Historical Knowledge

Indiana Academic Standards	Content Connectors
<p>3.1.1: Identify and describe Native American Woodland Indians who lived in the region when European settlers arrived. Example: Miami, Shawnee, Kickapoo, Algonquian, Delaware, Potawatomi and Wyandotte</p> <p>http://www.connerprairie.org/Learn-And-Do/Indiana-History/America-1800-1860/Native-Americans-In-America.aspx</p>	<p>3.1.1a.1: Identify Native American Woodland Indians who lived in the region when European settlers arrived. Example: Miami, Shawnee, Kickapoo, Algonquian, Delaware, Potawatomi and Wyandotte</p> <p>http://www.connerprairie.org/Learn-And-Do/Indiana-History/America-1800-1860/Native-Americans-In-America.aspx</p>
<p>3.1.2: Explain why and how the local community was established and identify its founders and early settlers.</p>	<p>3.1.2.a.1: Identify founders and early settlers of the local community.</p>
<p>3.1.3: Describe the role of the local community and other communities in the development of the state’s regions. Example: Fort Wayne was an early trade center because of the convergence of three rivers in the area. Moving the state capitol to Indianapolis encouraged growth in the central region of Indiana.</p>	<p>3.1.3.a.1 Recognize the development of your local community and its effect on the state’s regions. Example: Fort Wayne was an early trade center because of the convergence of three rivers in the area. Moving the state capitol to Indianapolis encouraged growth in the central region of Indiana.</p>
<p>3.1.4: Give examples of people, events and developments that brought important changes to your community and the region where your community is located. Example: Developments in transportation, such as the building of canals, roads and railroads, connected communities and caused changes in population or industry.</p>	<p>3.1.4.a.1: Give examples of people, events and developments that brought important changes to your community and the region where your community is located. Example: Developments in transportation, such as the building of canals, roads and railroads, connected communities and caused changes in population or industry.</p>

Chronological Thinking, Historical Comprehension, Analysis and Interpretation, Research

Indiana Academic Standards	Content Connectors
<p>3.1.5: Create simple timelines that identify important events in various regions of the state.</p>	<p>3.1.5.a.1: Create simple timelines that identify important events in various regions of the state.</p>
<p>3.1.6: Use a variety of resources to gather information about your region’s communities; identify factors that make the region unique, including cultural diversity, industry, the arts and architecture. Example: Libraries, museums, county historians, chambers of commerce, Web sites, and digital newspapers and archives</p>	<p>3.1.6.a.1: Identify resources that make your community and region unique. Example: Libraries, museums, county historians, chambers of commerce</p>
<p>3.1.7: Distinguish between fact and fiction in historical accounts by comparing documentary sources on historical figures and events with fictional characters and events in stories. Example: Compare fictional accounts of the exploits of George Washington and John Chapman (Johnny Appleseed) with historical accounts; Compare a piece of historical fiction about Abraham Lincoln or Harriet Tubman with a primary source</p>	<p>3.1.7.a.1: Distinguish between fact and fiction in a historical account. Example: Compare fictional accounts of the exploits of George Washington and John Chapman (Johnny Appleseed) with historical accounts; Compare a piece of historical fiction about Abraham Lincoln or Harriet Tubman with a primary source</p>
<p>3.1.8: Describe how your community has changed over time and how it has stayed the same. Example: Shawnee villages in Southern Indiana and Conner Prairie settlement</p>	<p>3.1.8.a.1: Describe how your community has changed over time and how it has stayed the same. Example: Shawnee villages in Southern Indiana and Conner Prairie settlement</p>
<p>3.1.9: Define immigration and explain how immigration enriches community.</p>	<p>3.1.9.a.1: Define immigration.</p>

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Indiana Academic Standards	Content Connectors
<ul style="list-style-type: none"> We are a nation of immigrants; we have been heavily influenced by immigration since before the Revolutionary War E pluribus unum (out of many, one) http://greatseal.com/mottoes/unum.html <p>Ellis Island was opened (January 1, 1892) during the administration of President Benjamin Harrison (Indiana's only President) http://www.history.com/topics/ellis-island</p>	<ul style="list-style-type: none"> We are a nation of immigrants; we have been heavily influenced by immigration since before the Revolutionary War E pluribus unum (out of many, one) http://greatseal.com/mottoes/unum.html <p>Ellis Island was opened (January 1, 1892) during the administration of President Benjamin Harrison (Indiana's only President) http://www.history.com/topics/ellis-island</p>

Standard 2 Civics and Government

Students explain what it means to be citizens of their community, state and nation; be able to identify the functions and major services provided by local governments; use a variety of resources to gather information about their local, state and national governments; and demonstrate understanding of democratic principles and practices.

Indiana Academic Standards	Content Connectors
<p>Foundations of Government</p> <p>3.2.1: Discuss the reasons governments are needed and identify specific goods and services that governments provide. Example: Governments provide community services such as fire and police protection, trash and snow removal, and safe drinking water.</p> <p>3.2.2: Identify and know the significance of fundamental democratic principles and ideals. Example: The right to life, liberty and the pursuit of happiness</p>	<p>3.2.1.a.1: Identify specific goods and services that governments provide.</p> <p>3.2.1.a.2: List reasons governments are needed. Example: Governments provide community services such as fire and police protection, trash and snow removal, and safe drinking water.</p> <p>3.2.2.a.1: Identify the fundamental democratic principles. Example: The right to life, liberty and the pursuit of happiness</p>
<p>Functions of Government</p> <p>3.2.3: Identify and explain the duties of and selection process for local and state government officials who make, implement and enforce laws.</p> <p>3.2.4: Explain that the United States has three levels of government (local, state and national) and that each level has special duties and responsibilities Roles of Citizens</p> <p>3.2.5: Explain the importance of being a responsible citizen* of your community, the state and the nation. Identify people in your community and the state who exhibit the characteristics of good citizenship*. Example: Being respectful, trustworthy, practicing tolerance and working with others to solve problems</p> <ul style="list-style-type: none"> citizen: someone with rights and responsibilities in a particular community, city, state or country citizenship: the act of practicing one's rights and responsibilities as a member of a community, state or nation 	<p>3.2.3.a.1: Identify how local and state government officials are selected.</p> <p>3.2.4.a.1: Identify that the United States has three levels of government (local, state and national).</p> <p>3.2.5.a.1: Identify people who are good citizens in your community, the state, or the nation. Example: Being respectful, trustworthy, practicing tolerance and working with others to solve problems</p> <ul style="list-style-type: none"> citizen: someone with rights and responsibilities in a particular community, city, state or country citizenship: the act of practicing one's rights and responsibilities as a member of a community, state or nation
<p>3.2.6: Explain the role citizens have in making decisions and rules within the community, state and nation such as participating in local and regional activities, voting in elections, running for office, and voicing opinions in a positive way</p> <p>3.2.7: Use information from a variety of resources to demonstrate an understanding of local, state and regional leaders and civic issues.</p>	<p>3.2.6.a.1: List ways citizens make decisions and rules within the community, state or nation. Example: participating in local and regional activities, voting in elections, running for office, and voicing opinions in a positive way</p> <p>3.2.7.a.1: Demonstrate an understanding of local, state and regional leaders and community issues.</p>

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Standard 3 Geography

Students explain that simple grid systems (latitude and longitude) are used to locate places on maps and globes, begin to understand the Earth/sun relationship, identify the distinctive physical and cultural features of their community, explain the geographic relationships between their own community and the state and other states within the region, and compare the geographic characteristics of their own community with communities in other parts of the world.

Indiana Academic Standards	Content Connectors
<p>The World in Spatial Terms</p> <p>3.3.1: Use labels and symbols to locate and identify physical and political features on maps and/or globes.</p>	<p>3.3.1.a.1: Use labels and symbols to locate and identify physical and political features on maps and/or globes.</p>
<p>3.3.2: Label a map of the Midwest, identifying states, major rivers, lakes and the Great Lakes.</p>	<p>3.3.2.a.1: Label a map of the Midwest, identifying states, major rivers, lakes and the Great Lakes.</p>
<p>3.3.3: Locate Indiana and other Midwestern states on maps using simple grid systems.</p>	<p>3.3.3.a.1: Locate Indiana and other Midwestern states on a United States map.</p>
<p>3.3.4: Identify the northern, southern, eastern and western hemispheres; cardinal and intermediate directions; and determine the direction and distance from one place to another</p>	<p>3.3.4.a.1: Identify the northern, southern, eastern and western hemispheres; cardinal directions.</p>
<p>Places and Regions</p> <p>3.3.5: Explain that regions are areas that have similar physical and cultural characteristics*. Identify Indiana and the local community as part of a specific region. Example: States touching the Great Lakes are part of the Great Lakes Region. The same states are also considered part of the Midwest because of their location relative to other states.</p> <p>*cultural characteristics: human features, such as population, communication and transportation networks, religion and customs, and how people make a living or build homes and other structures.</p>	<p>3.3.5.a.1: List physical and cultural characteristics of your community. Identify Indiana and the local community as part of a specific region. Example:*cultural characteristics: human features, such as population, communication and transportation networks, religion and customs, and how people make a living or build homes and other structures.</p>
<p>3.3.6: Compare and contrast the physical characteristics of Indiana to neighboring states using words, illustrations, maps, photographs, and other resources.</p>	<p>3.3.6.a.1: Compare and contrast the physical characteristics of Indiana to neighboring states using words, illustrations, maps, photographs, and other resources. Example: States touching the Great Lakes are part of the Great Lakes Region. The same states are also considered part of the Midwest because of their location relative to other states.</p>
<p>3.3.7: Compare the cultural characteristics of their community within communities in other parts of the world.</p>	<p>3.3.7.a.1: Compare and contrast cultural characteristics of their community within communities in other parts of the world.</p>
<p>Physical Systems</p> <p>3.3.8: Identify the major climate regions of the United States and explain their characteristics</p>	<p>3.3.8.a.1: Label the major climate regions of the United States.</p> <p>3.3.8.a.2: Define characteristics of climate regions.</p>
<p>3.3.9: Describe how climate and the physical characteristics of a region affect the vegetation and animal life living there. Example: Growing seasons, types of crops grown, and animal hibernation and migration</p>	<p>3.3.9.a.1: Describe how climate affects plants and animals. Example: Growing seasons, types of crops grown, and animal hibernation and migration</p>
<p>Human Systems</p> <p>3.3.10: Construct maps and graphs that show aspects of human/environmental interaction in the local community, Indiana and communities within the region. Example: Identify patterns of rural, urban and suburban development, including population demographics.</p>	<p>3.3.10.a.1: Interpret on a map rural, urban and suburban areas of the state. Example: Identify patterns of rural, urban and suburban development, including population demographics.</p>

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Indiana Academic Standards	Content Connectors
3.3.11: Describe how Native Americans and early settlers of Indiana adapted to and modified their environment to survive.	3.3.11.a.1: Compare how Native Americans and early settlers of Indiana adapted to and modified their environment to survive.
Environment and Society 3.3.12: Use a variety of resources to demonstrate an understanding of regional environmental issues and examine the ways that people have tried to solve these problems.	3.3.12.a.1: Identify regional environmental issues.
	3.3.12.a.2: List ways that people have tried to solve these environmental issues.
3.3.13: Identify and describe how human systems and physical systems have impacted the local environment. Example: List examples of changes in land use in the local community.	3.3.13.a.1: List examples of human systems and physical systems that have impacted the local environment. Example: List examples of changes in land use in the local community.

Standard 4 Economics

Students explain how people in the local community make choices about using goods, services and productive resources; how they engage in trade to satisfy their economic wants and needs; how they use a variety of sources to gather and apply information about economic changes in the community; and how they compare costs and benefits in economic decision making.

Indiana Academic Standards	Content Connectors
3.4.1: Give examples from the local community that illustrate the scarcity of productive resources. Explain how this scarcity requires people to make choices and incur opportunity costs*. <ul style="list-style-type: none"> • Scarcity: the idea that resources are limited in relation to people’s wants • Productive Resources: human resources, natural resources, and capital resources used to produce goods and services • Opportunity cost: term used in economics, to mean <i>the value of the best alternative that would have been chosen instead</i>. For example, if a city decides to build a hospital on some vacant land, the opportunity cost is the <i>other</i> things that might have been done with that same land instead. 	3.4.1.a.1: Identify scarcity, productive resources and opportunity cost in the local community. <ul style="list-style-type: none"> • Scarcity: the idea that resources are limited in relation to people’s wants • Productive Resources: human resources, natural resources, and capital resources used to produce goods and services • Opportunity cost: term used in economics, to mean <i>the value of the best alternative that would have been chosen instead</i>. For example, if a city decides to build a hospital on some vacant land, the opportunity cost is the <i>other</i> things that might have been done with that same land instead.
3.4.2: Give examples of goods and services provided by local business and industry.	3.4.2.a.1: Give examples of goods and services provided by local business and industry.
3.4.3: Give examples of trade in the local community and explain how trade benefits both parties.	3.4.3.a.1: Understand trade is the exchange of goods and services
3.4.4: Define interdependence and give examples of how people in the local community depend on each other for goods and services. <ul style="list-style-type: none"> • Interdependence: reliance on each other to produce goods and services 	3.4.3.a.2: Give examples of trade in the local community and explain how trade benefits both parties.
3.4.5: List the characteristics of money and explain how money makes trade and the purchase of goods easier. <ul style="list-style-type: none"> • Characteristics of money: scarce (not easily found), durable, easy to carry and easy to divide 	3.4.5.a.1: List the characteristics of money and explain how money makes trade and the purchase of goods easier. <ul style="list-style-type: none"> • Characteristics of money: scarce (not easily found), durable, easy to carry and easy to divide
3.4.6: Explain that buyers and sellers interact to determine the prices of goods and services in markets.	3.4.6.a.1: Explain that buyers and sellers interact to determine the prices of goods and services in markets.
3.4.7: Illustrate how people compare benefits and costs when making choices and decisions as consumers and producers. Example: When a family is deciding whether to buy a car, they have to compare the benefit of having personal transportation with the cost of buying and maintaining the car.	3.4.7.a.1: List wants and needs when making choices as consumers and producers. Example: When a family is deciding to make a purchase, they have to compare the benefits and cost of the purchase.

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<p>3.4.8: Gather data from a variety of resources about changes that have had an economic impact on your community. Example: Invite a community leader to discuss the decision to build a bigger baseball park in the community. Use the local chamber of commerce and government Web sites to research the impact a new recreation center will have on young people and their families.</p>	<p>3.4.8.a.1: List changes that have had an (economic) impact on your community. Example: Invite a community leader to discuss the decision to build a bigger baseball park in the community.</p>
<p>3.4.9: Identify different ways people save their income and explain advantages and disadvantages of each. Example: Home “piggy bank,” savings accounts, etc.</p>	<p>3.4.9.a.1: Identify different ways people save their income. Example: Home “piggy bank,” savings accounts, etc.</p>



Dr. Jennifer McCormick
Superintendent of Public Instruction

Working Together for Student Success

GRADE 4: Indiana in the Nation and the World

Subject/Course 0470 Level 4

Fourth grade students apply their growing academic skills and knowledge to an exploration of Indiana and its relationships with regional, national, and world communities. Students are beginning to develop a more refined concept of time and can begin to deal with cause-and-effect relationships and decision-making processes, such as identifying problems and considering alternative solutions and their subsequent consequences. These skills and concepts must be related to students' lives and should be presented in a wide variety of resources and hands-on-activities, which include: (1) collecting and examining primary documents and artifacts, (2) making models and maps, (3) talking with community resource persons, and (4) visiting historic sites and buildings.

In the fourth grade, students identify key people, places and events that have shaped their state and region. They learn to explain how changes have affected people and communities. Students identify major land forms, water features and resources, and explain how they have influenced state and regional development. They learn to describe the basic structure of state government and explain its purpose. Students have opportunities to actively explore and appreciate the diverse cultures which have contributed to Indiana's heritage. Students also learn to develop proficiency in working cooperatively in groups to: (1) collect data from a variety of resources, including electronic and print media; (2) draw simple conclusions; and (3) organize data using a variety of texts (written, graphs, charts, maps, time lines, etc).

The Indiana's K – 8 academic standards for social studies are organized around four content areas. The content area standards and the types of learning experiences they provide to students in Grade 4 are described below. On the pages that follow, age-appropriate concepts are listed for each standard. Skills for thinking, inquiry and participation are integrated throughout.

Please Note: Examples, when provided, are intended to help illustrate what is meant by the standards. They are only a starting point and are not exclusive. Many additional possibilities exist.

Standard 1 — History

Students trace the historical periods, places, people, events, and movements that have led to the development of Indiana as a state.

Standard 2 — Civics and Government

Students describe the components and characteristics of Indiana's constitutional form of government; explain the levels and three branches of Indiana's government; understand citizenship rights and responsibilities; investigate civic and political issues and problems; use inquiry and communication skills to report findings in charts, graphs, written and verbal forms; and demonstrate responsible citizenship by exercising civic virtues and participation skills.

Standard 3 — Geography

Students explain how the Earth/sun relationship influences the climate of Indiana; identify the components of

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Earth's physical systems; describe the major physical and cultural characteristics of Indiana; provide examples of how people have adapted to and modified their environment, past and present; identify regions of Indiana and compare the geographic characteristics of Indiana with states and regions in other parts of the world.

Standard 4 — Economics

Students study and compare the characteristics of Indiana's changing economy in the past and present.

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Standard 1 History

Students trace the historical periods, places, people, events, and movements that have led to the development of Indiana as a state.

Indiana Academic Standards	Content Connector
4.1.1: Identify and compare the major early cultures that existed in the region that became Indiana prior to contact with Europeans.	4.1.1.a.1: Identify the major early cultures that existed in the region that became Indiana prior to contact with Europeans.
4.1.2: Identify and describe historic Native American Indian groups that lived in Indiana at the time of early European exploration, including ways these groups adapted to and interacted with the physical environment.	4.1.2.a.1: Identify historic Native American Indian groups that lived in Indiana at the time of early European exploration.
4.1.3: Explain the importance of the Revolutionary War and other key events and people that influenced the development of Indiana as a state.	4.1.3.a.1: Explain the importance of the Revolutionary War and other key events and people that influenced the development of Indiana as a state.
4.1.4: Summarize and explain the significance of key documents in Indiana’s development from a United States territory to statehood.	4.1.4.a.1: Identify the year that Indiana became a state.
4.1.5: Identify and explain the causes of the removal of Native American Indian groups in the state and their resettlement during the 1830s	4.1.5.a.1: Identify the reason for the removal of Native American Indian groups in the state during 1830’s.
4.1.6 Explain how key individuals and events influenced the early growth and development of Indiana	4.1.6.a.1: Explain how key individuals and events influenced the early growth and development of Indiana. Examples: Indiana’s first governor, Jonathan Jennings; Robert Owen and the New Harmony settlement; moving the state capitol from Corydon to Indianapolis; development of roads and canals in Indiana; and the Indiana Constitution of 1851
4.1.7: Explain the roles of various individuals, groups, and movements in the social conflicts leading to the Civil War.	4.1.7.a.1: Identify the social conflicts leading to the Civil War. Examples: Levi and Catherine Coffin, abolition and anti-slavery groups, The Underground Railroad, and the Liberia colonization movement
4.1.8: Summarize the impact of Abraham Lincoln’s presidency on Indiana and describe the participation of Indiana citizens in the Civil War.	4.1.8.a.1: Recognize why Abraham Lincoln’s presidency was important to Indiana.
	4.1.8.a.2: Describe the participation of Indiana citizens in the Civil War. Examples: Indiana’s volunteer soldiers, the Twenty-eighth Regiment of the United States Colored Troops, Camp Morton, John Hunt Morgan, The Battle of Corydon, Lew Wallace, Benjamin Harrison, and women and children on the home front
4.1.9: Give examples of Indiana’s increasing agricultural, industrial, political and business development in the nineteenth century	4.1.9.a.1: List examples of Indiana’s agricultural, industrial, political and business development in the nineteenth century. Examples: Growth of railroads and urban centers, such as Indianapolis, South Bend, Evansville, Fort Wayne and Gary; President Benjamin Harrison; expansion of the educational system and universities; the growth of labor unions; and the start of Eli Lilly’s pharmaceutical business
4.1.10: Describe the participation of Indiana citizens in World War I and World War II.	4.1.10.a.1: Describe the participation of Indiana citizens in World War I and World War II.
4.1.11: Identify and describe important events and movements that changed life in Indiana in the early twentieth century.	4.1.11.a.1: Identify the cause and effect of the important events that changed life in Indiana in the early twentieth century.

