

Implementation Report

Indiana Alternate Measure (I AM)

Research Project

January 2024

Table of Contents

Early Process.....	1
Standards Development.....	3
<i>Develop Learning Progressions with Individual Learning Targets.....</i>	<i>4</i>
Item Development	6
<i>Style Guide</i>	<i>6</i>
<i>Item Specifications.....</i>	<i>7</i>
<i>Item Writing.....</i>	<i>7</i>
<i>Content Review.....</i>	<i>9</i>
Form Development	10
<i>Support Levels.....</i>	<i>11</i>
Manipulatives.....	13
Student placement form	14
Students with no reliable method of communication	16
Test Administration	17
Reporting	19
<i>Feedback Report</i>	<i>19</i>
<i>Accountability Report</i>	<i>22</i>
<i>Aggregate Reports.....</i>	<i>22</i>
Summative Score	23
Standard Setting	23
<i>Performance Level Descriptors</i>	<i>24</i>
<i>Progress PLDs.....</i>	<i>24</i>
<i>Cut Scores.....</i>	<i>25</i>
<i>Progression Cut Scores.....</i>	<i>25</i>
Validity Studies.....	26
Appendix A: Item Specifications	27
Appendix B: Extended Learning Progressions	49
Appendix C: Model Operational Forms.....	56

The Indiana Department of Education (IDOE) contracted with WestEd to conduct research regarding the current state of the alternate assessment field based on alternate achievement standards (AA-AAS) and to make recommendations on redesigning their Indiana Alternate Measure (I AM). Based on a survey of teachers that highlighted challenges with the existing I AM assessment, IDOE expressed a desire to redesign the I AM to be a true alternate version of their current general assessment (ILEARN), ensuring that the alternate achievement standards aligned to the challenging state academic content standards will be assessed.

During this project, IDOE was implementing several changes regarding the general assessment:

- Academic content standards in English Language Arts (ELA) and mathematics were reviewed and streamlined;
- A general scope and sequence for those standards was determined; and
- The general assessment will move to a through-year model with three shorter assessments given in fall, winter, and early spring with a shortened summative assessment in late spring.

As this standards development work is completed, new content connectors (CCs) will be developed to guide teachers of students with the most significant cognitive disabilities on how to extend the academic content standards to a starting point at an appropriate level of difficulty for this population. Once those are adopted, a new I AM can be developed. This document lays out the considerations for designing, developing, and implementing the new assessment.

Early Process

The new I AM design recommendations come from several sources that were obtained as part of this research and are available as separate documents from IDOE:

- an extensive literature review regarding various aspects of AA-AAS
- a policy scan of other AA-AAS models in the other 49 states
- interviews with six state alternate assessment directors from states that are using various assessment models
- two surveys of Indiana educators
- small-scale tryouts of new item types and a new approach to assessing students
- focus groups of teachers working with students with the most significant cognitive disabilities
- recommendations from both an expert panel and a practitioner panel

From the surveys of Indiana educators as well as the focus groups with practitioners, we learned that Indiana educators believe the current model is not appropriate for the lowest performing students in this population for several reasons. Too many of their students are unable to truly access any of the items as the content begins at a relatively advanced level. The context of the items is often set in themes that these children have never encountered. And, overall, there is a perception that the assessment did not align sufficiently well with classroom instruction or with students' Individualized Education Program (IEP) goals. Surprisingly, little research has been published since the consortia

funded by the Race to the Top funds became operational. Looking at research published and available on the internet from 2010 to 2023, 70 percent of the reports were published before 2016. Documents examined included peer-reviewed publications, self-published research, reports from national organizations such as the National Center on Education Outcomes, and university dissertations. Yet, recent research still informed elements of the design. The literature review provided information on additional item types that have been used successfully with this population; moreover, for open-response or multiple-response items, allowing for partial credit provided better information on student understanding than dichotomous items. Additionally, findings suggested that assuming students had the necessary prerequisite skills was a barrier to students demonstrating their knowledge of a standard. Furthermore, there was evidence that lowering the rigor to the entry point of the grade-level standard and providing scaffolding as needed should allow more students to interact successfully with test items. Lastly, the policy scan and discussions with other state alternate assessment directors gave us information on strategies that work well with the lowest-functioning students with significant cognitive disabilities.¹

The expert panel also recommended repeating content over several administrations to allow teachers to focus on a handful of standards and work toward mastery while also exposing the students to the breadth of the content in a grade level. The practitioners agreed with the concept, although disagreed with another suggestion to allow them to choose what content should repeat. They expressed concern that there would be too much variability if standards were selected at the local level. They asked to have the CCs assigned by assessment window and published. The educators felt there would be significant instructional value in making the learning progressions publicly available to inform instruction.

Simultaneous with the research activities, WestEd content experts reviewed the current CCs, I AM tier divisions, and learning progressions documented for the two alternate assessment consortia (Dynamic Learning Maps and the Multi-State Alternate Assessment/National Center and State Collaborative) to recommend learning progressions for the concepts covered by the prioritized standards. Overall, the strategy for the new design of the I AM is to start earlier in a learning progression than is currently done in the I AM tier structure to allow all students with the most significant cognitive disabilities to access the content. Items should build on one another to provide the necessary scaffolding and not rely on students having the prerequisite knowledge. The context of the items should come from authentic scenarios that these students are likely to encounter during regular classroom instruction or from content in the science and social studies topics taught at earlier grades. Additionally, the design should include provisions for students without a reliable mode of communication.

This implementation manual is the culmination of all the activities conducted over the past year, beginning in January 2023. It is intended to guide assessment developers, at a high level, from the process of drafting extended standards through developing, implementing, scoring, and reporting the new I AM assessment. It includes recommendations from the early design document, adjusted based on

¹ The literature review and the policy review can be requested from IDOE.

lessons learned from the small-scale tryouts and discussions with the teachers who participated in the tryouts.

This document presents the information in the order a vendor would approach the development, beginning with the standards and ending with score reporting and validation.

Standards Development

IDOE intends to work with special education coordinators, curriculum coordinators, and educators from both general and special education classrooms to engage in a process to develop new CCs. CCs are designed to align to grade-level standards but better measure the knowledge and skills of students with the most significant cognitive disabilities. The CCs help ensure all students have access to grade-level-aligned content and to achieve school-level accountability for all students.