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Indiana Academic Standards	Content Connector
	<p>Examples: Women’s suffrage, the Great Depression, World War I, African-American migration from the South and World War II</p>
<p>4.1.12: Describe the transformation of Indiana through immigration and through developments in agriculture, industry and transportation.</p>	<p>4.1.12.a.1: Describe how immigration changed Indiana.</p> <p>Examples: The impact of improved farming methods on Indiana agriculture; the development of Indiana’s automobile industry such as the Studebaker and the Duesenberg; the glass industry; the Ball Brothers; the growth of the steel industry in northern Indiana; and immigrant influence on cities and coal mining regions of the state .</p>
<p>4.1.13: Identify and describe important events and movements that changed life in Indiana from the mid-twentieth century to the present.</p>	<p>4.1.13.a.1: Organize important events that changed life in Indiana in the mid-twentieth century to the present.</p> <p>Examples: The civil rights movement and school integration in Indiana; Indiana’s participation in the Korean War; Asian and Hispanic immigration; and growth in advanced manufacturing and the life sciences industry.</p>
<p>4.1.14: Research Indiana’s modern growth emphasizing manufacturing, new technologies, transportation and global connections</p>	<p>4.1.14.a.1: Identify areas of modern growth in Indiana.</p> <p>Examples: Use Indiana government Web sites and other online resources to learn about the development of the interstate highway system, establishment of ports in Indiana, aerospace engineering, and pharmaceutical and high-tech industries.</p>
<p>4.1.15: Create and interpret timelines that show relationships among people, events, and movements in the history of Indiana.</p>	<p>4.1.15.a.1: Create simple timelines that show important events in the history of Indiana.</p> <p>Examples: Immigration patterns such as the settlement of the French and Germans, and automobile manufacturing</p>
<p>4.1.16: Identify different opinions in historical documents and other information resources and identify the central question each narrative addresses.</p>	
<p>4.1.17: Construct a brief narrative about an event in Indiana history using primary and secondary sources. * primary source: developed by people who experienced the events being studied (i.e., autobiographies, diaries, letters, government documents) * secondary source: developed by people who have researched events but did not experience them directly (i.e., articles, biographies, Internet resources, nonfiction books)</p>	<p>4.1.17.a.1: Identify an event in Indiana history.</p> <p>Examples: The first Indianapolis 500 mile race in 1911, The Battle of Tippecanoe 1811, The Ohio River Flood of 1913 and the 1965 Palm Sunday tornadoes</p>
<p>4.1.18: Research and describe the contributions of important Indiana artists and writers to the state’s cultural landscape.</p>	<p>4.1.18.a.1: Classify important Indiana artists and writers.</p> <p>Examples: Painters: T.C. Steele, the Hoosier Group and Robert Indiana; Authors: James Whitcomb Riley and Gene Stratton Porter; Musicians: Cole Porter, Hoagy Carmichael, Wes Montgomery, Joshua Bell and John Mellencamp; Other entertainers: Red Skelton and David Letterman</p>

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Standard 2 Civics and Government

Students describe the components and characteristics of Indiana’s constitutional form of government; explain the levels and three branches of Indiana’s government; understand citizenship rights and responsibilities; investigate civic and political issues and problems; use inquiry and communication skills to report findings in charts, graphs, written and verbal forms; and demonstrate responsible citizenship by exercising civic virtues and participation skills.

Indiana Academic Standards	Content Connector
4.2.1: Explain the major purposes of Indiana’s Constitution as stated in the Preamble.	4.2.1.a.1: Identify the Preamble of Indiana’s Constitution.
4.2.2: Describe individual rights, such as freedom of speech, freedom of religion and the right to public education, which people have under Article I of Indiana’s Constitution.	4.2.2.a.1: Identify that individual rights are freedom of speech, freedom of religion and the right to public education.
4.2.3: Identify and explain the major responsibilities of the legislative (Article 4), executive (Article 5), and judicial branches (Article 7) of state government as written in the Indiana Constitution.	4.2.3.a.1: Identify the three branches of the Indiana government and explain the functions of each.
4.2.4: Identify major state offices, the duties and powers associated with them, and how they are chosen, such as by election or appointment.	4.2.4.a.1: Identify major state elected offices and appointed offices.
4.2.5: Give examples of how citizens can participate in their state government and explain the right and responsibility of voting.	4.2.5.a.1: Identify rights and responsibilities of voting.
4.2.6: Define and provide examples of civic virtues* in a democracy.	<p>4.2.6.a.1: List and define examples of civic virtues.</p> <p>Examples: Individual responsibility, self-discipline/self-governance, civility, respect for the rights and dignity of all individuals, honesty, respect for the law, courage, compassion, patriotism, fairness and commitment to the common good</p> <p>* civic virtues: behaviors that contribute to the healthy functioning of a democracy</p>
4.2.7: Use a variety of resources to take a position or recommend a course of action on a public issue relating to Indiana’s past or present.	4.2.7.a.1: Identify historic or current events that relate to Indiana’s past or present.

Standard 3 Geography

Students explain how the Earth/sun relationship influences the climate of Indiana; identify the components of Earth’s physical systems; describe the major physical and cultural characteristics of Indiana; provide examples of how people have adapted to and modified their environment, past and present; identify regions of Indiana and compare the geographic characteristics of Indiana with states and regions in other parts of the world.

Indiana Academic Standards	Content Connector
4.3.1: Use latitude and longitude to identify physical and human features of Indiana.	<p>4.3.1.a.1: Use latitude and longitude to identify physical and human features of Indiana.</p> <p>Examples: transportation routes and bodies of water (lakes and rivers)</p>
4.3.2: Estimate distances between two places on a map when referring to relative locations. Places and Regions	4.3.2.a.1: Identify the legend on a map.
	4.3.2.a.2: Estimate distances between two places on a map, using the legend.
4.3.3: Locate Indiana on a map as one of the 50 United States. Identify and describe the location of the state	4.3.3.a.1: Locate Indiana on a map as one of the 50 United States.

Social Studies Grade 4

Indiana Academic Standards	Content Connector
capital, major cities and rivers in Indiana.	4.3.3.a.2: Identify the location of the state capital, major cities and rivers in Indiana.
4.3.4: Map and describe the physical regions of Indiana and identify major natural resources and crop regions.	4.3.4.a.1: Identify and locate the natural resources on a map of Indiana.
4.3.5: Explain how glaciers shaped Indiana’s landscape and environment.	4.3.5.a.1: Demonstrate how glaciers shaped Indiana’s landscape and environment.
4.3.6: Describe Indiana’s landforms (lithosphere*), water features (hydrosphere*), and plants and animal (biosphere*). * lithosphere: the soil and rock that form Earth’s surface * hydrosphere: all the water on Earth’s surface, including the hydrologic cycle (precipitation, evaporation, and condensation * biosphere: all plants and animals	4.3.6.a.1: Categorize Indiana’s landforms, water features, and plants and animals.
4.3.7: Explain the effect of the Earth/sun relationship on the climate of Indiana.	
4.3.8: Identify the challenges in the physical landscape of Indiana to early settlers and modern day economic development.	
4.3.9: Explain the importance of major transportation routes, including rivers, in the exploration, settlement and growth of Indiana and in the state’s location as a crossroad of America.	4.3.9.a.1: Explain how Indiana became the crossroads of America.
4.3.10: Identify immigration patterns and describe the impact diverse ethnic and cultural groups has had and has on Indiana.	4.3.10.a.1: Identify where immigrants settled in Indiana.
4.3.11: Examine Indiana’s international relationships with states and regions in other parts of the world	
4.3.12: Create maps of Indiana at different times in history showing regions and major physical and cultural features; give examples of how people in Indiana have modified their environment over time.	4.3.12.a.1: Identify different physical features on varying historical maps of Indiana. Example: state capitals, rivers, lakes, reservoir
4.3.13: Read and interpret texts (written, graphs, maps, timelines, etc.) to answer geographic questions about Indiana in the past and present.	4.3.13.a.1: Read and interpret texts (written, graphs, maps, timelines, etc.) to answer geographic questions about Indiana in the past and present.

Standard 4 Economics

Students study and compare the characteristics of Indiana’s changing economy in the past and present.

Indiana Academic Standards	Content Connector
4.4.1: Give examples of the kinds of goods* and services* produced in Indiana in different historical periods. * goods: tangible objects, such as food or toys, that can satisfy people’s wants and needs * services: actions that someone does for someone else, such as dental care or trash removal	4.4.1.a.1: Categorize goods and services produced in Indiana in different historical periods. * goods: tangible objects, such as food or toys, that can satisfy people’s wants and needs * services: actions that someone does for someone else, such as dental care or trash removal
4.4.2: Define productivity* and provide examples of how productivity has changed in Indiana during the past 100 years. * productivity: the amount of goods and services produced in a period of time divided by the productive resources used	4.4.2.a.1: Define productivity. * productivity: the amount of goods and services produced in a period of time divided by the productive resources used
4.4.3: Explain how both parties can benefit from trade* and give examples of how people in Indiana engaged in trade in different time periods.	4.4.3.a.1: Define trade and its benefits. * trade: the voluntary exchange of goods or services

Social Studies Grade 4

Indiana Academic Standards	Content Connector
* trade: the voluntary exchange of goods or services	
<p>4.4.4: Explain that prices change as a result of changes in supply* and demand* for specific products.</p> <p>* supply: what producers are willing and able to sell at various prices</p> <p>* demand: what consumers are willing and able to buy at various prices</p>	<p>4.4.4.a.1: Define supply and demand.</p> <p>* supply: what producers are willing and able to sell at various prices</p> <p>* demand: what consumers are willing and able to buy at various prices</p>
<p>4.4.5: Describe Indiana’s emerging global connections.</p>	<p>4.4.5.a.1: Identify Indiana’s international companies. Examples: Identify international companies in Indiana, such as Toyota, Chrysler (Fiat), Honda, Roche Diagnostics, and Indiana companies that have an international presence such as Biomet, Eli Lilly and Cummins Engine.</p>
<p>4.4.6: List the functions of money* and compare and contrast things that have been used as money in the past in Indiana, the United States and the world.</p> <p>* functions of money: helps people trade, measures the value of items, facilitates saving</p>	<p>4.4.6.a.1: List the functions of money.</p> <p>functions of money: helps people trade, measures the value of items, facilitates saving</p>
<p>4.4.7: Identify entrepreneurs* who have influenced Indiana and the local community.</p> <p>* entrepreneur: a person who takes a risk to start a business</p>	<p>4.4.7.a.1: Define an entrepreneur and give an example of an Indiana entrepreneur. Examples: The Studebaker brothers, Madam C.J. Walker, Eli Lilly and Marie Webster</p> <p>* entrepreneur: a person who takes a risk to start a business</p>
<p>4.4.8: Define profit* and describe how profit is an incentive for entrepreneurs.</p> <p>* profit: revenues from selling a good or service minus the costs of producing the good or service</p>	<p>4.4.8.a.1: Define profit.</p> <p>* profit: revenues from selling a good or service minus the costs of producing the good or service</p>
<p>4.4.9: Identify important goods and services provided by state and local governments by giving examples of how state and local tax revenues are used.</p>	<p>4.4.9.a.1: Identify goods and services in the state and local government.</p>
<p>4.4.10: Explain how people save, develop a savings plan, and create a budget in order to make a future purchase.</p>	<p>4.4.10.a.1: Explain how people save, develop a savings plan, and create a budget in order to make a future purchase.</p>



Dr. Jennifer McCormick
Superintendent of Public Instruction

Working Together for Student Success

GRADE 5: The United States—The Founding of the Republic

Subject/Course 0470 Level 5

Students in Grade 5 study the United States, focusing on the influence of physical and cultural characteristics on national origins, growth, and development up to 1800 through a formal exploration of United States history, geography, economics, government, current events, and cultural heritage. Emphasis should be placed upon study of Native American Indian cultures, European exploration, colonization, settlement, revolution against British rule, the founding of the Republic and the beginnings of the United States. Students also learn to describe the major components of our national government and to demonstrate responsible citizenship in the classroom and school setting.

Through active learning experiences at the fifth grade level, students' increasing interest in the ability to gather and organize data enables them to explore the physical and cultural characteristics of the United States and its neighbors. Most fifth grade students benefit from working and sharing in flexible groups so that they can become actively involved in "how-to" demonstrations. Their natural interest in science, biography, and travel set the stage for experience involving maps, memorabilia, collections, simulations, educational games, group-planned projects, first-person presentations, and school and community experiences. Fifth graders' interest in collecting and demonstrating uses of old objects provides avenues for extending time concepts.

In activities, emphasis is placed on the problem-solving skills of questioning, examining fact and opinion, analyzing and evaluating sources of information, contrasting and comparing using primary and secondary sources, and conducting research using a variety of resources, including technology and electronic and print media. Additional skills to be taught include: (1) analyzing maps, globes, and graphic organizers; (2) creating and interpreting charts and graphs; (3) Identifying relationships; (4) debating issues; (5) posing alternative actions; and (6) developing thinking and independent study skills.

The Indiana's K – 8 academic standards for social studies are organized around four content areas. The content area standards and the types of learning experiences they provide to students in Grade 5 are described below. On the pages that follow, age-appropriate concepts are listed for each standard. Skills for thinking, inquiry and participation are integrated throughout.

Standard 1 — History

Students describe the historical movements that influenced the development of the United States from pre-Columbian times up to 1800, with an emphasis on the American Revolution and the founding of the United States.

Standard 2 — Civics and Government

Students identify main components and characteristics of the United States government. They identify and explain key ideas in government from the colonial and founding periods that continue to shape civic and political life.

Standard 3 — Geography

Students describe the influence of the Earth/sun relationship on climate and use global grid systems; identify regions; describe physical and cultural characteristics; and locate states, capitals and major physical features of the United States. They also explain the changing interaction of people with their environment in regions of the United States and show how the United States is related geographically to the rest of the world.

Standard 4 — Economics

Students describe the productive resources and market relationships that influence the way people produce goods and services and earn a living in the United States in different historical periods. Students consider the importance of economic decision making and how people make economic choices that influence their future

Social Studies Grade 5

Standard 1 History

Students describe the historical movements that influenced the development of the United States from pre-Columbian times up to 1800, with an emphasis on the American Revolution and the founding of the United States.

Indiana Academic Standards	Content Connector
5.1.1: Identify and describe early cultures and settlements that existed in North America prior to contact with Europeans.	5.1.1.a.1: Identify groups of people who settled in North America prior to contact with Europeans.
5.1.2: Examine accounts of early European explorations of North America including major land and water routes, reasons for exploration and the impact the exploration had.	5.1.2.a.1: Examine how early European exploration of North America began on the east coast and expanded west.
5.1.3: Compare and contrast historic Indian groups of the West, Southwest, Northwest, Arctic and sub-Arctic, Great Plains, and Eastern Woodlands regions at the beginning of European exploration in the late fifteenth and sixteenth centuries.	
5.1.4: Locate and compare the origins, physical structure and social structure of early Spanish, French and British settlements.	
5.1.5: Compare and contrast the religious, political and economic reasons for the colonization of the Americas by Europe.	5.1.5.a.1: Understand that groups of people settled together and formed colonies in order to meet their needs.
5.1.6: Identify and explain instances of both cooperation and conflict that existed between Native American Indians and colonists.	5.1.6.a.1: Identify that cooperation and conflict existed between Native American Indians and colonists.
5.1.7: Identify and locate the 13 British colonies by region (New England, Middle, Southern) and describe the political, social, and economic organization and structure of each region.	5.1.7.a.1: Identify that were 13 original colonies ruled by the British.
5.1.8: Identify the early founders of colonial settlements and describe early colonial resistance to British rule.	
5.1.9: Understand how political, religious, and economic ideas brought about the American Revolution	5.1.9.a.1: Understand that Colonists fought the American Revolution against the British and won independence.
5.1.10: Analyze the causes of the American Revolution as outlined in the Declaration of Independence.	5.1.10.a.1: Identify that the Declaration of Independence lists the reasons the colonists wanted independence.
5.1.11: Identify major British and American leaders of the American Revolutionary War and describe their significance in key events of the war.	5.1.11.a.1: Identify one major British leader (King George III) and one major American leader (George Washington) of the American Revolutionary War.
5.1.12: Describe the contributions of France and other nations and of individuals to the outcome of the American Revolution	
5.1.13: Identify contributions of women and minorities during the American Revolution.	5.1.13.a.1: Identify contributions of women and minorities during the American Revolution.
5.1.14: Explain consequences of the American Revolution including the strengths and weaknesses of the Articles of Confederation, changes in trade relationships and the achievement of independence by the United States.	5.1.14.a.1: Identify that winning the American Revolution resulted in independence for the United States.
5.1.15: Explain why the United States Constitution was created in 1787 and how it established a stronger union among the original 13 states by making it the supreme law of the land. Identify people who were involved in its development.	5.1.15.a.1: Identify that American rights are outlined in the United States Constitution.
5.1.16: Describe the origins and drafting of the Bill of Rights, ratified in 1791.	5.1.16.a.1: Identify the Bills of Rights as the first 10 amendments to the US Constitution.
5.1.17: Explain why the first American political parties developed and analyze the impact political parties had on early presidential elections.	

Social Studies Grade 5

Indiana Academic Standards	Content Connector
5.1.18: Create and interpret timelines showing major people, events and developments in the early history of the United States from 1776-1801.	5.1.18.a.1: Interpret timelines showing events that occur in a sequence of time (first, next, and last).
5.1.19: Read fiction and nonfiction stories about conflicts among and between groups of people at different stages in the formation of the United States; give examples of how these conflicts were resolved and analyze the accuracy of the stories' historical details and sequence of events	5.1.19.a.1: Read fiction and nonfiction stories about conflicts among and between groups of people at different stages in the formation of the United States.
5.1.20: Using primary and secondary sources to examine an historical account about an issue of the time, reconstruct the literal meaning of the passages by identifying who was involved, what happened, where it happened, what events led to these developments and what consequences or outcomes followed.	5.1.20.a.1: Examine a historical account about an issue between 1610-1800.
5.1.21: Read and interpret primary and secondary source accounts that pertain to a problem confronting people during the Founding Era of the United States.	5.1.21.a.1: Examine a historical account about an issue of the Founding Era of the United States.
5.1.22: Identify and describe the contributions of important early American artists and writers and traditional arts and crafts to the new nation's cultural landscape.	5.1.22.a.1: Identify important types of early American traditional arts and crafts.

Standard 2 Civics and Government

Students identify main components and characteristics of the United States government. They identify and explain key ideas in government from the colonial and founding periods that continue to shape civic and political life.

Indiana Academic Standards	Content Connector
5.2.1: Summarize the principles and purposes of government as stated in the Preamble to the United States Constitution.	5.2.1.a.1: Identify the Preamble as the introduction to the United States Constitution.
5.2.2: Identify and explain ideas about limited government*, the rule of law and individual rights in key colonial era documents. (*limited government: the powers of government are specified and limited, usually by a written constitution, in order to protect individual rights.)	5.2.2.a.1: Define limited government. (*limited government: the powers of government are specified and limited, usually by a written constitution, in order to protect individual rights.)
5.2.3: Give examples and explain how the British colonies in America developed forms of representative government, self-government and democratic practices.	5.2.3.a.1: Give examples and explain how the British colonies in America developed government practices.
5.2.4: Identify and explain key ideas about government as noted in the Declaration of Independence, Articles of Confederation, Northwest Ordinance, United States Constitution and the Bill of Rights.	5.2.4.a.1: Identify and explain the type of government in the United States of America.
5.2.5: Describe and give examples of individual rights guaranteed by the Bill of Rights	5.2.5.a.1: Identify that individual rights are guaranteed by the Bill of Rights.
5.2.6: Describe the primary and general election process for local, state and national offices, including those used to select congressional and presidential office holders.	5.2.6.a.1: Describe that Americans vote for government leaders during elections.
5.2.7: Identify the three branches of the United States government and explain the functions of each	5.2.7.a.1: Identify the three branches of the United States government and explain the functions of each.
5.2.8: Describe group and individual actions that illustrate civic virtues, such as civility, cooperation, respect and responsible participation.	5.2.8.a.1: Describe that Americans have the responsibility to vote and participate in government.
5.2.9: Examine ways by which citizens may effectively voice opinions, monitor government, and bring about change in government including voting and participation in the election process.	5.2.9.a.1: Explain ways by which citizens may effectively voice opinions, monitor government, and bring about change in government including voting and participation in the election process.

Social Studies Grade 5

Indiana Academic Standards	Content Connector
5.2.10: Use a variety of information resources* to identify and evaluate contemporary issues that involve civic responsibility, individual rights and the common good. (*information resources: print media, such as books, magazines and newspapers; electronic media, such as radio, television, Web sites and databases; and community resources, such as individuals and organization.)	5.2.10.a.1: Use a variety of information resources* to identify contemporary issues that involve civic responsibility, individual rights and the common good. (* information resources: print media, such as books, magazines and newspapers; electronic media, such as radio, television, Web sites and databases; and community resources, such as individuals and organization.)

Standard 3 Geography

Students describe the influence of the Earth/sun relationship on climate and use global grid systems; identify regions; describe physical and cultural characteristics; and locate states, capitals and major physical features of the United States. They also explain the changing interaction of people with their environment in regions of the United States and show how the United States is related geographically to the rest of the world.

Indiana Academic Standards	Content Connector
5.3.1: Demonstrate that lines of latitude and longitude are measured in degrees of a circle, that places can be precisely located where these lines intersect, and that location can be stated in terms of degrees north or south of the equator and east or west of the prime meridian.	5.3.1.a.1: Demonstrate that places can be precisely located where latitude and longitude lines intersect, and that location can be stated in terms of degrees.
5.3.2: Identify and describe cultural and physical regions of the United States	5.3.2.a.1: Identify that there are different cultural and physical regions of the United States.
5.3.3: Use maps and globes to locate states, capitals, major cities, major rivers, the Great Lakes, and mountain ranges in the United States.	5.3.3.a.1: Use a map to identify the United States, the state of Indiana and its capital.
5.3.4: Identify Native American Indian and colonial settlements on maps and explain the reasons for the locations of these places.	5.3.4.a.1: Locate Native American Indian and colonial settlements on maps.
5.3.5: Locate the continental divide and the major drainage basins in the United States.	5.3.5.a.1: Locate the continental divide in the United States on a map.
5.3.6: Use maps to describe the characteristics of climate regions of the United States.	5.3.6.a.1: Identify that the United States is made up of different climate regions.
5.3.7: Identify major sources of accessible fresh water and describe the impact of access on the local and regional communities.	5.3.7.a.1: Identify why it is important for community to have access to fresh water.
5.3.8: Explain how the Spanish, British and French colonists altered the character and use of land in early America.	5.3.8.a.1: Identify how people change the land to meet the needs of the individual or community.
5.3.9: Identify the major manufacturing and agricultural regions in colonial America and summarize the ways that agriculture and manufacturing changed between 1600 and 1800.	5.3.9.a.1: Summarize the ways that agriculture and manufacturing changed between 1600 and 1800.
5.3.10: Using historical maps and other geographic representations/texts (written, maps, graphs, timelines, etc.) locate and explain the conflict over the use of land by Native American Indians and the European colonists.	5.3.10.a.1: Explain the conflict over the use of land by Native American Indians and the European colonists using historical maps and other geographic representation/texts. *written, maps, graphs, timelines, etc.
5.3.11: Describe adaptation and how Native American Indians and colonists adapted to variations in the physical environment.	5.3.11.a.1: Describe how people adapt to variations in the environment (changing housing, clothing, jobs, agricultural practices, etc.) in order to meet their needs.
5.3.12: Describe and analyze how specific physical features influenced historical events and movements.	5.3.12.a.1: Describe how specific physical features influenced historical events and movements.

Social Studies Grade 5

Standard 4 Economics

Students describe the productive resources and market relationships that influence the way people produce goods and services and earn a living in the United States in different historical periods. Students consider the importance of economic decision making and how people make economic choices that influence their future

Indiana Academic Standards	Content Connector
<p>5.4.1: Describe the economic activities within and among Native American Indian cultures prior to contact with Europeans. Examine the economic incentives that helped motivate European exploration and colonization.</p>	<p>5.4.1.a.1: Describe the economic activities within and among Native American Indian cultures prior to contact with Europeans.</p>
<p>5.4.2: Summarize a market economy* and give examples of how the colonial and early American economy exhibited these characteristics. (* market economy: An economic system where decision about what to produce, how to produce, and to whom to allocate goods and services are made primarily by individuals and businesses. In a market economy, prices are determined by the interaction of consumers and producers in markets.)</p>	<p>5.4.2.a.1: Define market economy and give an example of how colonial and early Americans traded. * market economy: An economic system where decision about what to produce, how to produce, and to whom to allocate goods and services are made primarily by individuals and businesses. In a market economy, prices are determined by the interaction of consumers and producers in markets.</p>
<p>5.4.3: Define types of trade barriers*. (* trade barriers: policies that hinder trade such as tariffs, quotas or embargos.)</p>	<p>5.4.3.a.1: List different types of trade barriers*. (* trade barriers: policies that hinder trade such as tariffs, quotas or embargos.)</p>
<p>5.4.4: Describe the impact of technological developments and major inventions on business productivity during the early development of the United States.</p>	<p>5.4.4.a.1: Describe that society is impacted when people invent and/or change goods.</p>
<p>5.4.5: Explain how education and training, specialization and investment in capital resources* increase productivity*. (* capital resources: goods, such as tools, buildings and equipment, used in production.) (*productivity: the amount of goods and services produced in a period of time divided by the productive resources used.)</p>	<p>5.4.5.a.1: Explain why it is important to have education and training to increase productivity. (*productivity: the amount of goods and services produced in a period of time divided by the productive resources used.)</p>
<p>5.4.6: Use economic reasoning to explain why certain careers are more common in one region than in another and how specialization results in more interdependence.</p>	<p>5.4.6.a.1: Explain why certain careers are more common in one region than in another.</p>
<p>5.4.7: Predict the effect of changes in supply* and demand* on price. (*supply: what producers are willing and able to sell at various prices) (*demand: what consumers are willing and able to buy at various prices)</p>	<p>5.4.7.a.1: Explain how supply and demand impact the buying and selling of different items. (*supply: what producers are willing and able to sell at various prices) (*demand: what consumers are willing and able to buy at various prices)</p>
<p>5.4.8: Analyze how the causes and effects of changes in price of certain goods* and services* had significant influence on events in United States history. (* goods: tangible objects, such as food or toys, that can satisfy people’s wants) (*services: actions that someone does for someone else, such as dental care or trash removal)</p>	<p>5.4.8.a.1: Compare and contrast how the prices of goods or services impact what people buy. * goods: tangible objects, such as food or toys, that can satisfy people’s wants *services: actions that someone does for someone else, such as dental care or trash removal</p>
<p>5.4.9: Explain the purpose and components of a personal budget and compare factors that influence household saving and spending decisions in early United States history and today.</p>	<p>5.4.9.a.1: Classify different ways people plan how to save and spend their money.</p>



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Working Together for Student Success

GRADE 6: Peoples, Places and Cultures in Europe and the Americas

Course 0470-06 (SOC ST 06)

Students in sixth grade compare the history, geography, government, economic systems, current issues, and cultures of the Western World with an emphasis on: (1) Europe, (2) North America, (3) South America, (4) Central America, (5) and the Caribbean region. Instructional programs for sixth grade students include experiences which foster the passage from concrete examples to abstract reasoning, concepts, ideas, and generalizations. Opportunities to develop skills include the use of a variety of resources and activities. Students should acquire positive attitudes regarding active participation, cooperation, responsibility, open-mindedness, and respect for others.

Indiana's K – 8 academic standards for social studies are organized around four content areas. The content area standards and the types of learning experiences they provide to students in Grade 6 are described below. On the pages that follow, age-appropriate concepts are listed for each standard. Skills for thinking, inquiry and participation are integrated throughout.

CONTENT STANDARDS

Standard 1 — History

Students explore the key historic movements, events and figures that contributed to the development of modern Europe and America from early civilizations through modern times by examining religious institutions, trade and cultural interactions, political institutions, and technological developments.

Standard 2 — Civics and Government

Students compare and contrast forms of government in different historical periods with contemporary political structures of Europe and the Americas and examine the rights and responsibilities of individuals in different political systems.

Standard 3 — Geography

Students identify the characteristics of climate regions in Europe and the Americas and describe major physical features, countries and cities of Europe and the Western Hemisphere.

Standard 4 — Economics

Students examine the influence of physical and cultural factors upon the economic systems of countries in Europe and the Americas.

Standard 1 History

Students explore the key historic movements, events and figures that contributed to the development of modern Europe and America from early civilizations through modern times by examining religious institutions, trade and cultural interactions, political institutions, and technological developments.

Indiana Academic Standards	Content Connector
6.1.1: Summarize the rise, decline, and cultural achievements of ancient civilizations in Europe and Mesoamerica.	6.1.1.a.1: Identify the cultural achievements of ancient civilizations in Europe and Mesoamerica. Examples: Greek, Roman, Mayan, Inca, and Aztec civilizations
6.1.2: Describe and compare the beliefs, the spread and the influence of religions throughout Europe and Mesoamerica.	6.1.2.a.1: Describe and compare the beliefs of religions throughout Europe and Mesoamerica.
	6.1.2.a.2: Describe and compare the spread and influence of religions throughout Europe and Mesoamerica.
6.1.3: Explain the continuation and contributions of the Eastern Roman Empire after the fall of the Western Roman Empire.	6.1.3.a.1: Explain the contributions of the Eastern Roman Empire after the fall of the Western Roman Empire.
6.1.4: Identify and explain the development and organization of political, cultural, social and economic systems in Europe and the Americas.	6.1.4.a.1: Identify and explain the development and organization of political, cultural, social and economic systems in Europe and the Americas.
6.1.5: Analyze the diverse points of view and interests of those involved in the Crusades and give examples of the changes brought about by the Crusades.	6.1.5.a.1: Identify examples of the changes brought about by the Crusades.
	6.1.5.a.2: Analyze the diverse points of view and interests of those involved in the Crusades.
6.1.6: Identify trade routes and discuss their impact on the rise of cultural centers and trade cities in Europe and Mesoamerica	6.1.6.a.1: Identify how trade routes impacted Europe and Mesoamerica.
6.1.7: Describe how the Black Death, along with economic, environmental and social factors led to the decline of medieval society	6.1.7.a.1: Describe how the Black Death impacted the medieval society.
6.1.8: Compare the diverse perspectives, ideas, interests and people that brought about the Renaissance in Europe.	6.1.8.a.1: Compare the diverse perspectives, ideas, interests and people that brought about the Renaissance in Europe.
6.1.9: Analyze the interconnections of people, places and events in the economic, scientific and cultural exchanges of the European Renaissance that led to the Scientific Revolution, voyages of discovery and imperial conquest.	6.1.9.a.1: Analyze the interconnections of people, places and events in the economic, scientific and cultural exchanges of the European Renaissance that led to the Scientific Revolution, voyages of discovery and imperial conquest
6.1.10: Examine and explain the outcomes of European colonization on the Americas and the rest of the world.	6.1.10.a.1: Examine and explain the outcomes of European colonization on the Americas and the rest of the world.
6.1.11: Compare and contrast Spanish, Portuguese, French, and British colonies in the Americas.	6.1.11.a.1: Compare and contrast Spanish, Portuguese, French, and British colonies in the Americas.
6.1.12: Describe the Reformations and their effects on European and American society.	6.1.12.a.1: Describe the Reformations.
	6.1.12.a.2: Explain the effects of Reformations on European and American society.
6.1.13: Explain the origin and spread of scientific, political, and social ideals associated with the Age of Enlightenment/Age of Reason.	6.1.13.a.1: Explain the origin and spread of scientific, political, and social ideals associated with the Age of Enlightenment/Age of Reason.
6.1.14: Describe the origins, developments and innovations of the Industrial Revolution and explain the impact these changes brought about.	6.1.14.a.1: Describe the origins, developments and innovations of the Industrial Revolution
	6.1.14.a.2: Explain the impact and changes brought about by the Industrial Revolution

Social Studies Grade 6

Indiana Academic Standards	Content Connector
6.1.15: Describe the impact of industrialization and urbanization on the lives of individuals and on trade and cultural exchange between Europe and the Americas and the rest of the world.	6.1.15.a.1: Identify industrialization and urbanization.
	6.1.15.a.2: Describe the impact of industrialization and urbanization on the lives of individuals in Europe, the Americas and the rest of the world.
	6.1.15.a.3: Describe the impact of industrialization and urbanization and on trade and cultural exchange between Europe and the Americas and the rest of the world.
6.1.16: Identify individuals, beliefs and events that represent various political ideologies during the nineteenth and twentieth century's and explain their significance.	6.1.16.a.1: Identify individuals, beliefs and events that represent various political ideologies during the nineteenth and twentieth century's.
6.1.17: Discuss the benefits and challenges related to the development of a highly technological society	6.1.17.a.1: Discuss the benefits and challenges related to the development of a highly technological society.
6.1.18: Create and compare timelines that identify major people, events and developments in the history of individual civilizations and/or countries that comprise Europe and the Americas.	6.1.18.a.1: Create and compare timelines that identify major people, events and developments in the history of individual civilizations and/or countries that comprise Europe and the Americas.
6.1.19: Define and use the terms decade, century, and millennium, and compare alternative ways that historical periods and eras are designated by identifying the organizing principles upon which each is based.	6.1.19.a.1: Define and use the terms decade, century, and millennium.
6.1.20: Analyze cause-and-effect relationships, keeping in mind multiple causations, including the importance of individuals, ideas, human interests, beliefs and chance in history.	6.1.20.a.1: Analyze cause-and-effect relationships of individuals, ideas, human interests, beliefs and chance in history.
6.1.21: Differentiate between fact and interpretation in historical accounts and explain the meaning of historical passages by identifying who was involved, what happened, where it happened, and relating them to outcomes that followed and gaps in the historical record.	6.1.21.a.1: Differentiate between fact and interpretation in historical accounts by identifying the facts and connecting to outcomes.
6.1.22: Form research questions and use a variety of information resources to obtain, evaluate and present data on people, cultures and developments in Europe and the Americas.	6.1.22.a.1: Form research questions and use a variety of information resources to obtain, evaluate and present data on people, cultures and developments in Europe and the Americas.
6.1.23: Identify issues related to an historical event in Europe or the Americas and give basic arguments for and against that issue utilizing the perspectives, interests and values of those involved.	6.1.23.a.1: Identify issues related to an historical event in Europe or the Americas.
	6.1.23.a.2: Create basic arguments for and against issues related to an historical event in Europe or the Americas utilizing the perspectives, interests and values of those involved

Standard 2 Civics and Government

Students compare and contrast forms of government in different historical periods with contemporary political structures of Europe and the Americas and examine the rights and responsibilities of individuals in different political systems.

Indiana Academic Standards	Content Connector
6.2.1: Compare and contrast major forms of governments in Europe and the Americas throughout history.	6.2.1.a.1: Compare and contrast major forms of governments in Europe and the Americas throughout history.
6.2.2: Explain how elements of Greek direct democracy and Roman representative democracy are present in modern systems of government.	6.2.2.a.1: Explain how elements of Greek direct democracy and Roman representative democracy are present in modern systems of government.
6.2.3: Examine key ideas of Magna Carta (1215), the Petition of Right (1628), and the English Bill of Rights	6.2.3.a.1: Examine key ideas of Magna Carta (1215), the Petition of Right (1628), and the English Bill of Rights

Social Studies Grade 6

Indiana Academic Standards	Content Connector
(1689) as documents to place limits on the English monarchy and how they have affected the shaping of other governments.	(1689) as documents to place limits on the English monarchy and how they have affected the shaping of other governments.
6.2.4: Define the term nation-state and describe the rise of nation-states headed by monarchs in Europe from 1500 to 1700	6.2.4.a.1: Define the term nation-state.
6.2.5: Discuss the impact of major forms of government in Europe and the Americas on civil and human rights.	6.2.5.a.1: Discuss the impact of major forms of government in Europe and the Americas on civil and human rights.
6.2.6: Identify and describe the functions of international political organizations in the world today.	6.2.6.a.1: Identify and describe the functions of international political organizations in the world today.
6.2.7: Define and compare citizenship and the citizen's role throughout history in Europe and the Americas	6.2.7.a.1 Define citizen and citizenship.
	6.2.7.a.2: Compare the citizen's role throughout history in Europe and the Americas

Standard 3 Geography

Students identify the characteristics of climate regions in Europe and the Americas and describe major physical features, countries and cities of Europe and the Western Hemisphere.

Indiana Academic Standards	Content Connector
6.3.1: Demonstrate a broad understanding of the countries and capitals of Europe and the Americas.	6.3.1.a.1: Demonstrate a broad understanding of the countries and capitals of Europe and the Americas.
6.3.2: Use latitude and longitude to locate the capital cities of Europe and the Americas and describe the uses of locational technology, such as Global Positioning Systems (GPS) to distinguish absolute and relative location and to describe Earth's surfaces.	6.3.2.a.1: Use latitude and longitude to locate the capital cities of Europe and the Americas and describe the uses of locational technology.
6.3.3: Describe and compare major physical characteristics of regions in Europe and the Americas.	6.3.3.a.1: Describe and compare major physical characteristics of regions in Europe and the Americas
6.3.4: Describe and compare major cultural characteristics of regions in Europe and the Western Hemisphere.	6.3.4.a.1: Describe and compare major cultural characteristics of regions in Europe and the Western Hemisphere.
6.3.5: Give examples and describe the formation of important river deltas, mountains and bodies of water in Europe and the Americas.	6.3.5.a.1: Identify river deltas, mountains and bodies of water in Europe and the Americas.
6.3.6: Explain how ocean currents and winds influence climate differences on Europe and the Americas.	
6.3.7: Locate and describe the climate regions of Europe and the Americas and explain how and why they differ.	6.3.7.a.1: Locate and describe the climate regions of Europe and the Americas and explain how and why they differ.
6.3.8: Identify major biomes of Europe and the Americas and explain how these are influenced by climate.	6.3.8.a.1: Identify major biomes of Europe and the Americas
6.3.9: Identify current patterns of population distribution and growth in Europe and the Americas using a variety of geographic representations such as maps, charts, graphs, and satellite images and aerial photography. Evaluate different push and pull factors that trigger migrations.	6.3.9.a.1: Identify current patterns of population distribution and growth in Europe and the Americas using a variety of geographic representations.
6.3.10: Explain the ways cultural diffusion, invention, and innovation change culture.	6.3.10.a.1: Explain the ways cultural diffusion, invention, and innovation change culture.
6.3.11: Define the terms anthropology and archeology and explain how these fields contribute to our understanding of societies in the present and the past.	6.3.11.a.1: Define the terms anthropology and archeology.
6.3.12: Compare the distribution and evaluate the importance of natural resources such as natural gas, oil, forests, uranium, minerals, coal, seafood and water in Europe and the Americas.	6.3.12.a.1: Identify natural resources such as natural gas, oil, forests, uranium, minerals, coal, seafood and water in Europe and the Americas
6.3.13: Explain the impact of humans on the physical	6.3.13.a.1: Explain the impact of humans on the physical

Social Studies Grade 6

Indiana Academic Standards	Content Connector
environment in Europe and the Americas.	environment in Europe and the Americas.
6.3.14: Explain and give examples of how nature has impacted the physical environment and human populations in specific areas of Europe and the Americas.	6.3.14.a.1: Explain and give examples of how natural disasters has impacted the physical environment and human populations in specific areas of Europe and the Americas.

Standard 4 Economics

Students examine the influence of physical and cultural factors upon the economic systems of countries in Europe and the Americas.

Indiana Academic Standards	Content Connector
6.4.2: Analyze how countries of Europe and the Americas have been influenced by trade in different historical periods.	6.4.2.a.1: Analyze how countries of Europe and the Americas have been influenced by trade in different historical periods.
6.4.3: Explain why international trade requires a system for exchanging currency between various countries.	
6.4.4: Describe how different economic systems (traditional, command, market and mixed) in Europe and the Americas answer the basic economic questions on what to produce, how to produce and for whom to produce.	
6.4.5: Compare the standard of living of various countries of Europe and the Americas today using Gross Domestic Product (GDP) per capita as an indicator.	6.4.5.a.1: Define Gross Domestic Product (GDP).
6.4.6: Analyze current economic issues in the countries of Europe or the Americas using a variety of information resources.	6.4.6.a.1: Discuss current economic issues in the countries of Europe or the Americas.
6.4.7: Identify economic connections between the local community and the countries of Europe or the Americas and identify job skills needed to be successful in the workplace.	
6.4.8: Identify ways that societies deal with helpful and harmful externalities (spillovers*) in Europe or the Americas. *externality (spillover): the impact of an activity (positive or negative) on the well-being of a third party	
6.4.9: Explain how saving and investing help increase productivity and economic growth and compare and contrast individual saving and investing options.	6.4.9.a.1: Explain how saving and investing help increase productivity and economic growth
	6.4.9.a.2: Compare and contrast individual saving and investing options.



Dr. Jennifer McCormick
Superintendent of Public Instruction

Working Together for Student Success

GRADE 7: Peoples, Places & Cultures in Africa, Asia & the Southwest Pacific

Course 0470-07

Students in seventh grade explore the history, geography, government, economic systems, current issues, and cultures of the Eastern World with an emphasis on: (1) Asia, (2) Africa, (3) the Middle East, (4) the Pacific Islands, (5) Australia, and (6) New Zealand. Learning experiences for seventh grade students should help them to make the transition from concrete information to abstract ideas, concepts, and generalizations. In-depth studies provide greater understanding of environmental influences on economic, cultural, and political institutions. Opportunities to develop thinking and research skills include reading and interpreting maps, graphs, and charts. Decision-making and problem-solving activities should include the following: (1) identifying problems, issues and questions; (2) information gathering; (3) hypothesizing; and (4) evaluating alternative solutions and actions.

The Indiana's K – 8 academic standards for social studies are organized around four content areas. The content area standards and the types of learning experiences they provide to students in Grade 7 are described below. On the pages that follow, age-appropriate concepts are listed for each standard. Skills for thinking, inquiry and participation are integrated throughout.

Standard 1 — History

Students examine the major movements, events and figures that contributed to the development of Africa, Asia and the Southwest Pacific from ancient civilizations to modern times by examining religious institutions, trade and cultural interactions, political institutions, and technological developments.

Standard 2 — Civics and Government

Students trace the development of different forms of government in different historical eras and compare various contemporary political structures in Africa, Asia, and the Southwest Pacific in terms of power, approach to human rights, and roles of citizens.

Standard 3 — Geography

Students use technology and grid systems to identify and categorize places (physical, cultural, countries, large cities), major geographic characteristics (human and physical), and regions in Africa, Asia, and the Southwest Pacific. They use geographic skills, perspectives, and technologies to analyze relationships within and between these regions and the rest of the world.

Standard 4 — Economics

Social Studies Grade 7

Students examine the influence of physical and cultural factors upon the economic systems found in countries of Africa, Asia and the Southwest Pacific.

Social Studies Grade 7

Standard 1 History

Students examine the major movements, events and figures that contributed to the development of Africa, Asia and the Southwest Pacific from ancient civilizations to modern times by examining religious institutions, trade and cultural interactions, political institutions, and technological developments.

Indiana Academic Standards	Content Connectors
7.1.1: Identify and explain the conditions that led to the rise of early river valley civilizations* and evaluate how the achievements in art, architecture, written language, and religion of those civilizations influenced their respective forms of government and social hierarchies. *River Valley Civilizations: Nile (Ancient Egypt), Tigris and Euphrates (Mesopotamia), Indus (Ancient India), and Huang He (Ancient China)	7.1.1.a.1: Identify why early river valley civilizations develop around common needs and resources (trade, food and water). *River Valley Civilizations Nile (Ancient Egypt), Tigris and Euphrates (Mesopotamia), Indus (Ancient India), and Huang He (Ancient China)
7.1.2: Describe, compare, and contrast the historical origins, central beliefs and spread of major religions.	7.1.2.a.1: Identify that different religions have different beliefs.
7.1.3: Assess the development of sub-Saharan civilizations in Africa and the importance of political and trading centers.	7.1.3.a.1: Identify that trade facilitates the exchange of culture and resources.
7.1.4: Describe the importance of the Silk Road on the histories of Europe, Africa, and Asia.	7.1.4.a.1: Identify that trade facilitates the exchange of culture and resources.
7.1.5: Explain the influence of Muslim civilization on the growth of cities, the development of trade routes, political organizations, scientific and cultural contributions, and the basis for the early banking system to other cultures of the time.	7.1.5.a.1: Describe the influences on Muslim Civilizations to other cultures of the time.
7.1.6: Describe the institution of slavery in its various forms in Africa, Asia and the Southwest Pacific and analyze the impact slavery had on different civilizations.	7.1.6.a.1: Identify that the institution of slavery has had an impact on different civilizations across the globe.
7.1.7: Trace the rise, spread and influence of the Mongols.	7.1.7.a.1: Describe the influence of the Mongols.
7.1.8: Describe the rise, contributions, and decline of the Chinese dynasties.	7.1.8.a.1: Describe that contributions on ancient civilizations continue to impact society.
7.1.9: Demonstrate how Japan became increasingly independent of earlier Chinese influences and developed its own political, religious, social and artistic traditions	7.1.9.a.1: Identify that Japan developed its own political, religious, social and artistic traditions.
7.1.10: Analyze worldwide voyages of exploration and discovery by considering multiple perspectives of various people in the past by demonstrating their differing motives, beliefs, interests, hopes, and fears.	7.1.10.a.1: Identify reasons why people explore other regions of the world.
7.1.11: Explain the reasons for European colonization of Africa, Asia, and the Southwest Pacific and analyze the long and short-term impact that colonization and imperialism had on the social, political, and economic development of these societies from both European and indigenous perspectives.	7.1.11.a.1: Identify that some countries overtake others for their own benefit and that impacts society. (European and indigenous perspectives.)
7.1.12: Analyze the Japanese imperial period (1868-1945), including Japan's involvement in World War II.	7.1.12.a.1: Recall that Japan was involved in World War II.
7.1.13: Identify and explain the significance of historical events in the Middle East since the end of World War II.	7.1.13.a.1: Recall since the end of World War II, historical events and conflict continue to happen in the Middle East.
7.1.14: Identify and explain recent conflicts and political issues between nations or cultural groups and evaluate the solutions that different organizations have utilized to address these conflicts	7.1.14.a.1: List different ways nations or cultural groups address conflict and possible solutions.
7.1.15: Create and compare timelines that identify major people and events and developments in the history of civilization and/or countries of Africa, Asia and the Southwest Pacific.	7.1.15.a.1: Interpret timelines showing people and events that occur in a sequence of time (first, next, and last).
7.1.16: Analyze cause-and-effect relationships, bearing in	7.1.16.a.1: Give an example of a cause and effect

Social Studies Grade 7

Indiana Academic Standards	Content Connectors
mind multiple causation in the role of individuals, beliefs and chance in history.	relationship in history.
7.1.17 Distinguish between unsupported expressions of opinion and informed hypotheses grounded in historical evidence.	7.1.17.a.1 Distinguish the difference between fact and opinion grounded in historical evidence.
7.1.18 Compare and contrast perspectives of history in Africa, Asia, and the Southwest Pacific using fictional and nonfictional accounts including visual, literary, art, and musical sources	7.1.18.a.1 Give an example of visual, literary, art and/or musical sources in the history of Africa, Asia, and the Southwest Pacific.