As the CCs are developed for the new ELA and mathematics standards, consideration should be given to the true intent of the connector with respect to the standards. For example, the Reading Foundation connectors at grade 3 indicate that students are to “read blends and common spelling patterns; know and use common word families when reading unfamiliar words; [and] read multi-syllabic words...” Yet as we developed items, IDOE indicated that for the item tryouts, students would not be expected to read but rather engage in decoding skills. To support making grade-level distinctions, future work on the CCs should be evaluated across the grade levels to support the development of content knowledge and skills that build upon each other. For mathematics, some of the 2020 CCs seemed to initially align to the standards, but upon review of the corresponding or current item specifications and sample items, the expectations of the items were not reflective of the standards, and often reflected content expectations below grade level. For example, the 2020 standard, CCs, and item specifications for 6.DS.3 read as follows:

IN Gr 6 Gen Ed Standard	IN Gr 6 Content Connector	IN Specification Tiers ²
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.	Tier 1-Student can identify a bar graph that models a set of data. Tier 2-Student can identify a bar graph that models a set of data. Tier 3-Student can identify a line plot that models a set of data.

The content connector moved far away from the grade-level standard, and the specification tiers moved the expectation below grade level. Specifically, when we evaluated the expectations in the 2020 standards for references to bar graphs and line plots, we found that these skills appear at grades 3 and 4 (below grade 6 level).

3.DA.1 Collect, organize, and graph data from observations, surveys, and experiments using

² Tiers represent the complexity of the item type in the current I AM design.

scaled bar and pictographs. Solve real-world problems by analyzing and interpreting the data using grade-level computation and comparison strategies.

4.DA.1 Formulate questions that can be addressed with data. Collect, organize, and graph data from observations, surveys, and experiments using line plots with whole number intervals, single- and scaled-bar graphs, and frequency tables. Solve real-world problems by analyzing and interpreting the data using grade-level computation and comparison strategies.

Develop Learning Progressions with Individual Learning Targets

The term “learning progressions” has a myriad of meanings, including a formal definition from the National Research Council: “Learning progressions in science are empirically grounded and testable hypotheses about how students’ understanding of, and ability to use, core scientific concepts and explanations and related scientific practices grow and become more sophisticated over time, with appropriate instruction.”³ Here, we use the term learning progressions to mean the purposeful sequencing of content. Learning progressions have been proposed through both research on cognition and student learning as well as educator reports of best practice and how students seem to best understand progressively complex concepts. For this project, learning progressions were created from previously completed work by the two Race to the Top consortia. WestEd aligned each CC with an essential element from the Dynamic Learning Maps (DLM) assessment and a core CC from the Multi-state Alternate Assessment (MSAA) standards. DLM focused more on student evidence while MSAA took a more research-based approach to articulating the content. DLM’s learning progressions tended to start at a much lower cognitive level than MSAA. Using the DLM and MSAA progressions and the CC for the preceding grade for reference, WestEd’s subject matter experts developed learning progressions for the I AM redesign to reflect an entry point for each CC through mastery of it. However, the work done to date was on the prior standards and work will need to continue with the newly adopted content standards.

For each CC, subject matter experts should create learning progressions at a grain size appropriate for students with significant cognitive disabilities. IDOE will need to decide if learning progressions should be created for all standards or only the essential ones to be assessed. Because the learning progressions are viewed to have value for both instruction and assessment development, IDOE may choose to develop the progressions for CCs not designated for assessment. The process of breaking apart the content connectors and building connections across concepts and grades could result in better instruction for teachers who work through this process.

Each step of the learning progression is termed a learning “target.” As progressions are developed in the future, consideration should be given to the grain size of the targets. Are very discrete learning targets resulting in a greater number of targets preferable to fewer targets based on groupings of related content? As Indiana teachers reviewed the progressions, they found value in the fine-grained distinctions to support identifying the skills their students needed to master. However, when selecting

³ National Research Council (2007). In R. A. Duschl, H. A. Schweingruber, & A. W. Shouse (Eds.), *Taking science to school: Learning and teaching science in grades K–8*. Washington, DC: The National Academies Press.

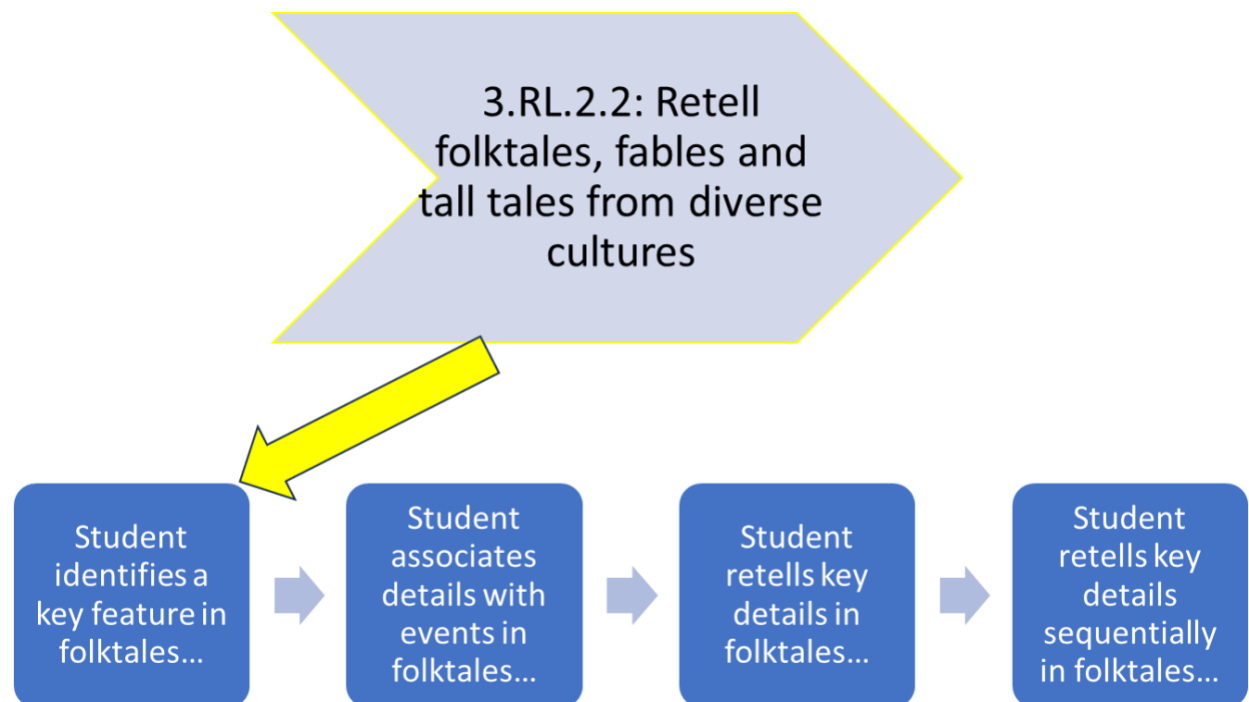
the content to be developed for the assessment, decisions had to be made about what targets in the progression should be assessed when the number of targets exceeded the number of items on the assessment for a given standard. Targets can be developed beyond the CC to the grade-level standard if needed, particularly for the standards chosen to be assessed throughout the year. The number of learning targets identified will vary by connector as some are broader than others. Regardless, each target should be a point of instruction and assessable within a reasonable time frame.