Standard 2 Civics and Government

Students trace the development of different forms of government in different historical eras and compare various contemporary political structures in Africa, Asia, and the Southwest Pacific in terms of power, approach to human rights, and roles of citizens.

Indiana Academic Standards	Content Connectors
7.2.1: Compare, contrast, and evaluate the different routes to independence from colonial rule taken by countries in Asia, Africa and the Southwest Pacific. Example: Australia, India and South Africa	7.2.1.a.1: Identify that some countries were once ruled by another country and are now independent to rule themselves. Example Australia, India and South Africa
7.2.2: Compare and contrast historical and contemporary governments in Africa, Asia, and the Southwest Pacific. Examples: Japan, North Korea, India, South Africa, and China	7.2.2.a.1: Identify contemporary governments in Africa, Asia, and the Southwest Pacific. Examples Japan, North Korea, India, South Africa, and China
7.2.3: Describe how major forms of governments of Japan, North Korea, India, South Africa and China currently protect or violate the human rights of their citizens.	7.2.3.a.1: Identify that basic human rights are denied or enforced by the government. (Japan, North Korea, India, South Africa and China)
7.2.4: Compare and contrast the functions of international organizations in Africa, Asia and the Southwest Pacific.	7.2.4.a.1: Identify the functions of international organizations in Africa, Asia and Southwest Pacific.
7.2.5: Define, compare and contrast citizenship and the citizen's role in the government of selected countries of Africa, Asia and the Southwest Pacific.	7.2.5.a.1: Explain ways people take various roles in their supporting governments. (Africa, Asia and the Southwest Pacific)

Standard 3 Geography

Students use technology and grid systems to identify and categorize places (physical, cultural, countries, large cities), major geographic characteristics (human and physical), and regions in Africa, Asia, and the Southwest Pacific. They use geographic skills, perspectives, and technologies to analyze relationships within and between these regions and the rest of the world.

Indiana Academic Standards	Content Connectors
7.3.1: Formulate a broad understanding of the location of countries of Africa, Asia and the Southwest Pacific	7.3.1.a.1: Identify the geographic locations of Africa, Asia, and the Southwest Pacific
7.3.2: Formulate a broad understanding of the location of capital cities in Africa, Asia and the Southwest Pacific using latitude and longitude on maps and with locational technology such as Global Positioning Systems and Geographic Information Systems.	7.3.2.a.1: Locate Africa, Asia and the Southwest Pacific using latitude and longitude on maps and with locational technology such as Global Positioning Systems and Geographic Information Systems.
7.3.3: Use historical maps to identify changes in Africa, Asia and the Southwest Pacific over time.	7.3.3.a.1: Compare changes between a historical and contemporary map in Africa, Asia and the Southwest Pacific.
7.3.4: Identify major physical characteristics of regions of Africa, Asia, and the Southwest Pacific, such as deserts, basins, plains, mountains, and rivers, and describe their formation	7.3.4.a.1: Locate key physical features to include mountains, deserts, oceans, and rivers. (Southwest Pacific, Africa and Asia)
7.3.5: Describe ecosystems of Africa's deserts, Asia's mountain regions, and the coral reefs of Australia and use multiple information resources to discover environmental concerns that these ecosystems are facing today.	7.3.5.a.1: Describe an ecosystem (Africa's deserts, Asia's mountain regions, and the coral reefs of Australia) and identify an environmental concern.
7.3.6: Compare and contrast the distribution of natural resources in Africa, Asia and the Southwest Pacific; describe	7.3.6.a.1: Identify that different countries have different natural resources that contribute to the economy of a

Social Studies Grade 7

Indiana Academic Standards	Content Connectors
how natural resource distribution can impact the wealth of a country.	country.
7.3.7: Describe the limitations that climate and land forms place on land or people in regions of Africa, Asia and the Southwest Pacific.	7.3.7.a.1 Describe how the climate effects people in the regions of Africa, Asia and Southwest Pacific.
7.3.8: Identify current trends and patterns of rural and urban population distribution in selected countries of Africa, Asia and the Southwest Pacific and analyze the causes for these patterns. Example: Life expectancy, income, literacy rate, industry, education, natural resources, and climate	7.3.8.a.1: Identify that population distribution effects the countries of Africa, Asia, and the Southwest Pacific. Example Life expectancy, income, literacy rate, industry, education, natural resources, and climate
7.3.9: Provide examples of ethnocentrism and how this attitude affected the relationships between different peoples in Africa, Asia, and the Southwest Pacific.	7.3.9.a.1: Describe how one cultures belief in their superiority to another culture impacts relationships between different people. (Africa, Asia, and the Southwest Pacific)
7.3.10: Analyze current issues and developments related to the environment in selected countries in Africa, Asia and the Southwest Pacific.	7.3.10.a.1: Describe that the environment is always changing and has a great impact on a country's development. (Africa, Asia, and the Southwest Pacific)

Standard 4 Economics

Students examine the influence of physical and cultural factors upon the economic systems found in countries of Africa, Asia and the Southwest Pacific.

Indiana Academic Standards	Content Connectors
7.4.1: Explain how voluntary trade benefits countries and results in higher standards of living in Africa, Asia, and the Southwest Pacific.	7.4.1.a.1: Explain that countries benefit from trade.
7.4.2: Illustrate how international trade requires a system for exchanging currency between and among nations.	7.4.2.a.1: Identify that countries have different currencies and trade values.
7.4.3: Trace the development and change over time of the economic systems (traditional*, command*, market* and mixed*) of various cultures, societies or nations in Africa, Asia and the Southwest Pacific. and analyze why these changes occurred over time <ul style="list-style-type: none"> • traditional economy: an economy in which resources are allocated based on custom and tradition • command economy: an economy in which resources are allocated by the government or other central authority • market economy: an economy in which resources are allocated by individuals and businesses responding to changes in prices • mixed economy: an economy in which resources are allocated by some combination of traditional, command or market systems 	7.4.3.a.1: Identify that different countries have different economic systems.
7.4.4: Compare and contrast the standard of living of various countries in Africa, Asia, and the Southwest Pacific using Gross Domestic Product (GDP)* per capita as an indicator; hypothesize how factors, including urbanization, industrialization, and globalization could affect the differences in the standard of living statistics. <ul style="list-style-type: none"> • Gross Domestic Product (GDP): the value of all final goods and services produced in a country in a year 	7.4.4.a.1: Identify that countries have diverse standards of living as measured by Growth Domestic Product (GDP).
7.4.5: Analyze different methods that countries in Africa, Asia and the Southwest Pacific have used to increase their citizens' individual human capital*. * human capital: the skills and expertise people acquire from education, training, and experience.	7.4.5.a.1: Describe ways people can improve their human capital. human capital the skills and expertise people acquire from education, training, and experience.
7.4.6: Identify ways that societies deal with helpful and	7.4.6.a.1: Identify ways the government can help citizens or

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Indiana Academic Standards	Content Connectors
harmful externalities (spillovers*) in Africa, Asia or the Southwest Pacific. Example: Government support of public education and governments taxing or regulating pollution * externality (spillover): the impact of an activity (positive or negative) on the well-being of a third party	the environment.



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Working Together for Student Success

GRADE 8: United States History—Growth and Development (to 1877)

Course 0470-08

In Grade 8, students focus upon United States history, beginning with a brief review of early history, including the Revolution and Founding Era, and the principles of the United States and Indiana constitutions, as well as other founding documents and their applications to subsequent periods of national history and to civic and political life. Students then study national development, westward expansion, social reform movements, and the Civil War and Reconstruction. Students examine major themes, issues, events, movements, and figures in United States history through the Reconstruction Period (1877) and explore relationships to modern issues and current events.

Eighth grade students need to experience a variety of teaching and learning strategies. Students are provided practice in thinking and research skills by learning to use the media center, primary documents, and community resources such as historic sites and buildings to identify, evaluate and use appropriate data and reference information. This course also helps students to develop an appreciation of historical thinking skills. Finally, students should demonstrate, through their studies, a commitment to the rights and responsibilities of citizenship in a democratic society.

The Indiana's K – 8 academic standards for social studies are organized around four content areas. The content area standards and the types of learning experiences they provide to students in Grade 8 are described below. On the pages that follow, age-appropriate concepts are listed for each standard. Skills for thinking, inquiry and participation are integrated throughout.

CONTENT STANDARDS

Standard 1 — History

Students examine the relationship and significance of themes, concepts, and movements in the development of United States history, including review of key ideas related to the colonization of America and the revolution and Founding Era. This will be followed by emphasis on social reform, national development and westward expansion, and the Civil War and Reconstruction period.

Standard 2 — Civics and Government

Students explain the major principles, values and institutions of constitutional government and citizenship, which are based on the founding documents of the United States and how the three branches of government share and check power within our federal system of government.

Standard 3 — Geography

Social Studies Grade 8

Students identify the major geographic characteristics of the United States and its regions. They name and locate the major physical features of the United States, as well as demonstrate a broad understanding of the states, capitals and major cities, and use geographic skills and technology to examine the influence of geographic factors on national development.

Standard 4 — Economics

Students identify, describe and evaluate the influence of economic factors on national development from the founding of the nation to the end of Reconstruction.

Social Studies Grade 8

Standard 1 History

Students examine the relationship and significance of themes, concepts and movements in the development of United States history, including review of key ideas related to the colonization of America and the revolution and Founding Era. This will be followed by emphasis on social reform, national development and westward expansion, and the Civil War and Reconstruction period.

Indiana Academic Standards	Content Connectors
<p>Historical Knowledge</p> <p>The American Revolution and Founding of the United States: 1754 to 1801</p> <p>8.1.1: Identify the major Native American Indian groups of eastern North America and describe early conflict and cooperation between European settlers and these Native American groups.</p>	<p>8.1.1.a.1: Identify the major Native American Indian groups of eastern North America and describe early conflict and cooperation between European settlers and these Native American groups.</p>
<p>8.1.2: Compare and contrast reasons for British, French, Spanish and Dutch colonization in the New World.</p>	<p>8.1.2.a.1: Compare and contrast reasons for British, French, Spanish and Dutch colonization in the New World.</p>
<p>8.1.3: Explain the conditions, causes, consequences and significance of Britain’s struggle to maintain control of colonies during the French and Indian War (1754–1763)</p>	<p>8.1.3.a.1: Explain the conditions, causes, consequences and significance of Britain’s struggle to maintain control of colonies during the French and Indian War (1754–1763).</p>
<p>8.1.4: Identify and explain the reasons and actions for the resistance and rebellion against British imperial rule by the thirteen colonies in North America (1761–1775).</p>	<p>8.1.4.a.1: Identify and explain the reasons and actions for the resistance and rebellion against British imperial rule by the thirteen colonies in North America (1761–1775).</p>
<p>8.1.5: Analyze the causes and effects of the Revolutionary War (1775–1783), including the ideas from the Declaration of Independence, the enactment of the Articles of Confederation and the Treaty of Paris (1783).</p>	<p>8.1.5.a.1: Analyze the causes and effects of the Revolutionary War (1775–1783), including the ideas from the Declaration of Independence, the enactment of the Articles of Confederation and the Treaty of Paris (1783).</p>
<p>8.1.6: Identify and give the significance of major events in the creation of the Constitution such as: the enactment of state constitutions, the Constitutional conventions, the willingness to compromise, and the Federalist- anti Federalist debates regarding the vote to ratify the Constitution.</p>	<p>8.1.6.a.1: Identify and give the significance of major events in the creation of the Constitution such as: the enactment of state constitutions, the Constitutional conventions, the willingness to compromise, and the Federalist- anti Federalist debates regarding the vote to ratify the Constitution.</p>
<p>8.1.7: Identify and explain the steps taken during the Washington Administration and the First and Second Congresses of the United States to establish a stable and lasting national government.</p>	<p>8.1.7.a.1: Identify and explain the steps taken during the Washington Administration and the First and Second Congresses of the United States to establish a stable and lasting national government.</p>
<p>8.1.8: Compare and contrast the views of Thomas Jefferson and Alexander Hamilton and explain how their differences gave rise to the development of political parties.</p>	<p>8.1.8.a.1: Compare and contrast the views of Thomas Jefferson and Alexander Hamilton and explain how their differences gave rise to the development of political parties.</p>
<p>8.1.9: Identify the events leading up to the presidential and congressional election of 1800 and the transfer of political authority and power to the Democratic-Republican Party led by Thomas Jefferson (1801); Evaluate the significance of these events.</p>	<p>8.1.9.a.1: Identify the events leading up to the presidential and congressional election of 1800 and the transfer of political authority and power to the Democratic-Republican Party led by Thomas Jefferson (1801).</p>
<p>8.1.10: Analyze the influence of important individuals on social and political developments of the time (1775 – 1800) such as the Independence movement and the framing of the Constitution.</p>	<p>8.1.10.a.1 Analyze the influence of important individuals on social and political developments of the time (1775 – 1800) such as the Independence movement and the framing of the Constitution.</p>
<p>8.1.11: Compare and contrast the ways of life in the northern and southern states, including the growth of towns and cities and the growth of industry in the North and the growing dependence on slavery and the production of cotton in the South.</p>	<p>8.1.11.a.1 Compare and contrast the ways of life in the northern and southern states, including the growth of towns and cities and the growth of industry in the North and the growing dependence on slavery and the production of cotton in the South.</p>

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Indiana Academic Standards	Content Connectors
National Expansion and Reform: 1801 to 1861 8.1.12: Interpret how the events surrounding the Louisiana Purchase (1803) and Lewis and Clark expedition (1803-1806) allowed for America’s initial push towards westward expansion	8.1.12.a.1: Interpret how the events surrounding the Louisiana Purchase (1803) allowed for America’s initial push towards westward expansion.
	8.1.12.a.2: Interpret how the events surrounding Lewis and Clark expedition (1803-1806) allowed for America’s initial push towards westward expansion.
8.1.13: Explain the main issues, consequences, and landmark decisions of the Marshall Court	8.1.13.a.1: Explain the main issues, consequences, and landmark decisions of the Marshall Court.
8.1.14: Analyze the causes and consequences of the War of 1812.	8.1.14.a.1: Analyze the causes and consequences of the War of 1812.
8.1.15: Define nationalism and understand the direction nationalism gave to domestic and foreign policy and to the development of an industrial economy during this period.	8.1.15.a.1: Define nationalism and understand the direction nationalism gave to domestic and foreign policy and to the development of an industrial economy during this period.
8.1.16: Identify the key ideas of Jacksonian democracy and explain their influence on political participation, political parties and constitutional government; analyze Jackson’s actions as President such as the destruction of the National Bank, the nullification crisis, and Jackson’s Indian policy.	8.1.16.a.1: Identify the key ideas of Jacksonian democracy
	8.1.16.a.2: Explain the influence of the Jacksonian democracy on political participation, political parties and constitutional government
8.1.17: Explain relationships and conflict between settlers and Native Americans on the frontier.	8.1.17.a.1: Explain relationships and conflict between settlers and Native Americans on the frontier.
8.1.18: Describe the causes, courses, challenges, compromises, and consequences associated with westward expansion, including the concept of Manifest Destiny.	8.1.18.a.1: Describe the concept of Manifest Destiny.
8.1.19: Analyze the causes and effects of the Mexican War (1846-1848).	8.1.19.a.1: Analyze the causes and effects of the Mexican War (1846-1848).
8.1.20: Give examples of how immigration affected American culture in the decades before and the Civil War, including growth of industrial sites in the North; religious differences; tensions between middle-class and working-class people, particularly in the Northeast; and intensification of cultural differences between the North and the South.	8.1.20.a.1: Understand how immigration affected American culture in the decades before and the Civil War.
8.1.21: Give examples of the changing role of women, minorities, and immigrants in the northern, southern and western parts of the United States in the mid-nineteenth century, and examine possible causes for these changes.	8.1.21.a.1: Identify the changing role of women, minorities, and immigrants in the northern, southern and western parts of the United States in the mid-nineteenth century.
8.1.22: Describe the abolitionist movement and identify figures and organizations involved in the debate over slavery, including leaders of the Underground Railroad	8.1.22.a.1: Describe the abolitionist movement and identify figures and organizations involved in the debate over slavery, including leaders of the Underground Railroad
8.1.23: Analyze the influence of early individual social reformers and movements such as the abolitionist, feminist and social reform movements.	8.1.23.a.1: Analyze the influence of early individual social reformers.

Indiana Academic Standards	Content Connectors	
The Civil War and Reconstruction Period: 1850 to 1877 8.1.24: Analyze the causes and effects of events leading to the Civil War, and evaluate the impact issues such as states’ rights and slavery had in developing America’s sectional conflict.	8.1.24.a.1: Analyze the causes and effects of events leading to the Civil War.	
	8.1.25: Identify the factors and individuals which influenced the outcome of the Civil War and explain the significance of each.	8.1.25.a.1: Identify the factors and individuals which influenced the outcome of the Civil War.
	8.1.26: Compare and contrast the three plans for Reconstruction and evaluate the merits of each.	8.1.26.a.1: Compare and contrast the three plans for Reconstruction and evaluate the merits of each
	8.1.27: Describe causes and lasting effects of the Civil War and Reconstruction as well as the political controversies surrounding this time such as Andrew Johnson’s impeachment, the Black Codes, and the Compromise of 1877. (Government, Economics)	8.1.27.a.1: Describe causes and lasting effects of the Civil War and Reconstruction.

Social Studies Grade 8

Indiana Academic Standards	Content Connectors
<p>Chronological Thinking, Historical Comprehension, Analysis and Interpretation, Research, and Issues-Analysis and Decision-Making</p> <p>8.1.28: Recognize historical perspective and evaluate alternative courses of action by describing the historical context in which events unfolded</p>	
<p>8.1.29: Differentiate between facts and historical interpretations of events, recognizing that the historian’s narrative reflects his or her judgment about the significance of particular facts.</p>	<p>8.1.29.a.1: Differentiate between facts and historical interpretations of events</p>
<p>8.1.30: Using primary and secondary sources, analyze an issue confronting the United States from colonial times through the Reconstruction period.</p>	<p>8.1.30.a.1: Using primary and secondary sources, analyze an issue confronting the United States from colonial times through the Reconstruction period.</p>
<p>8.1.31: Compare and contrast examples of art, music, literature, and other forms of expression; explain how these reflect American culture during this time period.</p>	<p>8.1.31.a.1: Compare and contrast examples of art, music, literature, and other forms of expression; explain how these reflect American culture during this time period.</p>

Standard 2 Civics and Government

Students explain the major principles, values and institutions of constitutional government and citizenship, which are based on the founding documents of the United States and how the three branches of government share and check power within our federal system of government.

Indiana Academic Standards	Content Connectors
<p>Foundations of Government</p> <p>8.2.1: Identify and explain essential ideas of constitutional government, which include limited government; rule of law; due process of law; separated and shared powers; checks and balances; federalism; popular sovereignty; republicanism; representative government; and individual rights to life, liberty and property; and freedom of conscience.</p>	<p>8.2.1.a.1: Identify and explain essential ideas of constitutional government.</p>
<p>8.2.2: Explain the concept of a separation of powers and how and why these powers are distributed, shared and limited in the constitutional government of the United States.</p>	<p>8.2.2.a.1: Explain the concept of a separation of powers.</p>
<p>8.2.3: Examine ways that the national government affects the everyday lives of people of the United States.</p>	<p>8.2.3.a.1: Examine ways that the national government affects the everyday lives of people of the United States</p>
<p>Functions of Government</p> <p>8.2.4: Compare and contrast the delegated, reserved, and concurrent powers (division of power or federal system) contained in the United States Constitution.</p>	<p>8.2.4.a.1: Describe the division of power contained in the United States Constitution</p>
<p>8.2.5: Compare and contrast the different functions of national and state government within the federal system by analyzing the United States Constitution and the Indiana Constitution.</p>	<p>8.2.5.a.1: Compare and contrast the different functions of national and state government within the federal system</p>
<p>Roles of Citizens</p> <p>8.2.6: Recognize and explain the relationship between the rights and responsibilities of citizenship in the United States.</p>	<p>8.2.6.a.1: Recognize and explain the relationship between the rights and responsibilities of citizenship in the United States.</p>
<p>8.2.7: Explain the importance of responsible participation by citizens in voluntary civil organizations to bring about social reform.</p>	<p>8.2.7.a.1: Explain the importance of responsible participation by citizens in voluntary civil organizations to bring about social reform.</p>
<p>8.2.8: Explain ways that citizens can participate in the election process (political parties, campaigns and elections) at the national, state, and local levels.</p>	<p>8.2.8.a.1: Explain ways that citizens can participate in the election process (political parties, campaigns and elections) at the national, state, and local levels.</p>
<p>8.2.9: Explain how citizens can monitor and influence the development and implementation of public policies at local, state and national levels of government.</p>	<p>8.2.9.a.1: Explain how citizens can monitor and influence the development and implementation of public policies at local, state and national levels of government.</p>
<p>8.2.10: Research and defend positions on issues in which fundamental values and principles related to the United States</p>	<p>8.2.10.a.1: Formulate an argument defending an issue in which fundamental values and principles related to the United States</p>

Social Studies Grade 8

Indiana Academic Standards	Content Connectors
Constitution are in conflict such as: 1 st and 2 nd Amendment rights, the right to privacy, and the rights of the individual.	Constitution are in conflict such as: 1st and 2nd Amendment rights, the right to privacy, and the rights of the individual.

Standard 3 Geography

Students identify the major geographic characteristics of the United States and its regions. They name and locate the major physical features of the United States, as well as demonstrate a broad understanding of the states, capitals and major cities, and use geographic skills and technology to examine the influence of geographic factors on national development.

Indiana Academic Standards	Content Connectors
<p>The World in Spatial Terms 8.3.1: Read maps to interpret symbols and determine the land forms and human features that represent physical and cultural characteristics of regions in the United States.</p>	<p>8.3.1.a.1: Read maps to interpret symbols and determine the land forms and human features that represent physical and cultural characteristics of regions in the United States</p>
<p>Places and Regions 8.3.2: Read and interpret maps that portray the physical growth and development of the United States from colonization through Reconstruction (1877).</p>	<p>8.3.2.a.1: Read and interpret maps that portray the physical growth and development of the United States from colonization through Reconstruction (1877).</p>
<p>Physical Systems 8.3.3: Identify and locate the major climate regions in the United States and describe the characteristics of these regions.</p>	<p>8.3.3.a.1: Identify and locate the major climate regions in the United States and describe the characteristics of these regions</p>
<p>8.3.4 Identify the major mountain ranges and river systems of the United States and explain the importance of these physical features in the development of America.</p>	<p>8.3.4.a.1: Identify the major mountain ranges and river systems of the United States and explain the importance of these physical features in the development of America.</p>
<p>Human Systems 8.3.5: Identify the agricultural regions of the United States and be able to give explanations for how the land was used and developed during the growth of the United States.</p>	<p>8.3.5.a.1: Identify the agricultural regions of the United States and be able to give explanations for how the land was used.</p>
<p>8.3.6: Using maps identify changes influenced by growth, economic development and human migration in the United States.</p>	<p>8.3.6.a.1: Using maps identify changes influenced by growth, economic development and human migration in the United States.</p>
<p>8.3.7: Using primary and secondary sources, identify ways people modified the physical environment as the United States developed and describe the impacts that resulted.</p>	<p>8.3.7.a.1: Using primary and secondary sources, identify ways people modified the physical environment as the United States developed.</p>
<p>8.3.8: Analyze human and physical factors that have influenced migration and settlement patterns and relate them to the economic development of the United States.</p>	<p>8.3.8.a.1: Analyze human and physical factors that have influenced migration and settlement patterns.</p>
	<p>8.3.8.a.2: Relate human and physical factors to economic development of the United States.</p>
<p>8.3.9: Identify and interpret maps, graphs and charts showing the distribution of natural resources such as forests, water sources and wildlife in the United States at the beginning of the nineteenth century and give examples of how people exploited these resources as the country became more industrialized and people moved westward.</p>	<p>8.3.9.a.1: Identify and interpret maps, graphs and charts showing the distribution of natural resources in the United States at the beginning of the nineteenth century.</p>

Social Studies Grade 8

Standard 4 Economics

Students identify, describe and evaluate the influence of economic factors on national development from the founding of the nation to the end of Reconstruction.

Indiana Academic Standards	Content Connectors
<p>8.4.1: Identify economic factors contributing to European exploration and colonization in North America, the American Revolution and the drafting of the Constitution of the United States.</p>	<p>8.4.1.a.1: Identify economic factors contributing to European exploration and colonization in North America, the American Revolution and the drafting of the Constitution of the United States.</p>
<p>8.4.2: Identify and explain the four types of economic systems (traditional, command, market, and mixed); evaluate how the characteristics of a market economy have affected the economic and labor development of the United States.</p> <ul style="list-style-type: none"> * traditional economy: an economy in which resources are allocated based on custom and tradition * command economy: an economy in which resources are allocated by the government or other central authority * market economy: an economy in which resources are allocated by decisions of individuals and businesses * mixed economy: an economic system combining private and public enterprise 	<p>8.4.2.a.1: Identify and explain the four types of economic systems (traditional, command, market, and mixed);</p>
<p>8.4.3: Explain how federal, state, and local governments are involved in the economy of the United States.</p>	<p>8.4.3.a.1: Explain how federal, state, and local governments are involved in the economy of the United States.</p>
<p>8.4.4: Analyze contributions of entrepreneurs and inventors in the development of the United States economy to 1877.</p>	<p>8.4.4.a.1: Analyze contributions of entrepreneurs and inventors in the development of the United States economy to 1877.</p>
<p>8.4.5: Relate how new technology and inventions brought about changes in labor productivity in the United States in the eighteenth and nineteenth centuries.</p>	<p>8.4.5.a.1: Relate how new technology and inventions brought about changes in labor productivity in the United States in the eighteenth and nineteenth centuries.</p>
<p>8.4.6: Trace the development of different kinds of money used in the United States.</p>	<p>8.4.6.a.1: Trace the development of different kinds of money used in the United States.</p>
<p>8.4.7: Trace the development of the banking system in the United States.</p>	<p>8.4.7.a.1: Trace the development of different kinds of money used in the United States.</p>
<p>8.4.8: Explain and evaluate examples of domestic and international interdependence throughout United States history.</p>	<p>8.4.8.a.1; Explain and evaluate examples of domestic and international interdependence throughout United States history.</p>
<p>8.4.9: Examine the importance of borrowing and lending (the use of credit) in the United States economy and list the advantages and disadvantages of using credit.</p>	<p>8.4.9.a.1: Identify the use of credit and list the advantages and disadvantages of using credit.</p>
<p>8.4.10: Compare and contrast job skills needed in different time periods in United States history.</p>	

LITERACY IN HISTORY/SOCIAL STUDIES:

Guiding Principle: *Students develop discipline-specific reading and writing skills. Within the areas of History/Social Studies, students apply these skills in order to develop a deeper understanding of the content area.*

There are six key areas found in the Literacy in History/Social Studies section for grades 6-12: Key Ideas and Textual Support, Structural Elements and Organization, Synthesis and Connection of Ideas, Writing Genres, the Writing Process, and the Research Process. By demonstrating the skills listed in each section, students should be able to meet the Learning Outcome for Literacy in History/Social Studies.

Note that the standards in this section are not designed for implementation in an English/Language Arts classroom. Instead, they provide guidance to content area teachers in grades 6-12 (e.g., History/Social Studies teachers, Science teachers, Career and Technical Education teachers, etc.) on expectations for integrating reading and writing skills into their classrooms.

In Literacy in History/Social Studies, students are expected to do the following:

LEARNING OUTCOMES	LH.1: LEARNING OUTCOME FOR LITERACY IN HISTORY/SOCIAL STUDIES	
	Read and comprehend history/social studies texts independently and proficiently, and write effectively for a variety of discipline-specific tasks, purposes, and audiences	
	Indiana Academic Standards	Content Connector
GRADES 6-8	6-8.LH.1.1: Read and comprehend history/social studies texts within a range of complexity appropriate for grades 6-8 independently and proficiently by the end of grade 8.	6-8.LH.1.1.a.1: Read and comprehend history/social studies texts within a range of complexity appropriate for grades 6-8 independently and proficiently by the end of grade 8.
	6-8.LH.1.2: Write routinely over a variety of time frames for a range of discipline-specific tasks, purposes, and audiences.	6-8.LH.1.2.a.1: Write routinely over a variety of time frames for a range of discipline-specific tasks, purposes, and audiences.
GRADES 9-10	9-10.LH.1.1: Read and comprehend history/social studies texts within a range of complexity appropriate for grades 9-10 independently and proficiently by the end of grade 10.	9-10.LH.1.1.a.1: Read and comprehend history/social studies texts within a range of complexity appropriate for grades 9-10 independently and proficiently by the end of grade 10.

GRADES 11-12	9-10.LH.1.2: Write routinely over a variety of time frames for a range of discipline-specific tasks, purposes, and audiences.	9-10.LH.1.2.a.1: Write routinely over a variety of time frames for a range of discipline-specific tasks, purposes, and audiences.
	11-12.LH.1.1: Read and comprehend history/social studies texts within a range of complexity appropriate for grades 11-CCR independently and proficiently by the end of grade 12.	11-12.LH.1.1.a.1: Read and comprehend history/social studies texts within a range of complexity appropriate for grades 11-CCR independently and proficiently by the end of grade 12.
	11-12.LH.1.2: Write routinely over a variety of time frames for a range of discipline-specific tasks, purposes, and audiences.	11-12.LH.1.2.a.1: Write routinely over a variety of time frames for a range of discipline-specific tasks, purposes, and audiences.

LH.2: KEY IDEAS AND TEXTUAL SUPPORT (READING)			
Extract and construct meaning from history/social studies texts using a variety of comprehension skills			
Indiana Academic Standards		Content Connector	
KEY IDEAS AND TEXTUAL SUPPORT	GRADES 6-8	6-8.LH.2.1: Cite specific textual evidence to support analysis of primary and secondary sources.	6-8.LH.2.1.a.1: Cite specific textual evidence to support analysis of primary and secondary sources.
		6-8.LH.2.2: Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.	6-8.LH.2.2: Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.
		6-8.LH.2.3: Identify key steps in a text’s description of a process related to history/social studies (e.g., <i>how a bill becomes a law, how interest rates are raised or lowered</i>).	6-8.LH.2.3: Identify key steps in a text’s description of a process related to history/social studies (e.g., <i>how a bill becomes a law, how interest rates are raised or lowered</i>).
KEY IDEAS AND TEXTUAL SUPPORT	GRADES 9-10	9-10.LH.2.1: Cite specific textual evidence to support analysis of primary and secondary sources, attending to such features as the date and origin of the information.	9-10.LH.2.1.a.1: Cite specific textual evidence to support analysis of primary and secondary sources, attending to such features as the date and origin of the information.
		9-10.LH.2.2: Determine the central ideas or information of a primary or secondary source; provide an accurate summary of how key events or ideas develop over the course of the text.	9-10.LH.2.2.a.1: Determine the central ideas or information of a primary or secondary source; provide an accurate summary of how key events or ideas develop over the course of the text.
		9-10.LH.2.3: Analyze in detail a series of events described in a text; determine whether earlier events caused later ones or simply preceded them.	9-10.LH.2.3.a.1: Analyze in detail a series of events described in a text; determine whether earlier events caused later ones or simply preceded them.
KEY IDEAS AND TEXTUAL SUPPORT	GRADES 11-12	11-12.LH.2.1: Cite specific textual evidence to support analysis of primary and secondary sources, connecting insights gained from specific details to an understanding of the text as a whole.	11-12.LH.2.1.a.1: Cite specific textual evidence to support analysis of primary and secondary sources, connecting insights gained from specific details to an understanding of the text as a whole.

		<p>11-12.LH.2.2: Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas.</p>	<p>11-12.LH.2.2.a.1: Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas.</p>
		<p>1-12.LH.2.3: Evaluate various explanations for actions or events, and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.</p>	<p>11-12.LH.2.3.a.1: Evaluate various explanations for actions or events, and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain</p>

LH.3: STRUCTURAL ELEMENTS AND ORGANIZATION (READING)		
Build understanding of history/social studies texts, using knowledge of structural organization and author's purpose and message		
Indiana Academic Standards		Content Connector
GRADES 6-8	6-8.LH.3.1: Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.	6-8.LH.3.1.a.1: Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.
	6-8.LH.3.2: Describe how a text presents information (e.g., <i>sequentially, comparatively, causally</i>).	6-8.LH.3.2.a.1: Describe how a text presents information (e.g., <i>sequentially, comparatively, causally</i>).
	6-8.LH.3.3: Identify aspects of a text that reveal an author's perspective or purpose (e.g., <i>loaded language, inclusion or avoidance of particular facts</i>).	6-8.LH.3.3.a.1: Identify aspects of a text that reveal an author's perspective or purpose (e.g., <i>loaded language, inclusion or avoidance of particular facts</i>).
GRADES 9-10	9-10.LH.3.1: Determine the meaning of words and phrases as they are used in a text, including vocabulary describing political, social, or economic aspects of history/social studies.	9-10.LH.3.1.a.1: Determine the meaning of words and phrases as they are used in a text, including vocabulary describing political, social, or economic aspects of history/social studies.
	9-10.LH.3.2: Analyze how a text uses structure to emphasize key points or advance an explanation or analysis.	9-10.LH.3.2.a.1: Analyze how a text uses structure to emphasize key points or advance an explanation or analysis.
	9-10.LH.3.3: Compare the perspectives of two or more authors for how they treat the same or similar topics, including which details they include and emphasize in their respective accounts.	9-10.LH.3.3.a.1: Compare the perspectives of two or more authors for how they treat the same or similar topics, including which details they include and emphasize in their respective accounts.
GRADES 11-12	11-12.LH.3.1: Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text (e.g., <i>how Madison defines faction in Federalist No. 10</i>).	11-12.LH.3.1.a.1: Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text (e.g., <i>how Madison defines faction in Federalist No. 10</i>).
	11-12.LH.3.2: Analyze in detail how a complex primary source is structured, including how key sentences, paragraphs, and larger portions of the text contribute to the whole.	11-12.LH.3.2.a.1: Analyze in detail how a complex primary source is structured, including how key sentences, paragraphs, and larger portions of the text contribute to the whole.
	11-12.LH.3.3: Evaluate authors' differing perspectives on the same historical event or issue by assessing the authors' claims, reasoning, and evidence.	11-12.LH.3.3.a.1: Evaluate authors' differing perspectives on the same historical event or issue by assessing the authors' claims, reasoning, and evidence.

LH.4: SYNTHESIS AND CONNECTION OF IDEAS (READING)		
Build understanding of history/social studies texts by synthesizing and connecting ideas and evaluating specific claims		
Indiana Academic Standards		Content Connector
GRADES 6-8	6-8.LH.4.1: Integrate visual information (e.g., <i>charts, graphs, photographs, videos, or maps</i>) with other information in print and digital texts.	6-8.LH.4.1.a.1: Integrate visual information (e.g., <i>charts, graphs, photographs, videos, or maps</i>) with other information in print and digital texts.
	6-8.LH.4.2: Distinguish among fact, opinion, and reasoned judgment in a text.	6-8.LH.4.2.a.1: Distinguish among fact, opinion, and reasoned judgment in a text.
	6-8.LH.4.3: Compare and contrast treatments of the same topic in a primary and secondary source.	6-8.LH.4.3.a.1: Compare and contrast treatments of the same topic in a primary and secondary source.
GRADES 9-10	9-10.LH.4.1: Integrate quantitative or technical analysis (e.g., <i>charts, research data</i>) with qualitative analysis in print or digital text.	9-10.LH.4.1.a.1: Integrate quantitative or technical analysis (e.g., <i>charts, research data</i>) with qualitative analysis in print or digital text.
	9-10.LH.4.2: Assess the extent to which the reasoning and evidence in a text support the author’s claims.	9-10.LH.4.2.a.1: Assess the extent to which the reasoning and evidence in a text support the author’s claims.
	9-10.LH.4.3: Analyze the relationships among primary and secondary sources on the same topic.	9-10.LH.4.3.a.1: Analyze the relationships among primary and secondary sources on the same topic.
GRADES 11-12	11-12.LH.4.1: Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., <i>visually, quantitatively, as well as in words</i>) in order to address a question or solve a problem.	11-12.LH.4.1.a.1: Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., <i>visually, quantitatively, as well as in words</i>) in order to address a question or solve a problem.
	11-12.LH.4.2: Evaluate an author’s premises, claims, and evidence by corroborating or challenging them with other information.	11-12.LH.4.2.a.1: Evaluate an author’s premises, claims, and evidence by corroborating or challenging them with other information.
	11-12.LH.4.3: Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.	11-12.LH.4.3.a.1: Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.

SYNTHESIS AND CONNECTION OF IDEAS

WRITING GENRES	LH.5: WRITING GENRES (WRITING)		
	Write for different purposes and to specific audiences or people		
	Indiana Academic Standards		Content Connector
	GRADES 6-8	6-8.LH.5.1: Write arguments focused on discipline-specific content.	6-8.LH.5.1.a.1: Write arguments focused on discipline-specific content.
		6-8.LH.5.2: Write informative texts, including analyses of historical events.	6-8.LH.5.2.a.1: Write informative texts, including analyses of historical events.
	GRADES 9-10	9-10.LH.5.1: Write arguments focused on discipline-specific content.	9-10.LH.5.1.a.1: Write arguments focused on discipline-specific content.
		9-10.LH.5.2: Write informative texts, including analyses of historical events.	9-10.LH.5.2.a.1: Write informative texts, including analyses of historical events.
	GRADES 11-12	11-12.LH.5.1: Write arguments focused on discipline-specific content.	11-12.LH.5.1.a.1: Write arguments focused on discipline-specific content.
		11-12.LH.5.2: Write informative texts, including analyses of historical events.	11-12.LH.5.2.a.1: Write informative texts, including analyses of historical events.

THE WRITING PROCESS	LH.6: THE WRITING PROCESS (WRITING)	
	Produce coherent and legible documents by planning, drafting, revising, editing, and collaborating with others	
	Indiana Academic Standards	Content Connector
GRADES 6-8	6-8.LH.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults.	6-8.LH.6.1.a.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach; and edit to produce and strengthen writing that is clear and coherent, with some guidance and support from peers and adults.

		6-8.LH.6.2: Use technology to produce and publish writing and present the relationships between information and ideas clearly and efficiently.	6-8.LH.6.2.a.1: Use technology to produce and publish writing and present the relationships between information and ideas clearly and efficiently.
	GRADES 9-10	9-10.LH.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach, focusing on addressing what is most significant for a specific purpose and audience; and edit to produce and strengthen writing that is clear and coherent.	9-10.LH.6.1.a.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach, focusing on addressing what is most significant for a specific purpose and audience; and edit to produce and strengthen writing that is clear and coherent.
		9-10.LH.6.2: Use technology to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.	9-10.LH.6.2.a.1: Use technology to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.
	GRADES 11-12	11-12.LH.6.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach, focusing on addressing what is most significant for a specific purpose and audience; and edit to produce and strengthen writing that is clear and coherent.	11-12.LH.6.1.a.1: Plan and develop; draft; revise using appropriate reference materials; rewrite; try a new approach, focusing on addressing what is most significant for a specific purpose and audience; and edit to produce and strengthen writing that is clear and coherent.
		11-12.LH.6.2: Use technology to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	11-12.LH.6.2.a.1: Use technology to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

THE RESEARCH PROCESS	LH.7: THE RESEARCH PROCESS (WRITING)	
	Build knowledge about the research process and the topic under study by conducting short or more sustained research	
	Indiana Academic Standards	Content Connector
GRADES 6-8	6-8.LH.7.1: Conduct short research assignments and tasks to answer a question (including a self-generated question), drawing on several sources and generating	6-8.LH.7.1.a.1: Conduct short research assignments and tasks to answer a question (including a self-generated question), drawing

		additional related, focused questions that allow for multiple avenues of exploration.	on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
		6-8.LH.7.2: Gather relevant information from multiple sources, using search terms effectively; annotate sources; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation (e.g., <i>APA or Chicago</i>).	6-8.LH.7.2.a.1: Gather relevant information from multiple sources, using search terms effectively; annotate sources; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation (e.g., <i>APA or Chicago</i>).
		6-8.LH.7.3: Draw evidence from informational texts to support analysis, reflection, and research.	6-8.LH.7.3.a.1: Draw evidence from informational texts to support analysis, reflection, and research.
	GRADES 9-10	9-10.LH.7.1: Conduct short as well as more sustained research assignments and tasks to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	9-10.LH.7.1.a.1: Conduct short as well as more sustained research assignments and tasks to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
		9-10.LH.7.2: Gather relevant information from multiple authoritative sources, using advanced searches effectively; annotate sources; assess the usefulness of each source in answering the research question; synthesize and integrate information into the text selectivity to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation (e.g., <i>APA or Chicago</i>).	9-10.LH.7.2.a.1: Gather relevant information from multiple authoritative sources, using advanced searches effectively; annotate sources; assess the usefulness of each source in answering the research question; synthesize and integrate information into the text selectivity to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation (e.g., <i>APA or Chicago</i>).
		9-10.LH.7.3: Draw evidence from informational texts to support analysis, reflection, and research.	9-10.LH.7.3.a.1: Draw evidence from informational texts to support analysis, reflection, and research.
	GRADES 11-12	11-12.LH.7.1: Conduct short as well as more sustained research assignments and tasks to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	11-12.LH.7.1.a.1: Conduct short as well as more sustained research assignments and tasks to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation
		11-12.LH.7.2: Gather relevant information from multiple types of authoritative sources, using advanced searches effectively; annotate sources; assess the strengths and limitations of each source in terms of the specific task,	11-12.LH.7.2.a.1: Gather relevant information from multiple types of authoritative sources, using advanced searches effectively; annotate sources; assess the strengths and limitations of each source in terms of the specific task, purpose,

		<p>purpose, and audience; synthesize and integrate information into the text selectivity to maintain the flow of ideas, avoiding plagiarism and overreliance on any once source and following a standard format for citation (e.g., <i>APA or Chicago</i>).</p>	<p>and audience; synthesize and integrate information into the text selectivity to maintain the flow of ideas, avoiding plagiarism and overreliance on any once source and following a standard format for citation (e.g., <i>APA or Chicago</i>).</p>
		<p>11-12.LH.7.3: Draw evidence from informational texts to support analysis, reflection, and research.</p>	<p>11-12.LH.7.3.a.1: Draw evidence from informational texts to support analysis, reflection, and research.</p>

Economics

Standard 1: Scarcity and Economic Reasoning

Students understand that productive resources are limited; therefore, people, institutions, and governments cannot have all the goods and services they want. As a result, people, institutions, and governments must choose some things and give up others.