Educators with content expertise and experience with this population of students will need to review the progressions. See Appendix A for examples of learning progressions developed for the 2018 CCs for grade 3 ELA and grade 6 mathematics.

Each CC should have at least five targets identified, although the first one can be a precursor skill that will be assessed through true/false or another two-option item and will not count toward the accountability score. If there are more than five targets, then any of the key targets should be identified for item development or smaller targets could be grouped together to support developing items for each step in the progression while still providing the specification of the discrete steps that teachers found valuable. The fine-grained detail can also be used to support the “next steps” portion of the student feedback report.

Figure 1 provides an example of how one CC would include four main items, each aligned to one step of the learning progression to that CC. In this case, a grade 3 reading standard about retelling folktales, fables, and tall tales from diverse cultures has been broken down to start with a feature of the story, links details to the event, retells key details, and finally retells the story in a sequential order. The Level 1 item could be as simple as identifying a passage as a folktale from other genres.

Figure 1. Example of a CC Broken Into Steps of Learning Progressions



Item Development

Once the learning targets for item development have been identified, a Style Guide and item specifications should be developed prior to item writing. Item writers will need to follow standard procedure for universal design as well as for Web Content Accessibility Guidelines to ensure items are accessible to all students.

Style Guide

The Style Guide can begin with the style guide for the general assessments, but some aspects will need to be tailored to this population. Recommended content includes the following:

- Create developmentally appropriate scenarios for item context that focus on both the age of the student and the area in which they live.
- Provide guidance on how/if emphasis words (e.g., most, best) should be highlighted, and if so, how (e.g., bold or all caps); and guidance on format of multiple-choice response options (e.g., number of response options, whether or not options should be indented, designation of response options [e.g., with a letter]).
- Indicate the format for tables and figures including headings and titles.
- Provide direction for the format of passages (e.g., numbered sentences or paragraphs, use of glossary terms, presentation of the passage to the students by sentences, paragraphs, or blocks of paragraphs).

- Include inclusive language that supports the range of response modes students may use (e.g., “choose” rather than “click”).
- Determine whether the format/style is universal across content areas or if differences between the content area formats are justified.

Item Specifications

Once the learning targets for item development have been identified, item specifications should be developed. Sample item specifications can be found in Appendix B.

Item specifications will need to be written for each CC. The specifications include, at a minimum, the following fields:

- Domain
- Grade-level standard
- Content Connector
- Content limits
- Recommended response formats
- Learning targets from the learning progressions that items will be written to

Include in the item development template a place to indicate the information that test administrators should present beyond the text of the items themselves as this information is critical to developing a finished item. Typically, this information will be provided in the Test Administration Manual (TAM) along with the policies for accommodations and response modes. For example, whether a calculator is permitted could be item-dependent. Consideration also needs to be given to how much of the test administration text should be shown to students and how much should be read to the students with or without the benefit of textual support. Sample item specifications can be found in Appendix B.

Reading also requires the development of passages specifications. These specifications need to include passage length, quantitative measures to evaluate readability, and qualitative measures of text complexity. Where the CCs for reading may reflect subtle differences, features of the passage can also contribute to appropriate grade-level expectations.

Item Writing

All items should be developed by a team of content experts who are familiar with this population of students with significant cognitive disabilities. Items should be written as simply as possible using fewer words and including symbols and illustrations (pictures or photographs) whenever possible. Although there will be two forms developed that target the level of symbolism used by students, universal design encourages using the most simplistic approach possible to assessing the construct.

All items that require context should use age-appropriate context that is relevant for the population in Indiana. Items should depict scenes that the student is likely to encounter in general instruction or familiar objects. Another appropriate context could be based on state geography. For example, Indiana has lakes but not an ocean, so any item about underwater wildlife might be more appropriately set in a lake.

When developing topic lists for reading passages, the same principles apply. The passages should reflect content that has been addressed instructionally or should be familiar to students throughout Indiana. Science and social studies standards for previous grades can serve as resources for topic generation. There is a recognized limit to this, based on the other content area standards that may provide context for passages.

For mathematics, teachers will be permitted to provide tactile objects for students to use to display the answer to an item. Therefore, the objects used in the test items need to be common to a classroom. For example, a bar graph could be created with crayons or with colored race cars.

Decisions about the use of picture symbols also need to be made. Wherever possible, photographs should be used rather than drawings to represent the object as the student sees it. However, for ELA, test developers should evaluate whether photos versus realistic line drawings work best as original stories are often accompanied by illustrations. When using photos, they most likely would need to be limited to concrete nouns whereas it may be possible with line drawings to include actions in addition to objects/people. However, photographs may be selected to set a scene rather than symbolize a particular word. As technology changes, item developers should also be open to stimuli such as soundscapes, haptics, or tactile drawings as well.

The results of the small-scale tryouts indicated that students were only able to access true/false, multiple-choice, and short open-ended items. Inline-choice questions, multi-select items, and grids or tables proved very confusing for the students. Previous research suggests technology-enhanced items that require dragging and dropping can be challenging for students with visual and orthopedic difficulties. Item writers should consider these and other findings from the Accessibility Guide for Technology-Enhanced Items (<https://ateassessments.atlas4learning.org/itemguide.html>). Other item types, such as ordering, have worked on other alternate assessments but require teachers to be familiar with them and use them in the classroom, so that students are familiar with the item format prior to encountering them on the assessment. For example, cards depicting scenes from a story can be provided to the student for them to order as the events happened, or number cards can be presented for students to order from lowest to highest. Those item types may be added later, but until teachers are more familiar with them and use them regularly in classroom instruction, the recommendation is to start with the three aforementioned item types.

With the goal of developing a minimum of five targets for each CC, five items will need to be developed for each CC. To the extent possible, the items should be created in the following formats to establish a rhythm to the administration:

- Item 1. True/false or two-option multiple choice
- Items 2–4. Multiple choice with three response options
- Item 5. Either another multiple choice or a short open ended/fill-in-the-blank

For the two CCs selected to be the through-year connectors, four additional items will need to be developed. Additional items are intended to be administered to the higher-performing students who should not be hampered by a ceiling effect. If a student answers all five items correctly in the fall, then they should have access to seven items in the winter. If the student answers all seven items correctly, then they should have access to nine items in the spring. These additional items should continue the progression all the way up to the grade-level standard to avoid ceiling effects. (Further information about the structure of the proposed test forms is provided below in Form Development.)