IAS	Content Connector
E.1.2: Explain that entrepreneurs combine productive resources to produce goods and services with the goal of making a profit.	E.1.2.a.1: Explain that entrepreneurs combine productive resources to produce goods and services with the goal of making a profit.
E.1.3: Identify incentives and explain how they influence decisions.	E.1.3.a.1: Identify incentives and explain how they influence decisions.
E.1.4: Explain that voluntary exchange occurs when households, businesses, and governments expect to gain.	E.1.4.a.1: Explain that voluntary exchange occurs when households, businesses, and governments expect to gain.
E.1.5: Define scarcity and explain how choices incur opportunity costs and tradeoffs.	E.1.5.a.1: Define scarcity and explain how choices incur opportunity costs and tradeoffs.
E.1.6: Use a production possibilities curve to explain the concepts of choice, scarcity, opportunity cost, tradeoffs, unemployment, productivity, and growth.	
E.1.7: Describe and compare the various economic systems (traditional, market, command, mixed); explain their strengths and weaknesses.	
E.1.8: Describe how clearly defined and enforced property rights are essential to a market economy.	
E.1.9: Diagram and explain the circular flow model of a market economy.	E.1.9.a.1: Diagram and explain the circular flow model of a market economy.

Standard 2: Supply and Demand

Students understand the role that supply and demand, prices, and profits play in determining production and distribution in a market economy.

IAS	Content Connector
E.2.1: Define supply and demand and explain the causes of the Law of Supply and the Law of Demand.	E.2.1.a.1: Define supply and demand and explain the causes of the Law of Supply and the Law of Demand.
E.2.2: Recognize that consumers ultimately determine what is produced in a market economy.	E.2.2.a.1: Recognize that consumers ultimately determine what is produced in a market economy.
E.2.3: Illustrate how supply and demand determine equilibrium price and quantity.	E.2.3.a.1: Illustrate how supply and demand determine equilibrium price and quantity.
E.2.4: Identify factors that cause changes in market supply and demand and how these changes affect price and quantity in a competitive market.	E.2.4.a.1: Identify factors that cause changes in market supply and demand and how these changes affect price and quantity in a competitive market.
E.2.5: Describe how elasticity (price) sends signals to buyers and sellers.	E.2.5.a.1: Describe how elasticity (price) sends signals to buyers and sellers.
E.2.6: Demonstrate how government wage and price controls, such as rent controls and minimum wage laws, create shortages and surpluses.	E.2.6.a.1: Demonstrate how government wage and price controls, such as rent controls and minimum wage laws, create shortages and surpluses.
E.2.7: Describe how the earnings of workers are determined by the market value of the product produced and workers' productivity, as well as other factors.	E.2.7.a.1: Describe how the earnings of workers are determined by the market value of the product produced and workers' productivity, as well as other factors.

Economics

IAS	Content Connector
E.2.8: Illustrate how physical and human capital investment raise productivity and future standards of living.	E.2.8.a.1: Illustrate how physical and human capital investment raise productivity and future standards of living.

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Economics

Standard 3: Market Structures

Students understand the role of business firms and analyze the various types of market structures in the United States economy.

IAS	Content Connector
E.3.1: Identify the ways that firms raise financial capital and explain the advantages and disadvantages of each.	
E.3.2: Demonstrate how firms determine optimum levels of output by comparing marginal cost and marginal revenue.	
E.3.3: Compare and contrast the basic characteristics of the four market structures: monopoly, oligopoly, monopolistic competition, and pure competition; explain how various amounts of competition affect price and quantity.	
E.3.4: Recognize the benefits of natural monopolies (economies of scale) and explain the purposes of government regulation of these monopolies.	

Standard 4 : The Role of Government

Students understand that typical microeconomic roles of government in a market or mixed economy are the provision of public goods and services, redistribution of income, protection of property rights, and resolution of market failures.

IAS	Content Connector
E.4.1: Explain the roles of government in a market economy.	E.4.1.a.1: Define Market Economy
E.4.2 Explain how markets underproduce public goods and explain why the government has an interest in producing these public goods.	E.4.2.a.1: Explain how markets underproduce public goods and explain why the government has an interest in producing these public goods.
E.4.3: Describe how the government taxes negative externalities (spillovers) and subsidizes positive externalities (spillovers) to resolve the inefficiencies they cause.	
E.4.4: Describe major revenue and expenditure categories and their respective proportions of state and federal budgets.	
E.4.5: Define progressive, proportional, and regressive taxation and determine whether different types of taxes (including income, sales, and Social Security) are progressive, proportional, or regressive.	
E.4.6: Explain how costs of government policies may exceed benefits because social or political goals (rather than economic efficiency) are being pursued.	
E.4.7: Define the national debt, explain the effects of the debt on the economy, and explain how to achieve a balanced budget.	E.4.7.a.1: Define types of taxes (including income, sales, and Social Security)

Standard 5: National Economic Performance

Students understand the means by which economic performance is measured and the causes and effects of business cycles in a market economy.

Economics

IAS	Content Connector
E.5.1: Explain measures of a country's economic performance such as gross domestic product (GDP), unemployment, and inflation.	
E.5.2: Recognize that a country's overall level of income, employment, and prices is determined by rational spending and production decisions of households, firms, and government.	
E.5.3: Explain the limitations of using GDP to measure economic welfare.	
E.5.4: Identify the different causes of inflation (including cost-push and demand-pull) and explain the impact of inflation on economic decisions.	
E.5.5: Explain and illustrate the impact of changes in aggregate supply and aggregate demand.	
E.5.6: Explain the causes and effects of business cycles in a market economy.	
E.5.7: Explain the different types of unemployment.	E.5.7.a.1: Explain the different types of unemployment.
E.5.8: Describe the impact of unemployment and unexpected inflation on an economy and how individuals and organizations try to protect themselves.	E.5.8.a.1: Describe the impact of unemployment and unexpected inflation on an economy and how individuals and organizations try to protect themselves.

Standard 6: Money and the Role of Financial Institutions

Students understand the role of money and financial institutions in a market economy.

IAS	Content Connector
E.6.1: Explain the basic functions of money.	E.6.1.a.1: Explain the basic functions of money.
E.6.2: Identify the composition of the money supply of the United States.	E.6.2.a.1: Identify the composition of the money supply of the United States.
E.6.3: Explain the roles of financial institutions.	E.6.3.a.1: Explain the roles of financial institutions.
E.6.4: Demonstrate how banks create money through the principle of fractional reserve banking.	E.6.4.a.1: Demonstrate how banks create money through the principle of fractional reserve banking.
E.6.5: Describe the structure and functions of the Federal Reserve System.	E.6.5.a.1: Describe the structure and functions of the Federal Reserve System.
E.6.6: Explain how interest rates act as an incentive for savers and borrowers.	E.6.6.a.1: Explain how interest rates act as an incentive for savers and borrowers.
E.6.7: Compare and contrast different types of financial investments.	E.6.7.a.1: Compare and contrast different types of financial investments.
E.6.8: Demonstrate how supply and demand determine equilibrium price and quantity in the financial markets.	E.6.8.a.1: Demonstrate how supply and demand determine equilibrium price and quantity in the financial markets.

Standard 7: Economic Stabilization

Students understand the macroeconomic role of the government in developing and implementing economic stabilization policies and how these policies impact the macroeconomy.

IAS	Content Connector
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Economics

E.7.1: Define and explain fiscal and monetary policy.	
E.7.2: Explain the tools of fiscal and monetary policy.	
E.7.3: Analyze how the government uses fiscal policy to promote price stability, full employment, and economic growth.	
E.7.4: Explain how the use of fiscal policy affects budget deficits or surpluses and the national debt.	
E.7.5: Analyze how the Federal Reserve uses monetary policy to promote price stability, full employment, and economic growth.	
E.7.6: Compare and contrast the major macroeconomic theories.	

Standard 8: Trade

Students understand why households, businesses, and governments trade goods and services and how trade affects the economies of the world.

IAS	Content Connector
E.8.1: Explain that most trade occurs because producers have a comparative advantage (rather than an absolute advantage) in the production of a good or service.	E.8.1.a.1: Explain that most trade occurs because producers have a comparative advantage (rather than an absolute advantage) in the production of a good or service.
E.8.2: Explain the benefits of trade among households and countries.	E.8.2.a.1: Explain the benefits of trade among households and countries.
E.8.3: Explain the difference between balance of trade and balance of payments.	E.8.3.a.1: Explain the difference between balance of trade and balance of payments.
E.8.4: Define and explain the impact of trade barriers, such as quotas and tariffs, and analyze why countries erect them.	
E.8.5: Evaluate the arguments for and against free trade.	E.8.5.a.1: Define free trade.
	E.8.5.a.2: Tell arguments for and against free trade.
E.8.6: Explain how changes in exchange rates affects the value of imports and exports.	E.8.6.a.1: Define import, export
	E.8.6.a.2: Tell how import and export exchange rate

Geography and History of the World

Standard 1: Culture Hearths

Students examine the physical and human geographic factors associated with the origin and development of culture hearths in various regions of the world.

IAS	Content Connector
<p>GHW.1.1: Use maps, timelines and/or other graphic representations to identify and describe the location, distribution and main events in the development of culture hearths in Asia, Mesoamerica and North Africa. Examples: Irrigation-based civilizations; Rainforest; Land-based civilization</p>	<p>GHW.1.1.a.1: Use Maps to Match location of Cultural Origin of Cultural Hearths in Asia, Mesoamerica and North America Examples: Irrigation-based civilizations; Rainforest; Land-based civilization (RIVER VALLEY Civilizations)</p>
<p>GHW.1.2: Ask and answer geographic and historical questions about the locations and growth of culture hearths. Assess why some of these culture hearths have endured to this day, while others have declined or disappeared</p>	<p>GHW.1.2.a.1: Identify geographical features of Early Civilizations and the reason for the growth/development/decline Example: Nile River in Egypt</p>
<p>GHW.1.3: Analyze agricultural hearths and exchanges of crops among regions. Evaluate the impact of agriculture on the subsequent development of culture hearths in various regions of the world.</p>	<p>GHW.1.3.a.1: Identify agricultural characteristics in various regions of the world and how it impacted development Examples: Hunting and gather – agriculture</p>
<p>GHW.1.4: Identify and describe the factors that explain how the local and regional human and physical environments of selected culture hearths were modified over time in terms of such features as urban development and agricultural activities.</p>	<p>GHW.1.4.a.1: Compare/contrast hunting and gathering societies with agriculturally based societies</p>

Standard 2: World Religions

Students examine the physical and human geographic factors associated with the origins, spread and impact of major world religions in different regions of the world.

IAS	Content Connector
<p>GHW.2.1: Map the development over time of world religions from their points of origin and identify those that exhibit a high degree of local and/or international concentration. Examples: Universal religions/beliefs: Judaism (Jerusalem), Christianity (Jerusalem), Islam (Mecca Medina) and Buddhism (Varanasi); Ethnic religions: Hinduism (Indus River), Confucianism and Taoism (Yellow River), Shintoism (Japan)</p>	<p>GHW.2.1.a.1: Match the origins of world religions Examples: Universal religions/beliefs: Judaism (Jerusalem), Christianity (Jerusalem), Islam (Mecca, Medina) and Buddhism (Varanasi); Ethnic religions: Hinduism (Indus River), Confucianism and Taoism (Yellow River), Shintoism (Japan)</p>
<p>GHW.2.2: Differentiate among selected countries in terms of how their identities, cultural and physical environments, and functions and forms of government are affected by world religions. Examples: Spain: Muslim, Jewish and Christian influences on government, considering their similarities and differences (100–1500); Russia: influences of the Eastern Orthodox Church (1400–1917); Iran and Iraq: how religion (Shia Islam and Sunni Islam) affects culture and government (1917–present); Israel: the Jewish state and a possible future Palestinian State (1948–present)</p>	<p>GHW.2.2.a.1: Identify the physical environment, form of government, affected by world religion Examples: Spain: Muslim, Jewish and Christian influences on government, considering their similarities</p>
<p>GHW.2.3: Compare and contrast different religions in terms of perspectives on the environment and attitudes toward resource use, both today and in the past.</p>	<p>GHW.2.3.a.1: Compare contrast attitude and resources of different religions Examples: Japan (Shintoism and Buddhism): natural beauty;</p>

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IAS	Content Connector
<p>Examples: Japan (Shintoism and Buddhism): natural beauty; India (Hinduism and Jainism): reverence for living things, especially for selected animal species; Sub-Saharan Africa (rise of animism): animistic perception of land, resources and natural events; Western World (Christianity): environment and attitudes toward resource use</p>	<p>India (Hinduism and Jainism): reverence for living things, especially for selected animal species;</p>
<p>GHW.2.4: Analyze and assess the rise of fundamentalist movements in the world’s major religions during contemporary times (1980–present) and describe the relationships between religious fundamentalism and the secularism and modernism associated with the Western tradition.</p> <p>Examples: Shiite Islamic fundamentalism in Iran and its view of the West in general and the United States in particular as “The Great Satan” (1970–present); fundamentalism in India and its relationship to the government of India (1980–present)</p>	

Standard 3: Population Characteristics, Distribution and Migration

Students examine the physical and human geographic factors associated with population characteristics, distribution and migration in the world and the causes and consequences associated with them.

IAS	Content Connector
<p>GHW.3.1: Map and analyze the distribution of the world’s human population for different time periods noting the population characteristics and population density for specific regions.</p>	<p>GHW.3.1.a.1: Identify the meaning of population.</p>
<p>GHW.3.2: Identify and describe the push-pull factors that resulted in the migration of human population over time and detect changes in these factors.</p>	
<p>GHW.3.3: Analyze the changes in population characteristics and physical and human environments that resulted from the migration of peoples within, between, and among world regions.</p>	<p>GHW.3.3.a.1: Identify reasons for changes in population within a local or regional area Example: Environment, employment, government, sanitation, access to resources</p>
<p>GHW.3.4: Give examples of and evaluate how the physical and human environments in different regions have changed over time due to significant population growth or decline.</p>	
<p>GHW.3.5: Analyze population trends in the local community and suggest the impact of these trends on the future of the community in relation to issues such as development, employment, health, cultural diversity, schools, political representation and sanitation.</p>	

Standard 4: Exploration, Conquest, Imperialism and Post-Colonialism

Students examine the physical and human geographic factors associated with the origins, major players and events, and consequences of worldwide exploration, conquest and imperialism.

IAS	Content Connector
<p>GHW.4.1: Explain the causes and conditions of worldwide voyages of exploration, discovery and conquest. Identify the countries involved. Provide examples of how people modified their view of world regions as a consequence of these voyages.</p>	<p>GHW.4.1.a.1: Identify reasons for exploration Example: Technology, creation of colonies. Spread of religion, riches Match famous Explorers to countries and voyage routes</p>

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IAS	Content Connector
<p>GHW.4.2: Use a variety of text (writing, maps, timelines and/or other graphic representations) to show the movement, spread and changes in the worldwide exchange of flora, fauna and pathogens that resulted from transoceanic voyages of exploration and exchanges between peoples in different regions. Assess the consequences of these encounters for the people and environments involved.</p>	<p>GHW.4.2.a.1: Trace voyage to show movement and spread of pathogens that resulted in transoceanic voyages. List consequences of these encounters Example: spread of diseases</p>
<p>GHW.4.3: Identify and compare the main causes, players, and events of imperialism during different time periods. Examine the global extent of imperialism using a series of political maps.</p>	
<p>GHW.4.4: Analyze and assess how the physical and human environments (including languages used) of places and regions changed as the result of differing imperialist and colonial policies. Examples: Native Americans in Mesoamerica in relationship to Spanish conquistadors, missionaries and traders; Africa and the Atlantic slave trade involving Europeans and Africans; the Arabic-Islamic slave trade involving indigenous African peoples and directed northward and eastward within the continent of Africa and into the Middle East; and the slave trade involving only indigenous black Africans in the interior of the continent; economic dislocations in India (1500–1947)</p>	<p>GHW.4.4.a.1: Define Imperialism- creation of colonies</p>
<p>GHW.4.5: Analyze and assess ways that colonialism and imperialism have persisted and continue to evolve in the contemporary world.</p>	

Standard 5: Urban Growth

Students examine the physical and human geographic factors associated with the origin and growth of towns and cities in different regions of the world and with the internal spatial structure of those urban centers.

IAS	Content Connector
<p>GHW.5.1: Ask and answer geographic and historic questions about the origin and growth of towns and cities in different regions of the world and in different time periods. Compare and contrast the factors involved in the location and growth of towns and cities for different time periods.</p>	<p>GHW.5.1.a.1: Match the origin of growth different towns and cities Example: steam, coal- used for production in factories</p> <p>GHW.5.1.a.2: Using a timeline, show progression of growth in time periods</p>
<p>GHW.5.2: Describe, using a variety of text (writing, maps, timelines and/or other graphic presentations), the worldwide trend toward urbanization and the changing function of cities. Assess the impact of factors such as locational advantages and disadvantages, changing transportation technologies, population growth, changing agricultural production, and the demands of industry on this trend. Examples: Latin America: compare and contrast the urban centers of Mexico, Brazil and Peru (1800–present); New Orleans:</p>	

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IAS	Content Connector
<p>growth as gateway to the heartland of the United States (1803–present); Tokyo: from semi-isolation to widespread international interaction (1853–present)</p>	
<p>GHW.5.3: Describe how the internal structure of cities is similar and different in various regions of the world. Analyze and explain why these similarities and differences in structure exist. Examples: Examine similarities and differences among the urban development of Salt Lake City (central temple focus), Paris (circular with spokes), Rio de Janeiro (physical geographic constraints of sea and mountains), and Mumbai (peninsular location)</p>	
<p>GHW.5.4: Analyze and assess the impact of urbanization on the physical and human environments in various parts of the world.</p>	

Standard 6: Innovations and Revolutions

Students examine physical and human geographic factors that influenced the origins, major events, diffusion and global consequences of new ideas in agriculture, science, culture, politics, industry and technology.

IAS	Content Connector
<p>GHW.6.1: Distinguish between violent and non-violent revolution. Describe the causes and events of political revolutions in two distinct regions of the world and use maps, timelines and/or other graphic representations to document the spread of political ideas that resulted from those events to other regions of the world.</p>	
<p>GHW.6.2: Prepare maps, timelines and/or other graphic representations showing the origin and spread of specific innovations (e.g. Explosives; paper; printing press; steam engine; pasteurization; electricity; immunization; atomic energy; and computer and digital technology). Assess the impact of these innovations on the human and physical environments of the regions to which they spread.</p>	<p>GHW.6.2.a.1: Prepare maps, timelines and/or other graphic representations showing the origin and spread of specific innovations (e.g. Explosives; paper; printing press; steam engine; pasteurization; electricity; immunization; atomic energy; and computer and digital technology). Assess the impact of these innovations on the human and physical environments of the regions to which they spread.</p>
<p>GHW.6.3: Map the spread of innovative art forms and scientific thought from their origins to other world regions. Analyze how the spread of these ideas influenced developments in art and science for different places and regions of the world. Examples: Italian Renaissance and the growth of egg tempera paintings and frescoes, chemistry of oil paints (1500s); European Renaissance and the development of scientific ideas (1600–1800); England and the Industrial Revolution and its diffusion (1700–present); compare and contrast the spread of Asian, African and Latin American art forms (1900s–present); development of twentieth century music (jazz, etc.) in North America (1900s–present)</p>	<p>GHW.6.3.a.1: Map the spread of innovative art forms and scientific thought from their origins to other world regions. Analyze how the spread of these ideas influenced developments in art and science for different places and regions of the world. Examples: Italian Renaissance and the growth of egg tempera paintings and frescoes, chemistry of oil paints (1500s); European Renaissance and the development of scientific ideas (1600–1800); England and the Industrial Revolution and its diffusion (1700–present); compare and contrast the spread of Asian, African and Latin American art forms (1900s–present); development of twentieth century music (jazz, etc.) in North America (1900s–present)</p>
<p>GHW.6.4: Analyze how transportation and communication changes (e.g. Railroads; Automobiles and Airplanes; Computer Technology; Television; Cell Phones; Satellite Communications) have led to both cultural convergence and divergence in the world.</p>	<p>GHW.6.4.a.1: Analyze how transportation and communication changes (e.g. Railroads; Automobiles and Airplanes; Computer Technology; Television; Cell Phones; Satellite Communications) have led to both cultural convergence and divergence in the world.</p>

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IAS	Content Connector
<p>GHW.6.5: Analyze and assess the impact of the four major agricultural revolutions* on the world’s human and physical environments. * agricultural revolutions, in historical order: (1) fire used to alter natural vegetation; (2) domestication of plants; (3) industrialization and mechanization of agriculture with use of fertilizers, pesticides and herbicides; (4) applied microscopia for selective genetic manipulation</p>	<p>GHW.6.5.a.1: Analyze and assess the impact of the four major agricultural revolutions* on the world’s human and physical environments. * agricultural revolutions, in historical order: (1) fire used to alter natural vegetation; (2) domestication of plants; (3) industrialization and mechanization of agriculture with use of fertilizers, pesticides and herbicides; (4) applied microscopia for selective genetic manipulation</p>
<p>GHW.6.6: Compare and contrast the impact of the Industrial Revolution on developed countries with the economic processes acting upon less developed, and developing, countries in the contemporary world.</p>	<p>GHW.6.6.a.1: Identify Industrial Revolution</p>

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Geography and History of the World

Standard 7: Conflict and Cooperation

Students explore the physical and human geographic factors affecting the origins and the local, regional and supranational consequences of conflict and cooperation between and among groups of people.*

IAS	Content Connector
<p>GHW.7.1: Recognize that conflict and cooperation among groups of people occur for a variety of reasons including nationalist, racial, ethnic, religious, political, economic and resource concerns that generally involve agreements and disagreements related to territory on Earth’s surface. Examples: Turkey and Iraq conflict and cooperation related to the headwaters of the Tigris and Euphrates Rivers (1900–present), U.S. and Canada conflict and cooperation related to salmon in the Straits of Georgia and Juan de Fuca (1950–present), and conflict within the country of Sudan between Arabic peoples in the north and black Africans in the south (1950–present)</p>	<p>GHW.7.1.a.1 Identify characteristics that could lead to conflict and mistreatment of human rights Example: the north and black Africans in the south (1950–present)</p>
<p>GHW.7.2: Analyze the physical and human factors involved in conflicts and violence related to nationalist, racial, ethnic, religious, economic, political, and/or resource issues in various parts of the world, over time. Assess the human and physical environmental consequences of the conflicts identified for study. Examples: Indian Sub-continent: British vs. Muslims vs. Hindus (1800–present); Northern Ireland: Protestants vs. Catholics (1900s); Southwest Asia: Iranians vs. Iraqi Shiites vs. Sunnis; Israelis vs. Palestinians vs. Arabs (1900s–present); Africa: tribal conflicts in Rwanda, Nigeria and Sudan (1900s–present); Europe: the creation of new nations from the former Austro-Hungarian and Russian Empires (1914–present); World War II and the Holocaust (1933–1945)</p>	
<p>GHW.7.3: Analyze and explain why some countries achieved independence peacefully through legal means and others achieved independence as a consequence of armed struggles or wars. Examples: Compare and contrast Czech Republic and Slovakia to former Yugoslavia (1900s), compare and contrast Ghana under Nkrumah and Kenya under Kenyatta (1950–70s), compare and contrast Gandhi’s (India) non-violent approach to independence compared to Algerian violent movement for independence from France (1950s) or to the Bolshevik’s (Russia) approach to independence from absolutism (1900s), and compare and contrast the independence movements by colonial Australia and South Africa (1900s)</p>	
<p>GHW.7.4: Prepare a variety of text (writing, maps, timelines and/or other graphic representations) to trace the development and geographic extent of a variety of regional and global cooperative organizations for different time periods. Describe their establishment and assess their success or lack of success, consequences for citizens, and the role of particular countries in achieving the goals the organizations were established to</p>	

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IAS	Content Connector
<p>accomplish. Examples: League of Nations, North Atlantic Treaty organization (NATO), United Nations (UN), North American Free Trade Association (NAFTA), Free Trade Association (FTA), World Trade Organization (WTO), World Health Organization (WHO), European Union (EU), Triple Entente, Quintuple Alliance and Free Trade Area of the Americas (FTAA)</p>	

Standard 8: Trade and Commerce

Students examine the physical and human geographic factors that encourage or impede economic interdependence between and/or among countries and the local, regional and global consequences of those exchanges.