To the degree possible, item models should be developed to facilitate the writing of item clones. Working iteratively between the item specifications and item writing will allow the developers to create true item templates that allow items to be replicated. Cloned items reduce the need for equating, ensure consistent rigor over time, and allow enough items to be created to disincentivize teaching to specific items by teachers. Item clones in math will also allow for common/similar manipulatives to be used across different administrations. Current research focuses on developing item models to create these clones through an automated item generation process.⁴

Item clones need to have the same linguistic structure, require the same cognitive process, and result in comparable statistical characteristics. It is much easier to conceive of item clones in mathematics where the same problem can be given with different numbers, data sets, or shapes. For passage-based items in ELA, both the passage and the items will need clones, again reinforcing the need for very specific models for both passages and items.

Content Review

We want to emphasize the importance of having teachers participate in the item review process. Their feedback and suggestions were instrumental in shaping the final versions of the items. Teacher feedback from both content experts and special educators familiar with this population can be key in evaluating the appropriateness of item contexts, wording, graphics, and answer choices. Teacher evaluation of item alignment helps to confirm a common understanding of the expectations of the CCs and the learning targets.

When developing content for Level 1, it can be difficult to maintain on-grade-level expectations while presenting content that students at this level can achieve. In the content review for the item tryouts for ELA, teachers were often looking for ways to present an easier version of the item to allow the lowest-performing students in their classroom some success, but their recommendations often would not align to the expectations of the standard/CC, raising questions about the validity of the results.

⁴ Gierl, M., & Lai, H. (2012). The role of item models in automatic item generation. *International Journal of Testing*, 12(3). 273–298. 10.1080/15305058.2011.635830.

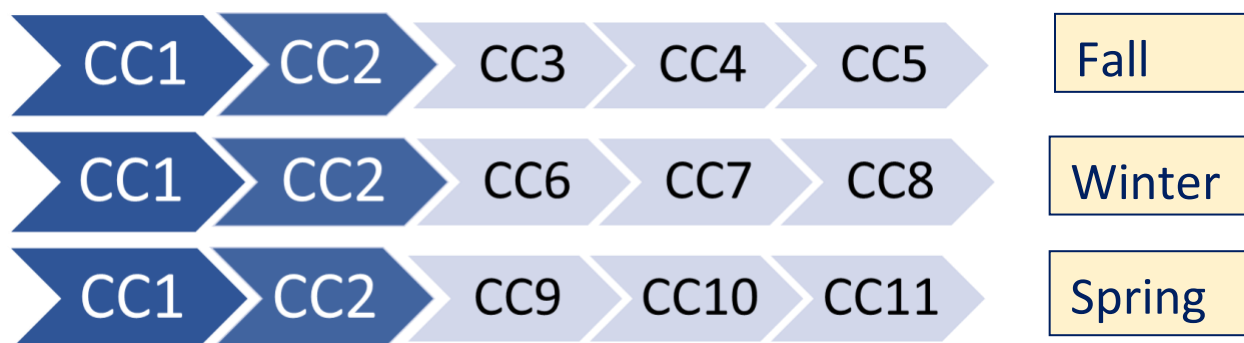
Glas, C. A. W., & van der Linden, W. J. (2003). Computerized adaptive testing with item cloning. *Applied Psychological Measurement*, 27(4), 247–261. <https://doi.org/10.1177/0146621603027004001>

Luecht, R., & Burke, M. (2020). Reconceptualizing items: From clones and automatic item generation to task model families. In H. Jiao & R. W. Lissitz (Eds.), *Application of artificial intelligence to assessment* (pp. 25–49). Information Age Publishing, Inc.

Form Development

Within each grade level, two CCs will be selected to repeat during all three administrations, allowing teachers to focus deeply on those concepts. The remaining three CCs per administration will ensure the students are being assessed on the breadth of the standards. Figure 2 displays the high-level form structure.

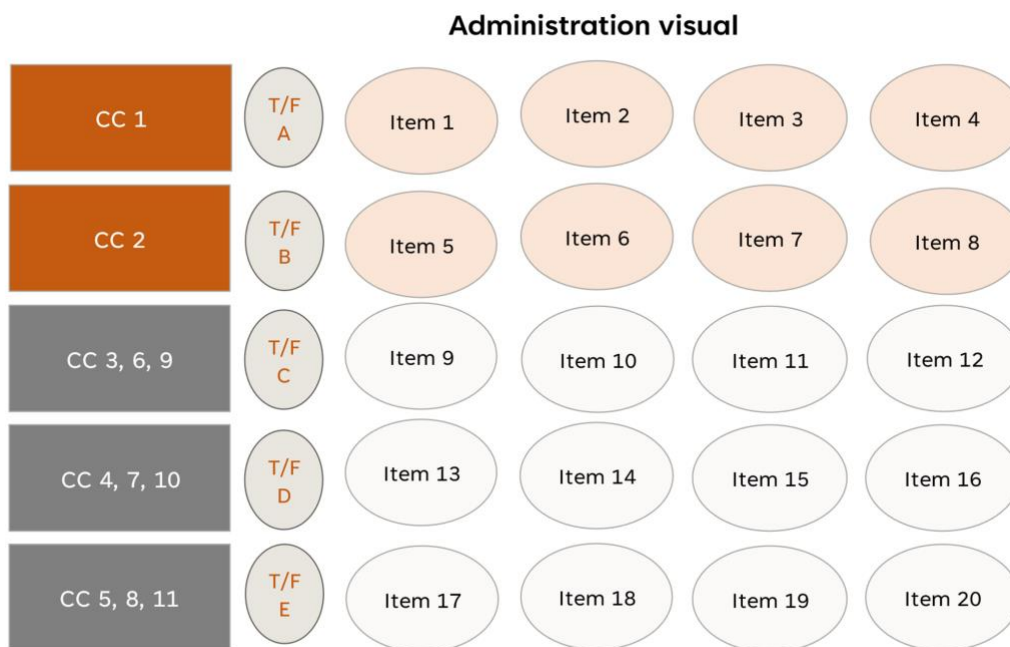
Figure 2. *Generic I AM Blueprint*



The blueprint for each grade will lay out the CCs to be assessed in each window so the teachers know which academic concepts to incorporate into instruction in the fall, winter, and spring. The sequence of the CC should match the sequence for the general assessment to the degree possible.

As shown in Figure 3, within each of the CCs are the five items. Thus, the highest-performing students will answer up to 25 items in a testing window. However, there are two types of stopping rules: one to determine if the student should be in the communication track, and one that allows students to stop testing within a CC when they have reached the end of their knowledge and skills in that area. This distinction is important for administration, but not for design and development. However, the design does require evidence that items increase in difficulty across the CC and that any ceiling effect is appropriate for the concept being tested. Each CC will need a minimum of five items.

Figure 3. I AM Blueprint for One Administration



Additionally, the two through-year connectors will need four more items. We do not wish the students to experience a ceiling effect, so if they answer all the items within one through-year connector correctly in the fall, they will receive two more (harder) items in the winter. If they answer them all correctly again, they will receive two more in the spring, for a total of nine items. Educators felt it was important for students to start earlier in the progression and work their way back up, but it may not be necessary for them to answer all of the earlier items. For example, a student who answered all five items correctly in the fall might take items 2, 4, 5, 6, and 7 in the winter and items 3, 5, 7, 8, and 9 in the spring. Research will need to be done to determine the appropriate number of easy items to provide the student to scaffold their understanding and allow them to demonstrate the extent of their knowledge. Under this model, a minimum of 63 total items is required per grade/content.

Support Levels

In order to design for the variability in this student population, items should be designed with varying levels of support in mind. For example, test developers should create two versions of each assessment and provide different levels of visual and symbolic support for the student. In general, the two support levels have the following assumptions:

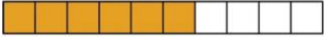
- Support Level 1 includes photographs and pictures or sounds, as well as words or numbers to assist the student with interpretation.
- Support Level 2 assumes students are fully symbolic, can work with letters and numbers, and only need minimal amounts of visual cues.


In neither case does the support level change the construct, only how the student is accessing the information. For example, a data analysis item asking students to identify a mode or a range could be depicted using a bar chart for Level 2 and a pictograph for Level 1. The data and responses would be the same, but the pictograph in Level 1 makes counting easier.


For example, the item shown in Figure 4 is the same question and requires the same conversion of fractions to decimals whether or not the blocks are shown.

Figure 4. Sample Grade 6 Math Item

Which decimal is equal to $\frac{1}{2}$?

A. 
0.60

B. 
0.50

C. 
0.40

For ELA, pictures can be added to many of the descriptive words, or one overall photo can be used. For example, Support Level 1 might receive a passage that looks like Figure 4. Support Level 2 might have the passage standalone but include photographs next to the passage to aid with understanding or even one picture that provides a more complete view, such as shown in Figure 5. Additional items for both ELA and math can be found in Appendix C.

Figure 5. Sample Grade 3 ELA Passage at Support Level 1



Forests



In forests, animals like deer and rabbits eat plants.



Tall trees protect them from rain and sun.



Squirrels build nests in trees to stay safe.

Figure 6. Variants for a Sample Grade 3 ELA Passage at Support Level 2

Forests



In forests, animals like deer and rabbits eat plants. Tall trees protect them from the rain and sun. Squirrels build nests in trees to stay safe.

Manipulatives

Regardless of support level, all students should have the opportunity to use manipulatives if that is how they take in information and communicate their response. The assessment will be designed to be delivered on a computer. However, teachers will be given guidance on how to administer items using manipulatives/concrete items to students who communicate with gestures or need additional support.

Teachers will then be able to input the student's response directly into the computer and receive the same instant feedback as those teachers whose students are responding directly on a computer.

Mathematics items should be written with the use of manipulatives in mind. Objects commonly found in the classroom must be used, and an accompanying TAM should include a list of manipulatives that teachers may want to gather for the test. They could be generic items, such as erasers, or subject-specific items, such as base-ten blocks. However, the general principle is that these objects should be used in teaching and then available for assessment, not only brought out for the first time on the assessment.

For ELA, students may need to see information broken into chunks and printed large enough for them to point to specific words. Each ELA passage and item should have accompanying cards that could be printed by the teacher and handed to the student.

Student placement form

To determine which support level is most appropriate for a student, teachers will answer a short survey about each of their students. The survey was adapted from the Learner Characteristics Inventory (LCI) used in past Indiana assessments. The LCI has been successfully used in the implementation of AA-AAS systems in many states and brings a corresponding track record of ease of implementation and use. However, the research behind it dates back to the early 2000s and needs to be updated, and the survey itself should be revisited. There have been other surveys that have attempted to give examples of the types of stimuli a student might encounter and determine instructional approaches based on those. But, ultimately, the sample survey below serves as a starting point for determining the level of symbolic support a student will need to interact successfully with the I AM.

Teachers will answer seven questions for each of their students with the most significant cognitive disabilities. Those answers will determine which test form is administered to the student. Below are the seven questions with possible answer choices. The number in parentheses is the number of "points" assigned to each response. The teachers will not see these values.

1. Student's Engagement (check the best description)
 - Initiates and sustains social interactions. (3)
 - Responds with social interaction but does not initiate or sustain social interactions. (2)
 - Alerts to others with gestures, facial expressions, or cries. (1)
 - Does not alert to others. (0)
2. Student's Expressive Communication (check the best description)
 - Uses symbolic language to communicate: student uses verbal or written words, signs, braille, or language-based augmentative systems to request, initiate, and respond to questions, describe things or events, and express refusal. (3)
 - Uses intentional communication, but not at a symbolic-language level: student uses understandable communication through such modes as gestures, pictures, objects/textures, points, etc. to clearly express a variety of intentions. (2)

- Communicates primarily through cries, facial expressions, change in muscle tone, etc. but does not clearly use objects/textures, regularized gestures, pictures, signs, etc. to communicate. (1)
 - Communication of any type does not appear to be intentional and is uninterpretable. (0)
3. Student's Receptive Language (check the best description)
- Independently follows 1–2 step directions presented through words (e.g., words may be spoken, signed, printed, or any combination) and does NOT need additional cues. (3)
 - Requires additional cues (e.g., gestures, pictures, objects, or demonstrations/models) to follow 1–2 step directions. (2)
 - Alerts to sensory input from another person (auditory, visual, touch, movement) BUT requires actual physical assistance to follow simple directions. (1)
 - Uncertain response to sensory stimuli (e.g., sound/voice, sight/gesture, touch, movement, smell). (0)
4. Student's Reading Skills (check the best description)
- Reads fluently with critical understanding in print or braille (e.g., to differentiate fact/opinion, point of view, emotional response). (3)
 - Reads fluently with basic (literal) understanding from paragraphs/short passages with narrative/informational texts in print or braille. (3)
 - Reads basic sight words, simple sentences, directions, bullets, and/or lists in print or braille. (2)
 - Aware of text/braille, follows directionality, makes letter distinctions, or tells a story from pictures that are not linked to the text. (1)
 - No observable awareness of print or braille. (0)
5. When students read a story, they prefer
- Text with pictures above each descriptive word to help them interpret the word (1)
 - Pictures that support what is happening in the story (2)
 - No pictures (3)
6. Student's Mathematics Skills (check the best description)
- Applies computational procedures to solve real-life or routine word problems from a variety of contexts. (3)
 - Performs computational procedures with or without a calculator. (2)
 - Counts with 1:1 correspondence to at least 10, and/or makes numbered sets of items. Counts by rote to 5. (1)
 - No observable awareness or use of numbers. (0)
7. When a student works a math problem, they prefer
- Working with solid objects to figure out a problem. (1)
 - Looking at graphical displays of numbers or data to figure out a problem. (2)
 - Seeing numbers and data displays shown simply with no additional supports. (3)