IAS	Content Connector
<p>GHW.8.1: Use maps to show the location and distribution of Earth's resources and analyze how this distribution affects trade between and among countries and regions.</p>	
<p>GHW.8.2: Prepare graphic representations, such as maps, tables and timelines, to describe the global movement of goods and services between and among countries and world regions over time. Analyze and assess the patterns and networks of economic interdependence or lack of interdependence that result Examples: Latin American and Africa: describe near-subsistence agriculture (1800–present), United States: relate resources to the interstate highway system (present), Russia: discuss the importance of the BAM (Baikal-Amur Mainline Railway) project and the Trans-Siberian railroad system in making more resources accessible to world trade (present), Europe and China: compare and contrast the movement of goods and services (present)</p>	
<p>GHW.8.3: Analyze the impact of changing global patterns of trade and commerce on the state and local community and predict the impact of these patterns in the future.</p>	

Standard 9: Human and Environmental Interactions: Resources, Hazards and Health

Students examine the physical and human geographic factors associated with examples of how humans interact with the environment, such as deforestation, natural hazards and the spread of diseases, and the regional and global consequences of these interactions.

IAS	Content Connector
<p>GHW.9.1: Use maps to identify regions in the world where particular natural disasters occur frequently and analyze how the physical and human environments have been modified over time in response to environmental threats. Assess the success of international aid to these disasters.</p>	<p>GHW.9.1.a.1: Identify natural disasters how it affects the geographical area Example: Hurricane, flooding, earthquake, tsunami</p>
<p>GHW.9.2: Identify regional resource issues that may impede sustainability, economic expansion and/or diversification and assess the impact of these issues on the physical and human environments of specific regions Examples: United States: distribution of fresh water in western states; African Sahel: overgrazing vegetation, compounding</p>	<p>GHW.9.2.a.1: List ways natural disasters impact economy in certain areas.</p>

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IAS	Content Connector
<p>effects of drought and consequent desertification; Europe: dependence on the Persian Gulf for fossil energy.</p>	
<p>GHW.9.3: Identify and describe ways in which humans have used technology to modify the physical environment in order to settle areas in different world regions and evaluate the impact of these technologies on the physical and human environments affected. Examples: Netherlands: use of dams and dikes; United States (New Orleans): levees and dams; China: Three Gorges Dam on Yangtze River (Chang Jiang); Southwest Asia (Qatar and United Arab Emirates): changing the desert into areas of agriculture productivity and developing urban centers</p>	<p>GHW.9.3.a.1: List ways technology is used to warn and protect areas from Natural Disasters Example: United States (New Orleans): levees and dams; China: Three Gorges Dam on Yangtze River (Chang Jiang); Southwest Asia (Qatar and United Arab Emirates): changing the desert into areas of agriculture productivity and developing urban Centers</p>
<p>GHW.9.4: Distinguish and assess the human and physical factors associated with the spread of selected epidemics and/or pandemics over time Examples: Bubonic Plague, smallpox, cholera pandemic, Influenza pandemic, and describe the impact of this diffusion on countries and regions. Propose strategies for limiting the spread of diseases.</p>	<p>GHW.9.4.a.1: Discuss factors that are associated with the spread of selected epidemics or pandemics Examples: Bubonic Plague, smallpox, cholera pandemic, Influenza pandemic, and describe the impact of this diffusion on countries and regions. Propose strategies for limiting the spread of diseases.</p>

Standard 10: States, Nations and Nation-States

Students analyze and evaluate the physical and human geographic factors that contribute to the formation of states (countries) and the forces that function to either unite and bind a country together or to divide a country.

IAS	Content Connector
<p>GHW.10.1: Differentiate between a state (country) and a nation, specifically focusing on the concepts of territorial control and self-determination of internal and foreign affairs and analyze the relationship between nations and the states in which they lie. Examples: Iraq and Kurdistan (1930–present), China and Tibet (1949–present), and Spain and the Basque (1492–present)</p>	<p>GHW.10.1.a.1: Identify Characteristics between a state(country) and nation.</p>
<p>GHW.10.2: Analyze the formation of states (countries) in selected regions and identify and appraise the contribution of factors, such as nationalism, in their formation. Examples: The development of the United States from the 13 colonies (1763–1825), the development of the countries of Columbia and Venezuela from the Viceroyalty of New Granada (1775–1825), the formation of Germany (1848–1989), the formation of the Republic of China on Taiwan (1945–present), potential nationalistic movements with the Palestinians and Kurds (present)</p>	<p>GHW.10.2.a.1: Identify nationalism. State whether is uniting or dividing. Examples: The development of the United States from the 13 colonies (1763–1825)</p>
<p>GHW.10.3: Evaluate and predict the successes and failures of democratic reform movements in challenging authoritarian or despotic regimes in different countries. Examples: Brazil: formation (1820–1875), Russia: from Czar to federalism (1905–1995), the future of Iraq (1945–present), Korea (1945–present), South Africa: from white supremacy to black majority rule with protection of the rights of minorities (1900s), Nigeria: from dictatorship to democracy (1960–present)</p>	
<p>GHW.10.4: Investigate and assess the impact of imperialistic</p>	

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IAS	Content Connector
<p>policies on the formation of new countries in various regions of the world.</p> <p>Examples: The Netherlands and Indonesia (1750–1945), Great Britain and Kenya (1870–1970), Belgium and the Congo (1870–1970), France and Indo-China (1890–1954), United States and the Philippines (1898–1947), Portugal and Angola (1925–1975), and Japan and Korea (1910–1945)</p>	
<p>GHW.10.5: Use a variety of sources, such as atlases, written materials and statistical source materials, to identify countries of the world that are true nation-states and draw conclusions about why certain regions of the world contain more nation-states than others.</p> <p>Examples: The development of France (500–1850), compare Europe with Africa (1700–1990), the emergence of the federal state of Australia (1775–1925) and the increase of homogeneity in Japan (1945–present)</p>	<p>GHW.10.5.a.1: Identify countries of the world that are true nation-states.</p> <p>GHW.10.5.a.2: List reasons why counties fit the criteria of a true nation-state.</p>
<p>GHW.10.6: Analyze the human and physical geographic forces that either bind and unite (centripetal forces) or divide (centrifugal forces) a country or countries. Predict the impact of these forces on the future of these countries and analyze possible strategies that could be implemented to overcome the impact of centrifugal forces.</p> <p>Examples: Switzerland and Yugoslavia (1200–present); the emergence of countries in the Indian sub-continent (1775–1985); the road to federalism in Nigeria (1925–present); and the evolution of countries of contemporary Europe, such as Great Britain, France, Spain and Italy</p>	<p>GHW.10.6.a.1: List physical and geographical forces that bind or divide a country</p>

Standard 11: Sports, Recreation and Tourism

Students examine the physical and human geographic factors associated with sports, recreation and tourism along with the local and global consequences of these activities.

IAS	Content Connector
<p>GHW.11.1: Use graphic representations, such as maps and timelines, to describe the spread of specific sports and/or sporting events from their geographic origins and analyze the spatial patterns that emerge.</p>	<p>GHW.11.1.a.1: Use graphic representations, such as maps and timelines, to describe the spread of specific sports and/or sporting events from their geographic origins</p>
<p>GHW.11.2: Analyze the ways in which people’s changing views of particular places and regions as recreation and/or tourist destinations reflect cultural changes.</p> <p>Examples: Italy (Florence, Venice and Rome): formerly political, religious and commercial centers, becoming tourist centers; China: potential for significant political and cultural change due to the Olympic movement; and United States: development of parks in response to increased urbanization</p>	<p>GHW.11.2.a.1: Define reasons why people travel Example: Natural beauty, social occasion, adventure seeking</p>
<p>GHW.11.3: Identify and assess the impact of sports and recreation on the human and physical environments in selected countries.</p>	<p>GHW.11.3.a.1: Identify the impact of sports and recreation on the human and physical environments in selected countries.</p>
<p>GHW.11.4: Analyze and predict the changing patterns of space</p>	<p>GHW.11.4.a.1: Analyze and predict the changing patterns of</p>

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IAS	Content Connector
<p>devoted to sports and recreation in the local community and region. Examples: Indianapolis: downtown renewal, West Lafayette: university expansion of sporting facilities, South Bend: national reputation related to sports, and Paoli: basketball stadium holds more than the town's population</p>	<p>space devoted to sports and recreation in the local community and region. Examples: Indianapolis: downtown renewal, West Lafayette: university expansion of sporting facilities, South Bend: national reputation related to sports, and Paoli: basketball stadium holds more than the town's population'</p>
<p>GHW.11.5: Analyze the impact of tourism on the physical and human environments of selected world regions. Predict the environmental impact of a continued growth in tourism in these regions.</p>	<p>GHW.11.5.a.1: Analyze the impact of tourism on the physical and human environments of selected world regions. Predict the environmental impact of a continued growth in tourism in these regions.</p>
<p>GHW.11.6: Use geographical and historical knowledge and skills to analyze problems related to tourism and to propose solutions related to these problems.</p>	

Standard 12: Global Change

Students examine the human causes of change to the environment on a global scale along with the impact of these changes on the lives of humans.

IAS	Content Connector
<p>GHW.12.1: Analyze global climate change (sometimes called “global warming”) and assess the validity of this idea, the variable climate changes it forecasts for different parts of Earth, and the implications of these changes for humans.</p>	<p>GHW.12.1.a.1: Define Global warming List examples how global warming is affecting different parts of the Earth.</p>
<p>GHW.12.2: Explain the concepts of linear and exponential growth, and apply these concepts to geographical themes while analyzing the consequences of various human responses. Examples: The “doubling time” for global population and the implications of this doubling in various world regions (1750–present), economic growth curves for various countries and the implications for resource use and environmental pollution (present)</p>	

United States Government

Standard 1: The Nature of Politics and Government

Students identify, define, compare and contrast ideas regarding the nature of government, politics and civic life, and explain how these ideas have influenced contemporary political and legal systems. Students also explain the importance of government, politics and civic engagement in a democratic republic, and demonstrate how citizens participate in civic and political life in their own communities.

IAS	Content Connector
USG.1.1: Define civic life, political life, and private life and describe the activities of individuals in each of these spheres. (Individuals, Society and Culture)	
USG.1.2: Define the terms and explain the relationship between politics, government, and public policy. (Economics)	
USG.1.3: Interpret the purposes and functions of government found in the Preamble of the United States Constitution. (Economics)	USG.1.3.a.1: Interpret the purposes and functions of government found in the Preamble of the United States Constitution. (Economics)
USG.1.4: Compare and contrast types of government including direct democracy, monarchy, oligarchy, and totalitarianism. (History; Individuals, Society and Culture)	USG.1.4.a.1: Compare and contrast types of government including direct democracy, monarchy, oligarchy, and totalitarianism. (History; Individuals, Society and Culture)
USG.1.5: Compare and contrast characteristics of limited and unlimited governments and provide historical and contemporary examples of each type of government.	USG.1.5.a.1: Compare and contrast characteristics of limited and unlimited governments and provide historical and contemporary examples of each type of government.
USG.1.6: Compare and contrast unitary, confederate, and federal systems of government.	USG.1.6.a.1: Compare and contrast unitary, confederate, and federal systems of government.
USG.1.7: Define and provide examples of constitutionalism, rule of law, limited government, and popular sovereignty in the United States Constitution and explain the relationship of these constitutional principles to the protection of the rights of individuals. (History; Individuals, Society and Culture)	USG.1.7.a.1: Define and provide examples of constitutionalism, rule of law, limited government, and popular sovereignty in the United States Constitution and explain the relationship of these constitutional principles to the protection of the rights of individuals. (History; Individuals, Society and Culture)
USG.1.8: Evaluate the importance of a written constitution in establishing and maintaining the principles of rule of law and limited government.	USG.1.8.a.1: Evaluate the importance of a written constitution in establishing and maintaining the principles of rule of law and limited government.
USG.1.9: Evaluate how the United States Constitution establishes majority rule while protecting minority rights and balances the common good with individual liberties. (History; Individuals, Society and Culture)	USG.1.9.a.1: Define Majority Rule.

Standard 2: Foundations of Government in the United States

Students identify and define ideas at the core of government and politics in the United States, interpret Founding-Era documents and events associated with the core ideas, and explain how commitment to these foundational ideas constitutes a common American civic identity. They also analyze the meaning and application of core ideas to government, politics and civic life, and demonstrate how citizens apply these foundational ideas in civic and political life.

IAS	Content Connector
USG.2.1: Summarize the colonial, revolutionary, and Founding-Era experiences and events that led to the writing, ratification, and implementation of the United States Constitution (1787) and Bill of Rights (1791). (History; Individuals, Society and Culture)	USG.2.1.a.1: Using a timeline, show events leading to implementation of the United States Constitution
USG.2.2: Understand the concept of compromise and evaluate its application during the Constitutional Convention.	USG.2.2.a.1: Tell concept of Compromise and how it let to the application during the Constitutional Convention
USG.2.3: Analyze and interpret central ideas on government,	

United States Government

IAS	Content Connector
individual rights, and the common good in founding documents of the United States.	
USG.2.4: Explain the history and provide examples of foundational ideas of American government embedded in the Founding-Era documents such as: natural rights philosophy, social contract, popular sovereignty, constitutionalism, representative democracy, political factions, federalism, and individual rights.	
USG.2.5: Identify and explain elements of the social contract and natural rights theories in United States founding-era documents.	
USG.2.6: Explain how a shared American civic identity is based on commitment to foundational ideas in Founding-Era documents and in core documents of subsequent periods of United States history. (History)	
USG.2.7: Using primary documents compare and contrast the ideas of the Federalists and the Anti-Federalists regarding the respective roles of state and national government on ratification of the United States Constitution (1787–1788). (History)	
USG.2.8: Explain the history and provide historical and contemporary examples of fundamental principles and values of American political and civic life, including liberty, security, the common good, justice, equality, law and order, rights of individuals, diversity, popular sovereignty, and representative democracy. (Individuals, Society and Culture)	USG.2.8.a.1: Explain the history and provide historical and contemporary examples of fundamental principles and values of American political and civic life, including liberty, security, the common good, justice, equality, law and order, rights of individuals, diversity, popular sovereignty, and representative democracy. (Individuals, Society and Culture)

Standard 3: Purposes, Principles and Institutions of Government in the United States

Students explain how purposes, principles and institutions of government for the American people are established in the United States Constitution and reflected in the Indiana Constitution. Students also describe the structures and functions of American constitutional government at national, state and local levels and practice skills of citizenship in relationship to their constitutional government.

IAS	Content Connector
USG.3.1: Analyze the United States Constitution and explain characteristics of government in the United States, which define it as a federal, presidential, constitutional and representative democracy.	USG.3.1.a.1: Define federal, presidential, constitutional and representative democracy.
USG.3.2: Explain the constitutional principles of federalism, separation of power, the system of checks and balances, republican government or representative democracy, and popular sovereignty; provide examples of these principles in the governments of the United States and the state of Indiana.	USG.3.2.a.1: Define and label 3 branches of government.
USG.3.3: Identify and describe provisions of the United States Constitution and the Indiana Constitution that define and distribute powers and authority of the federal or state government.	
USG.3.4: Explain the relationship between limited government and a market economy. (Economics)	
USG.3.5: Explain the section of Article IV, Section 4, of the United States Constitution which says, “The United States shall guarantee to every State in the Union a Republican form of government.”	

United States Government

IAS	Content Connector
USG.3.6: Compare and contrast the enumerated, implied and denied powers in the United States Constitution and the Indiana Constitution.	
USG.3.7: Explain the relationships among branches of the United States government and Indiana government, which involve separation and sharing of powers as a means to limited government.	USG.3.7.a.1: Explain the relationships among branches of the United States government and Indiana government, which involve separation and sharing of powers as a means to limited government.
USG.3.8: Describe the fiscal and monetary policies incorporated by the United States government and Indiana government and evaluate how they affect individuals, groups and businesses. (Economics)	
USG.3.9: Explain how a bill becomes law in the legislative process of the United States and the state of Indiana.	USG.3.9.a.1: Explain how a bill becomes law in the legislative process of the United States and the state of Indiana.
USG.3.10: Describe the procedures for amending the United States and Indiana Constitutions and analyze why it is so difficult to amend these Constitutions.	USG.3.10.a.1: Describe the procedures for amending the United States and Indiana Constitutions and analyze why it is so difficult to amend these Constitutions.
USG.3.11: Analyze the functions of the judicial branch of the United States and Indiana governments with emphasis on the principles of due process, judicial review and an independent judiciary.	USG.3.11.a.1: Analyze the functions of the judicial branch of the United States and Indiana governments with emphasis on the principles of due process, judicial review and an independent judiciary.
USG.3.12: Analyze the functions of major departments of the executive branch in the United States and in Indiana. (Individuals, Society and Culture)	USG.3.12.a.1: Analyze the functions of major departments of the executive branch in the United States and in Indiana. (Individuals, Society and Culture)
USG.3.13: Explain the electoral process in terms of election laws and election systems on the national, state and local level.	USG.3.13.a.1: Explain the electoral process in terms of election laws and election systems on the national, state and local level.
USG.3.14: Analyze the election of Benjamin Harrison, Indiana’s only president, his approach to the presidency, his relationship to the legislative branch, and his re-election defeat, considering the effects of party politics and public opinion.	USG.3.14.a.1: Analyze the election of Benjamin Harrison, Indiana’s only president, his approach to the presidency, his relationship to the legislative branch, and his re-election defeat, considering the effects of party politics and public opinion.
USG.3.15: Summarize the evolution of political parties and their ideologies in the American governmental system and analyze their functions in elections and government at national, state and local levels of the federal system. (History; Individuals, Society and Culture)	
USG.3.16: Explain and evaluate the original purpose and function of the Electoral College and its relevance today.	USG.3.16a.1: Explain and evaluate the original purpose and function of the Electoral College and its relevance today.
USG.3.17: Explain the organization of state and local governments in Indiana and analyze how they affect the lives of citizens.	USG.3.17.a.1: Explain the organization of state and local governments in Indiana and analyze how they affect the lives of citizens.
USG.3.18: Identify the role and development of special interest groups in politics and explain their impact on the development of state and local public policy. (Economics; History; Individuals, Society and Culture)	USG.3.18.a.1: Identify the role and development of special interest groups in politics and explain their impact on the development of state and local public policy. (Economics; History; Individuals, Society and Culture)
USG.3.19: Identify the historical significance of and analyze decisions by the United States Supreme Court about the constitutional principles of separation of powers and checks and balances in such landmark cases as Marbury v. Madison (1803), Baker v. Carr (1962), United States v. Nixon (1974), Clinton v. City of New York (1998) and Bush v. Gore (2000).	USG.3.19.a.1: Identify the historical significance of and analyze decisions by the United States Supreme Court about the constitutional principles of separation of powers and checks and balances in such landmark cases as Marbury v. Madison (1803), Baker v. Carr (1962), United States v. Nixon (1974), Clinton v. City of New York (1998) and Bush v. Gore (2000).
USG.3.20: Identify the historical significance of and analyze decisions by the United States Supreme Court about the	USG.3.20.a.1: Identify the historical significance of and analyze decisions by the United States Supreme Court about the

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IAS	Content Connector
constitutional principle of federalism in cases such as McCulloch v. Maryland (1819), Alden v. Maine (1999) and the denial of certiorari for the Terri Schiavo case (2005). (History; Individuals, Society and Culture) certiorari: a writ from a high court to a low court requesting a transcript of the proceedings of a case for review	constitutional principle of federalism in cases such as McCulloch v. Maryland (1819), Alden v. Maine (1999) and the denial of certiorari for the Terri Schiavo case (2005). (History; Individuals, Society and Culture) certiorari: a writ from a high court to a low court requesting a transcript of the proceedings of a case for review
USG.3.21: Describe the influence of the media and technology on public opinion and public policy.	