Questions 1–5 are summed to provide a score for ELA and questions 1–3 + 6–7 are summed for math. Then, the total scores are converted to a form based on support level using the following rubrics:

ELA points

10–15 → Support Level 2

2–9 → Support Level 1

0–2 → Support Level 1 and consider
engagement/participation rules

Math points

9–15 → Support Level 2

2–8 → Support Level 1

0–2 → Support Level 1 and consider
engagement/participation rules

While this approach is consistent with the early design work and results of the cognitive labs, these placements should continue to be studied to ensure the cut between the two support levels is in the correct place.

Teachers complete the survey prior to the assessment, and the correct form should be assigned to the student for the day of the assessment. If the teacher wishes to change the support level, a mechanism should be in place to do so between the administration windows. For instance, if a teacher believes the student is ready to move away from text that displays pictures above each descriptive word to a text with more comprehensive illustrations, the change can be requested before the next window.

Students with no reliable method of communication

Using tools such as the LCI, researchers have categorized students' expressive and receptive modes of communication. Within the population of students taking the AA-AAS, approximately 65–70 percent of students communicate through verbal or written words, through signs, or through an augmentative communication device. Another 20–25 percent use understandable communication such as gestures or pointing to pictures or objects. A small percentage of students, 8–10 percent, may communicate through cries or facial expressions but have no reliable means of symbolic communication. On the receptive end, approximately 40–50 percent of students can follow one- to two-step directions without being cued, and another 35–45 percent can follow those directions with cues. About 10 percent are alert to sensory input but do not follow cues, and less than 3 percent are not even alert (Towles-Reeves, Kearns, Kleinert, & Kleinert, 2009). Combined, approximately 10 percent of this population does not have a reliable method of communication. For these students, the most important aspect of the teachers' job is to help them develop a means of communicating.⁵

This assessment will support that goal by asking teachers to work through levels of communication to assist the student in accessing the academic content. If the student shows no engagement with the items, the teachers will focus only on the first two CCs and work with the student to move from physical support for interacting with the items to verbal cues to independence. Realistically, many of these students will spend much of their time in the physical interaction space, but teachers can demonstrate growth in the students' engagement using augmentative communication devices, gestures, and eye movement. The Florida Department of Education uses a similar model for this population with their

⁵ See <http://www.ncscpartners.org/Media/Default/PDFs/Resources/NCSCBrief4.pdf> for more information.

FSAA-Datafolio designed to address the needs of the small population of students who typically do not have a formal mode of communication.

There will be a separate rubric for this population that will focus on the level of assistance needed to work with the two CCs. The rubric will be used to capture scores at each administration and examine growth, represented by a decrease in the level of assistance needed. This rubric will need to be developed by specialists around communication for students with significant cognitive disabilities. Ultimately, the goal is to move the students to a level of communication that allows them to independently interact with the stimuli.

The intent is for teachers to work with the two CCs selected for through-year assessment so that the student has the opportunity to show progress on the same content. As they are able to interact with assessment items, students can receive a valid score on the full assessment. Professional development will be needed to train teachers on how to focus on a student's communication in an academic context to provide these students the best chance of access, support, and success. Linking communication goals to their IEP will further strengthen the alignment between instruction and assessment.

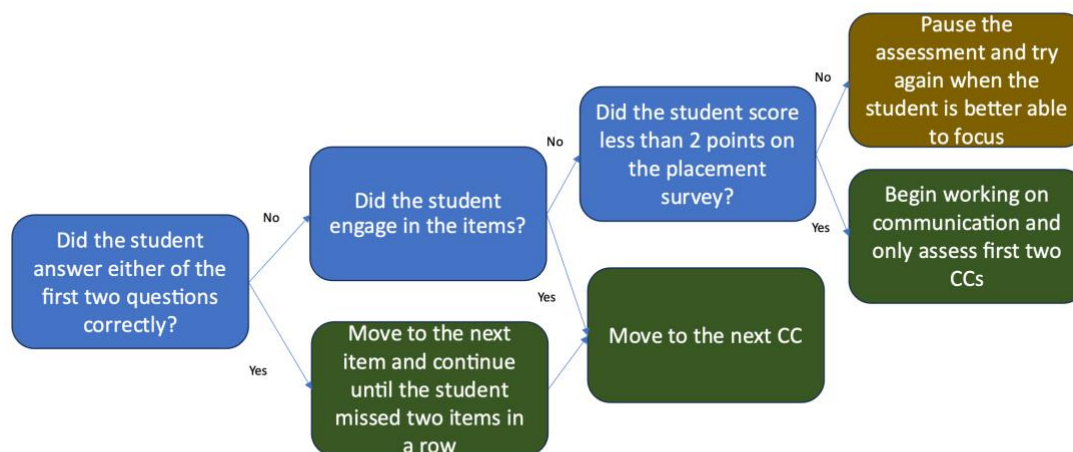
Test Administration

Along with the item specifications, items, and supports, the test developer will need to develop a TAM that guides the teacher through how to present each item, what can be read aloud, and where flexibility is allowed. The TAM will require thorough review by teachers to ensure it is complete and useful.

As mentioned earlier, each assessment window would include five CCs. We recommend conducting this assessment at the same time as the general assessment but allowing for a longer window as most teachers will work with their students one-on-one. This approach has an added benefit of syncing up the standards focused on and the instructional support to the regular classroom, for students who are mainstreamed.

In administering the assessment, the teacher would begin with the first item. Once the student has answered it, they would proceed to the next item. Then, they would reach a decision point and follow decision rules depicted in Figure 7.

Figure 7. Decision Tree for Progressing Through the Assessment



The higher-performing students will be presented with additional items to determine their degree of mastery of a CC. The lower-performing students will be allowed to move to the next CC when they have confirmed that they have reached the extent of their knowledge. Thus, the length of the test will differ by student, but no predetermination will be made about a subsequent CC based on the interaction with a previous CC. This format allows teachers to see more deeply into their student’s understanding of each academic content standard. At the same time, it prevents the continual assessment of students in content they do not understand.

As with any alternate assessment, the system should allow a teacher to pause the administration at any point when the student needs a break. Having clearly articulated sections (based on the CC assessed and the learning progression design) can help inform the timing for breaks, but teachers should not be constrained by these sections. Because students can take multiple breaks as needed, a wide administration window will be needed for these assessments.

Important to the success of this assessment is the support provided to the teacher. A well-written TAM, accompanied by training videos, will go a long way to ensure the assessment is administered as intended. Further, providing sample item sets for teachers to work on with their students will also familiarize both the teacher and the student with the new format.

Reporting

We recommend two types of reporting for the I AM—feedback and accountability. The feedback report primarily serves the teachers and parents while the accountability report includes data fed into the state accountability report and provides information for policymakers.

Feedback Report

The feedback report describes the learning targets that the students were assessed on and displays the ones answered correctly, the first one answered incorrectly, and next steps to move the student forward. For example, Figure 8 shows a descriptive table that would form the primary focus of the feedback report. It displays the five CCs that were assessed and the learning targets (LT) that make up the learning progression for each CC. Each LT represents a single item a student answered. For the LTs highlighted in green, the student answered the LT correctly. The LTs shown in gray represent items not answered correctly. The final column recommends a skill for the teacher to work on with the student that falls between the last target answered correctly and the first one answered incorrectly. The report could be enhanced with links to sample items and instructional supports for families.

Figure 8. Example Feedback Report

CC	LT1	LT2	LT3	LT4	LT5	What to work on next
3.RF.4.2 Understand the six major syllable patterns to aid in decoding unknown words.	<i>Students can identify short vowel sounds in single-syllable CVC pattern words.</i>	<i>Students can identify open vowel sounds in single-syllable V pattern words.</i>	<i>Students can identify long vowel sounds in single-syllable VCe pattern words.</i>			Long vowel sounds in single-syllable words
3.RL.2.2 Recount folktales, fables, and tall tales from diverse cultures; identify the themes in these works	<i>Students can identify a folktale, fable, and tall tale.</i>	<i>Students can identify a key detail in folktales, fables, and tall tales from diverse cultures.</i>				Discuss details in a story from a folktale, fable, or tall tale.
3.RN.2.1 Ask & answer questions to demonstrate comprehension of a text, referring explicitly to the text as the basis for the answers.	<i>Students can identify answers to what and/or who questions in nonfiction texts.</i>	<i>Students can identify answers to where questions in nonfiction texts.</i>	<i>Students can identify answers to when questions in nonfiction texts when elements of time are explicitly stated.</i>	<i>Students can identify answers to simple why questions in nonfiction texts.</i>		Continue to work on asking students questions about nonfiction texts, focusing specifically on why something occurred.
3.W.6.2 Demonstrate command of capitalization, punctuation, and spelling	<i>Students can correctly use capitalization.</i>	<i>Students can correctly use apostrophes to form contractions.</i>				Work on recognizing and using apostrophes to both form a contraction and a possessive noun.
3.CC.4	<i>Students can identify details in a text read aloud or information presented orally or through other media.</i>	<i>Students can distinguish between important ideas and unimportant ideas.</i>	<i>Students can determine the main ideas in a text read aloud or information presented orally through other media.</i>	<i>Students can identify key details that support the main ideas of text read aloud or information presented orally through other media.</i>		Focus on details in a text, asking how important they are and whether and how they support the main idea.

Figure 9 displays a feedback report for the end of the year that summarizes performance across all three test windows. The highest LT a student reached is displayed for each test window. Then, the number of LTs answered correctly within each progression is summed and displayed. For the through-year CCs (displayed as the first two CCs), the highest number is displayed, regardless of which window it mastered. For example, if the student answered three items correctly in the second window but only

two for the same CC in the third window, the summed score would be three. It is important to note that the LTs are intended to be instructionally useful, but the evidence from the I AM supports claims regarding mastery of the full CC, not any one point on a learning progression. Thus, a reliability calculation would be made on the full CC, not on a single item related to a single LT.

Figure 9. Example Summative Feedback Report

CC	Fall	Winter	Spring	Total LTs Satisfied
3.RF.4.2	LT1: Students can identify short vowel sounds in single-syllable CVC pattern words.	LT3: Students can identify long vowel sounds in single-syllable VCe pattern words.	LT3: Students can identify long vowel sounds in single-syllable VCe pattern words.	3
3.RL.2.2	LT1: Students can identify answers to what and/or who questions in nonfiction texts. LT2: Students can identify a key detail in folktales, fables, and tall tales from diverse cultures.	LT1: Students can identify answers to what and/or who questions in nonfiction texts.	LT2: Students can identify answers to where questions in nonfiction texts.	2
3.RN.2.1		Not Administered	Not Administered	2
3.W.6.2	LT3: Students can use quotations marks to indicate direct speech.	Not Administered	Not Administered	3
3.CC.4	LT1: Students can identify details in a text read aloud or information presented orally or through other media.	Not Administered	Not Administered	1
CC6	Not Administered	LT3 w/ Description	Not Administered	3
CC7	Not Administered	LT1 w/ Description	Not Administered	1
CC8	Not Administered	LT3 w/ Description	Not Administered	3
CC9	Not Administered	Not Administered	LT3 w/ Description	3
CC10	Not Administered	Not Administered	LT4 w/ Description	4
CC11	Not Administered	Not Administered	LT3 w/ Description	3

The through-year CCs could be further highlighted by showing results from each administration as shown in Figure 10.