Standard 4: The Relationship of the United States to Other Nations in World Affairs

Students analyze the interactions between the United States and other nations and evaluate the role of the United States in world affairs.

IAS	Content Connector
USG.4.1: Compare and contrast governments throughout the world with the United States government in terms of source of the government's power.	USG.4.1.a.1: Compare and contrast governments throughout the world with the United States government in terms of source of the government's power.
USG.4.2: Describe how different governments interact in world affairs. (Individuals, Society and Culture)	USG.4.2.a.1: Describe how different governments interact in world affairs. (Individuals, Society and Culture)
USG.4.3: Analyze reasons for conflict among nations, such as competition for resources and territory, differences in ideology, and religious or ethnic conflicts.	USG.4.3.a.1: Analyze reasons for conflict among nations, such as competition for resources and territory, differences in ideology, and religious or ethnic conflicts.
USG.4.4: Provide examples of governmental and non-governmental international organizations and explain their role in international affairs.	
USG.4.5: Analyze powers the United States Constitution gives to the executive, legislative and judicial branches of government in the area of foreign affairs.	USG.4.5.a.1: Analyze powers the United States Constitution gives to the executive, legislative and judicial branches of government in the area of foreign affairs.
USG.4.6: Identify and describe strategies available to the United States government to achieve foreign policy objectives. (Economics; Geography; History; Individuals, Society and Culture)	
USG.4.7: Examine the influence individuals, businesses, labor, and other organizations, interest groups, and public opinion has on United States foreign policy. (Economics)	USG.4.7.a.1: Identify one influence individuals, businesses, labor, and other organizations, interest groups, and public opinion has on United States foreign policy. (Economics)

Standard 5: Roles of Citizens in the United States

Students explain the idea of citizenship in the United States, describe the roles of United States citizens, and identify and explain the rights and responsibilities of United States citizens. They also examine how citizens can participate responsibly and effectively in the civic and political life of the United States.

IAS	Content Connector
USG.5.1: Define the legal meaning of citizenship in the United States; identify the requirements for citizenship in the United States and residency in Indiana and understand the criteria used for attaining both.	USG.5.1.a.1: Define the legal meaning of citizenship in the United States; identify the requirements for citizenship in the United States and residency in Indiana and understand the criteria used for attaining both.
USG.5.2: Analyze the roles and responsibilities of citizens in Indiana and the United States. (Individuals, Society and Culture)	USG.5.2.a.1: Analyze the roles and responsibilities of citizens in Indiana and the United States. (Individuals, Society and Culture) Example: voting, informed on civic issues

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IAS	Content Connector
USG.5.3: Discuss the individual’s legal obligation to obey the law, serve as a juror, and pay taxes.	USG.5.3.a.1: Discuss the individual’s legal obligation to obey the law, serve as a juror, and pay taxes.
USG.5.4: Identify and describe the civil and constitutional rights found in the United States Constitution and Bill of Rights and expanded by decisions of the United States Supreme Court; analyze and evaluate landmark cases of the United States Supreme Court concerning civil rights and liberties of individuals.	USG.5.4.a.1: Identify free speech, right to bear arms and civil rights and pertinent court decisions.
USG.5.5: Identify when it is constitutional for our government to limit the rights of individuals and explain the reasons why the government would want to do this. (History)	USG.5.5.a.1: Identify when it is constitutional for our government to limit the rights of individuals and explain the reasons why the government would want to do this. (History) Ex: Civil Wartime, Civil Unrest
USG.5.6: Explain and give examples of important citizen actions that monitor and influence local, state, and national government as individuals and members of interest groups.	USG.5.6.a.1: Give examples of actions that can monitor and influence local, state and national government. EX; vote, protest, writing and editorial
USG.5.7: Explain how citizens in the United States participate in public elections as voters and supporters of candidates for public office.	
USG.5.8: Describe opportunities available to individuals to contribute to the well-being of their communities and participate responsibly in the political process at local, state and national levels of government.	
USG.5.9: Use information from a variety of resources to describe and discuss current American political issues. (History, Economics, Geography)	USG.5.9.a.1: Use information from a variety of sources to list or report on current events in American political issues.

United States History

Standard 1: Early National Development: 1775 to 1877

Students review and summarize key ideas, events, and developments from the Founding Era through the Civil War and Reconstruction from 1775 to 1877.

IAS	Content Connector
USH.1.1: Read key documents from the Founding Era and analyze major ideas about government, individual rights and the general welfare embedded in these documents. (Government) http://www.ourdocuments.gov/content.php?flash=true&page=milestone	
USH.1.2: Summarize major themes in the early history of the United States such as federalism, sectionalism, nationalism, and states' rights. (Economics, Government)	USH.1.2.a.1: Summarize major themes in the early history of the United States such as federalism, sectionalism, nationalism, and states' rights. (Economics, Government)
USH.1.3: Identify and tell the significance of controversies pertaining to slavery, abolitionism, and social reform movements. (Government, Economics)	USH.1.3.a.1: List the significance of controversies pertaining to slavery, abolitionism, and social reform movements.
USH. 1.4: describe causes and lasting effects of the Civil War and Reconstruction as well as the political controversies surrounding this time such as Andrew Johnson's impeachment, the Black Codes, and the Compromise of 1877. (Government, Economics)	

Standard 2: Development of the Industrial United States: 1870 to 1900

Students examine the political, economic, social and cultural development of the United States during the period from 1870 to 1900.

IAS	Content Connector
USH.2.1: Describe the economic developments that transformed the United States into a major industrial power and the factors necessary for industrialization. (Economics)	USH.2.1.a.1: Define Industrialism.
	USH.2.1.a.2: List inventions and inventors for industrialization. (Economics) Example: factors such as land, labor, and capitol
USH.2.2: Explain key ideas, movements, and inventions and summarize their impact on rural and urban communities throughout the United States. (Economics, Sociology)	
USH 2.3: Analyze the factors associated with the development of the West and how these factors affected the lives of those who settled there. (Government, Economics, Individuals, Society, and Culture)	USH 2.3.a.1: List the factors associated with the development of the West and how these factors affected the lives of those who settled there. Ex; Homestead act, discovery of gold and silver,
USH.2.4: Explain how the lives of American Indians changed with the development of the West. (Government, Individuals, Society, and Culture)	USH.2.4.a.1: Explain how the lives of American Indians changed with the development of the West.
USH.2.5: Summarize the impact industrialization and immigration had on social movements of the era including the contributions specific individuals and groups. (Economics, Geography, Individuals, Society, and Culture)	USH.2.5.a.1: Summarize the impact industrialization and immigration had on social movements of the era including the contributions specific individuals and groups. (Economics, Geography, Individuals, Society, and Culture) Example: Child labor, immigration increases due to industry Ellis Island
USH.2.6: Describe the growth of unions and the labor movement and evaluate various approaches and methods used by different labor leaders and organizations. (Government, Economics)	
USH.2.7: Describe and assess the contribution of Indiana's only	

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IAS	Content Connector
<p>president, Benjamin Harrison, to national policies on environmental protection, business regulation, immigration, and civil rights.</p>	
<p>USH.2.8: Evaluate the effectiveness of government attempts to regulate business (Interstate and Commerce Act-1887, Sherman Anti-Trust Act 1890). (Government, Economics)</p>	
<p>USH.2.9: Analyze the development of “separate but equal” policies culminating in the Plessy v. Ferguson (1896) case. (Government; Individuals, Society, and Culture)</p>	<p>USH.2.9.a.1: Match court case that depict "separate but equal" Plessy v. Ferguson</p>

Standard 3: Emergence of the Modern United States: 1897 to 1920

Students examine the political, economic, social and cultural development of the United States during the period from 1897 to 1920.

IAS	Content Connector
<p>USH.3.1: Describe the events and people central to the transformation of the United States developing into a world power. (Government, Geography)</p>	
<p>USH.3.2: Explain the origins, goals, achievements, and limitations of the Progressive Movement in addressing political, economic, and social reform. (Government; Economics; Individuals, Society, and Culture)</p>	
<p>USH.3.3: Compare and contrast the Progressive reforms of Theodore Roosevelt, William Howard Taft, and Woodrow Wilson. (Government; Economics; Individuals, Society, and Culture)</p>	<p>USH.3.3.a.1: Compare and contrast the Progressive reforms of Theodore Roosevelt, William Howard Taft, and Woodrow Wilson.</p>
<p>USH.3.4: Explain the constitutional significance of the following landmark decisions of the United States Supreme Court: <i>Northern Securities Company v. United States</i> (1904), <i>Muller v. Oregon</i> (1908), <i>Schenck v. United States</i> (1919) and <i>Abrams v. United States</i> (1919).</p>	<p>USH.3.4.a.1: Identify key points of the 19th amendment and significance of this amendment</p>
<p>USH.3.5: Identify and give the significance of contributions to American culture made by individuals and groups--1897-1920 such as Booker T. Washington, W.E.B. DuBois, NAACP, muckrakers, Upton Sinclair. (Individuals, Society, and Culture)</p>	
<p>USH.3.6: Analyze the reasons why the United States became involved in World War I. (Government, Economics)</p>	<p>USH.3.6.a.1: Analyze the reasons why the United States became involved in World War I.</p>
<p>USH.3.7: Analyze President Wilson’s Fourteen Points and describe the obstacles he faced in getting European leaders to accept his approach to peace. (Government)</p>	
<p>USH.3.8: Summarize the provisions of the Treaty of Versailles and analyze reasons why the treaty was never ratified by the U.S. Senate. (Government)</p>	<p>USH.3.8.a.1: Name the provisions of the Treaty of Versailles and analyze reasons why the treaty was never ratified by the U.S. Senate. (Government)</p>
<p>USH.3.9: Explain the impact of “New” Immigration and the Great Migration on industrialization and urbanization and in promoting economic growth. (Economics, Geography)</p>	<p>USH.3.9.a.1: Explain the impact of “New” Immigration and the Great Migration on industrialization and urbanization and in promoting economic growth. Example: competing for jobs, immigrants were discriminated against</p>

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Standard 4: Modern United States Prosperity and Depression: Post WW I - 1939

Students explain the political, economic, social and cultural development of the United States during the period from 1920 to 1939.

IAS	Content Connector
USH.4.1: Understand the significance of the pro-business policies of President's Harding, Coolidge, and Hoover and the effect these policies had on the economy of the 1920s. (Economics, Government)	USH.4.1.a.1: Understand US economy is booming at beginning of 1920's
USH.4.2: Identify new cultural movements of the 1920s and analyze how these movements reflected and changed American society. (Individuals, Society, and Culture)	USH.4.2.a.1: Describe the culture of the 20's Example: Roaring 20's, age of Jazz, Harlem Renaissance
USH.4.3: Identify areas of social tension such as the Red Scare, Prohibition, Religious Fundamentalism, the KKK, New Morality, and the New Woman and explain their consequences in the post-WWI era. (Individuals, Society, and Culture)	USH.4.3.a.1: Understand social tensions Example: Rise of KKK, Prohibition
USH.4.4: Describe technological developments during the 1920s and explain their impact on rural and urban America. (Economics; Geography; Individuals, Society, and Culture)	USH.4.4.a.1: List technological Development during 1920's Example: Model T, Assembly line, consumer goods
USH.4.5: Analyze the causes of the Great Depression and explain how they affected American society. (Economics; Individuals, Society, and Culture)	USH.4.5.a.1: List causes of Great Depression Example: buying on credit, overproduction of consumer goods
USH.4.6: Identify and describe the contributions of political and social reformers during the Great Depression Era. (Government; Economics; Individuals, Society and Culture)	USH.4.6.a.1: Identify social reformers During the Great Depression Example: FDR, Dorthea Lang, Mary Bethune
USH.4.7: Analyze the impact the Great Depression had on America's standard of living (Economics, Government)	USH.4.7.a.1: Identify how Great Depression Affected standard of living Example: Breadlines, Hoovervilles, Organized Crime
USH.4.8: Identify and explain the significance of New Deal relief programs. (Government)	
USH.4.9: Identify and explain the significance of the expansion of federal power during the New Deal Era in the areas of agriculture, money and banking, industry, labor, social welfare, and conservation	USH.4.9.a.1: List New Deal Programs Example: FERA, PWA, WPA

Standard 5: The United States and World War II: 1939 to 1945

Students examine the causes and course of World War II, the effects of the war on United States society and culture, and the consequences for United States involvement in world affairs.

IAS	Content Connector
USH.5.1: Analyze the causes and effects of American isolationism during the 1930s and the effect this policy had on America's war preparation. (Government, Economics, Geography)	USH.5.1.a.1: Define Isolationism during 1930's
USH.5.2: Compare and contrast President Franklin D. Roosevelt's world view with that of Germany's Adolf Hitler, Italy's Benito Mussolini, the Soviet Union's Joseph Stalin, and Japan's Hideki Tojo. (Government; Individuals, Society and Culture)	USH.5.2.a.1: Compare and contrast President Franklin D. Roosevelt's world view with that of Germany's Adolf Hitler, Italy's Benito Mussolini, the Soviet Union's Joseph Stalin, and Japan's Hideki Tojo. (Government; Individuals, Society and Culture)
USH.5.3: Identify and explain key events from Versailles to Pearl Harbor that resulted in the United States entry into World War II. (Government, Geography)	USH.5.3.a.1: Identify and explain key events from Versailles to Pearl Harbor that resulted in the United States entry into World War II.
USH.5.4: Identify key leaders and events from World War II and	USH.5.4.a.1: Identify key leaders and events from World War II

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IAS	Content Connector
explain the significance of each. (Government)	and explain the significance of each.
USH.5.5: Describe Hitler’s “final solution” policy and explain the Allied responses to the Holocaust and war crimes. (Government; Geography; Individuals, Society and Culture)	USH.5.5.a.1: Describe Hitler’s “final solution” policy Example: explain the Allied responses to the Holocaust and war crimes.
USH.5.6: Explain how the United States dealt with individual rights and national security during World War II by examining the following groups: Japanese-Americans, African Americans, Native-Americans, Hispanics, and women. (Government)	USH.5.6.a.1: Identify one group of people who dealt with individual rights and national security during WWII Example: Japanese Internment Camps
USH.5.7: Summarize the efforts the national government made to regulate production, labor, and prices during the war and evaluate the success or failure of these efforts. (Government)	USH.5.7.a.1: List ways Americans contributed to WWII on the home front.
USH.5.8: Identify and describe the impact of World War II on American culture. (Individuals, Society and Culture)	
USH.5.9: Explain how World War II led to the rise of the United States and the Soviet Union as rival superpowers.	USH.5.9.a.1: Identify who, what, when, where, why's of the Atomic Bomb

Standard 6: Postwar United States: 1945 to 1960

Students understand the political, economic, social and cultural development of the United States during the period from 1945 to 1960.

IAS	Content Connector
USH.6.1: Understand the domino theory and its relationship to the principle of containment. Identify key events and individuals as well as their connections to post World War II tensions (Cold War). (Government, Geography)	USH.6.1.a.1: Define the Cold War.
USH.6.2: Summarize and assess the various actions which characterized the early struggle for civil rights (1945-1960). (Government; Individuals, Society and Culture)	USH.6.2.a.1: List Aspects of the Civil Rights movement
USH.6.3: Describe the constitutional significance and lasting societal effects of the United States <i>Brown v. Board of Education</i> Supreme Court case. (Government)	USH.6.3.a.1: Describe the constitutional significance and lasting societal effects of the United States <i>Brown v. Board of Education</i>
USH.6.4: Summarize key economic and social changes in post-WW II American life. (Individuals, Society and Culture)	USH.6.4.a.1: Summarize key economic and social changes in post-WW II American life. Example: The Red Scare

Standard 7: The United States in Troubled Times: 1960 to 1980

Students examine the political, economic, social and cultural development of the United States during the period from 1960 to 1980.

IAS	Content Connector
USH.7.1: Explain the civil rights movement of the 1960s and 1970s by describing the ideas and actions of federal and state leaders, grassroots movements, and central organizations that were active in the movement. (Government; Economics; Individuals, Society and Culture)	USH.7.1.a.1: Define key people involved in Civil Rights Movement. Example: JFK, Bobby Kennedy, MLK, Malcom X, Lyndon Johnson
USH.7.2: Evaluate various methods and philosophies (e.g. Martin Luther King, Jr., the Black Panthers, and Malcolm X) to bring about social justice during the Civil Rights Movement. (Individuals, Society and Culture)	USH.7.2.a.1: Compare/ Contrast methods and philosophies (e.g. Martin Luther King, Jr., the Black Panthers, and Malcolm X) to bring about social justice during the Civil Rights
USH.7.3: Identify and explain the significance of federal programs, policies and legal rulings designed to improve the lives of Americans during the 1960s. (Government, Economics)	

United States History

IAS	Content Connector
USH.7.4: Describe developing trends in science and technology and explain how they impacted the lives of Americans during the period 1960-1980.	USH.7.4.a.1: Describe developing trends in science and technology and explain how they impacted the lives of Americans during the period 1960-1980.
USH.7.5: Identify and analyze the significance of key decisions of the Warren Court. (Government)	
USH.7.6: Identify the problems confronting different minorities during this period of economic and social change and describe the solutions to these problems. (Economics; Individuals, Society and Culture)	USH.7.6.a.1: Identify the problems confronting different minorities during this period of economic and social change and describe the solutions to these problems. Example: Bay of Pigs, Space Race, SALT
USH.7.7: Identify areas of social tension from this time period and explain how social attitudes shifted as a result.	
USH.7.8: Explain and analyze changing relations between the United States and the Soviet Union from 1960 to 1980.	
USH.7.9: Analyze the foreign and domestic consequences of U.S. involvement in Vietnam.	
USH.7.10: Explain and analyze U.S. foreign policy issues during the 1960s and 1970s. (Africa, Middle East, China)	
USH.7.11: Explain the constitutional, political, and cultural significance of the Watergate Scandal and the United States Supreme Court decision of <i>United States v. Nixon</i> . (Government)	USH.7.11.a.1: Explain the constitutional, political, and cultural significance of the Watergate Scandal and the United States Supreme Court decision of <i>United States v. Nixon</i> .

Standard 8: The Contemporary United States: 1980 to the Present

Students examine the political, economic, social and cultural developments of the United States during the period from 1980 to the present.

IAS	Content Connector
USH.8.1: Explain the significance of social, economic and political issues during the period 1980 to the present and how these issues affected individuals and organizations.	USH.8.1.a.1: Explain the significance of social, economic and political issues during the period 1980 to the present and how these issues affected individuals and organizations. ex; Iran Contra, Abortion, AIDS epidemic, Panama Canal Treaty
USH.8.2: Describe developing trends in science and technology and explain how they impact the lives of Americans today such as: NASA and space programs; identification of DNA; the Internet; global climate change; and U.S. energy policy.	USH.8.2.a.1: Describe developing trends in science and technology and explain how they impact the lives of Americans today such as: NASA and space programs; identification of DNA; the Internet; global climate change; and U.S. energy policy.
USH.8.3: Discuss and explain the significance of the rise of the new conservative coalition of the 1980's.	
USH.8.4: Explain the assumptions of supply-side economics or "Reaganomics" and how the Reagan administration implemented it. (Economics)	
USH.8.5: Explain how the Cold War ended and identify new challenges to U.S. leadership in the world. (Economics, Geography)	
USH.8.6: Analyze important domestic and foreign policies and events of the Clinton and Bush administrations.	USH.8.6.a.1: List important domestic and foreign policies and events of the Clinton and Bush administrations. No Child Left behind, Bonia
USH.8.7: Explain the constitutional significance of the following landmark decisions of the United States Supreme Court: <i>Westside Community School District v. Mergens</i> (1990), <i>Reno v. American Civil Liberties Union</i> (1997), <i>Mitchell v.</i>	USH.8.7.a.1: List the constitutional significance of the following landmark decisions of the United States Supreme Court: <i>Westside Community School District v. Mergens</i> (1990), <i>Reno v. American Civil Liberties Union</i> (1997), <i>Mitchell v.</i>

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IAS	Content Connector
<i>Helms (2000) and Bush v. Gore (2000).</i>	<i>Helms (2000) and Bush v. Gore (2000).</i>
USH.8.8: Explain the background and significance of the September 11, 2001 terrorist attack and the resulting War on Terror.	USH.8.8.a.1: Explain the background and significance of the September 11, 2001 terrorist attack and the resulting War on Terror.
USH.8.9: Analyze the impact of globalization on U.S. culture and U.S. economic, political and foreign policy. (Government, Economics, Geography)	

Standard 9: Historical Thinking

Students conduct historical research that incorporates information literacy skills such as forming appropriate research questions; evaluating information by determining its accuracy, relevance and comprehensiveness; interpreting a variety of primary and secondary sources; and presenting their findings with documentation.

IAS	Content Connector
USH.9.1: Identify patterns of historical succession and duration in which historical events have unfolded and apply them to explain continuity and change.	
USH.9.2: Locate and analyze primary sources and secondary sources related to an event or issue of the past; discover possible limitations in various kinds of historical evidence and differing secondary opinions.	
USH.9.3: Analyze multiple, unexpected, and complex causes and effects of events in the past.	
USH.9.4: Explain issues and problems of the past by analyzing the interests and viewpoints of those involved.	
USH.9.5: Formulate and present a position or course of action on an issue by examining the underlying factors contributing to that issue.	