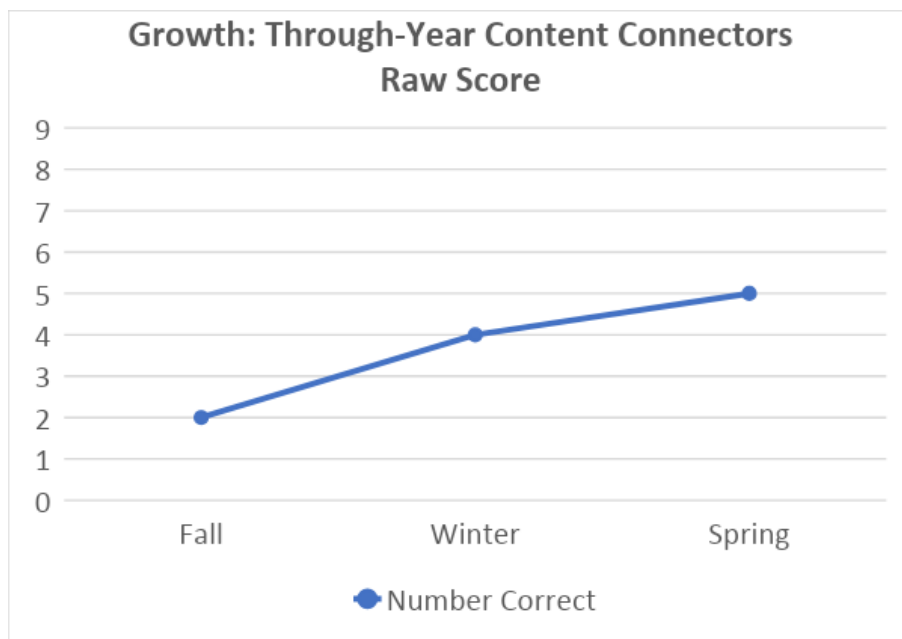
Figure 10. *Example Summative Feedback Report for Through-Year CCs*

CC	Grade 3	Grade 4	Grade 5
3.RF.1	<i>LT1: Students can identify short vowel sounds in single-syllable CVC pattern words.</i>	<i>LT3: Students can identify long vowel sounds in single-syllable VCe pattern words.</i>	<i>LT3: Students can identify long vowel sounds in single-syllable VCe pattern words.</i>
3.RC.1	<i>LT1: Students can identify answers to what and/or who questions in nonfiction texts.</i>	<i>LT1: Students can identify answers to what and/or who questions in nonfiction texts.</i>	<i>LT2: Students can identify answers to where questions in nonfiction texts.</i>
3.RC.2	<i>LT2: Students can identify a key detail in folktales, fables, and tall tales from diverse cultures.</i>	<i>LT3: Students can associate details with events in folktales, fables, and tall tales from diverse cultures.</i>	<i>LT4: Students can retell key details in folktales, fables, and tall tales from diverse cultures.</i>
3.W.8	<i>LT3: Students can use quotations marks to indicate direct speech.</i>	<i>LT3: Students can use quotations marks to indicate direct speech.</i>	<i>LT3: Students can use quotations marks to indicate direct speech.</i>
3.CC.4	<i>LT1: Students can identify details in a text read aloud or information presented orally or through other media.</i>	<i>LT2: Students can distinguish between important ideas and unimportant ideas.</i>	<i>LT4: Students can identify key details that support the main ideas of text read aloud or information presented orally through other media.</i>

For students in the progress mode, the reports could combine the revised LCI with a description of the level of support required to achieve an accurate response for each of the items in the two through-year CCs. These reports will focus primarily on student communication and thus be quite different. Further work with educators and families is needed to determine what type of feedback would be most useful.

Additionally, a summative feedback report for either group could graphically display the progress made across the two through-year CCs, such as shown in Figure 11. However, it is worth noting that the chart depicts consistent growth, while this will likely not be the reality for many students. Given the few number of items going into these charts, the amount of error may limit their usefulness. Figure 11 combined the scores from the two CCs, but it could also be useful to display them separately as well.

Figure 11. *Example Growth Chart*



Accountability Report

The Accountability Report could include the information in Figures 9 and 10 (and perhaps 11) as well as the total score and achievement level. The summative score is the sum of the total LTs satisfied; in this case, 28. The process of setting cut scores is described later in this report, but a lookup table can translate the raw score into one of three performance categories: Below Proficiency, Approaching Proficiency, or At Proficiency.

Additionally, teachers and parents may find normative data useful. Once results have been calculated for the full state, information could be added to the reports that show how an individual student performed compared to other students taking the I AM in the same corporation and statewide.

Aggregate Reports

Aggregate reports can be created from both feedback information and accountability data. For instance, Figure 12 shows an aggregate table of the number of students in the school reaching each LT for each CC.

Figure 12. *Example School Aggregate Report from a Single Administration*

CC	LT1	LT2	LT3	LT4
3.RF.4.2	4	2	0	1
3.RL.2.2	3	3	1	0
3.RN.2.1	1	6	0	0
3.W.6.2	4	2	1	0
3.CC.4	3	3	0	1

Summative Score

Up until recently, scores for alternate assessments were reported in a raw score metric, and classical test theory was used for item analyses and linking. Although some programs have moved to item response theory (IRT), the data must support the assumptions to do so. Prior to moving to an IRT model, the assumptions of increasing difficulty along the learning progression must be met. Moreover, given the scaffolding of the content within a CC, the items will build on each other and may not be fully independent.

Therefore, it is the recommendation of the Expert Panel to leave these scores in the raw metric and continue to use classical test theory to analyze the data. The raw score includes the number of LTs satisfied or the number of items answered correctly. Most short open-ended items will still lend themselves to binomial scoring (right/wrong), although there may be an occasion for partial credit, in which case the raw score is the number of points. Simultaneously, research studies can validate the assumptions of increasing difficulty along the learning progression and test for local item independence. Once these assumptions have been confirmed, a Rasch model would allow for easier item bank enhancements and annual equating.

Because some students will have the opportunity to get tested on additional items in the through-year CCs, they will have more chances to receive points. This difference should be accounted for during standard setting to examine profiles of students answering more than five items correctly for the first two connectors. Examining whether those students are also scoring well in other connectors or showing evidence of splinter skills will determine the degree to which they will appear in the highest performance level.

Standard Setting

Considerations for standard setting include writing Performance Level Descriptors (PLDs) and setting cut scores.

Performance Level Descriptors

PLDs start with policy definitions of each performance level and then are tailored to each subject and grade based on the content standards for range PLDs. The current policy PLDs for I AM are as follows:

LEVEL 1: Below Proficiency Indiana students below proficiency have not met current grade level Content Connectors. Students may require significant support to develop the knowledge, application, and skills to be on track for post-secondary education or competitive integrated employment.

LEVEL 2: Approaching Proficiency Indiana students approaching proficiency have nearly met current grade level Content Connectors by demonstrating some basic knowledge, application, and skills. Students may require support to be on track for post-secondary education or competitive integrated employment.

LEVEL 3: At Proficiency Indiana students at proficiency have met current grade level Content Connectors by demonstrating essential knowledge, application, and skills to be on track for postsecondary education or competitive integrated employment.

Once the CCs are adopted and learning progressions have been determined, content experts can draft range PLDs. Educators should be involved in either drafting or reviewing the PLDs before they are used in standard setting. The LTs should guide the development of the PLDs, but determination will need to be made about which target(s) represents the “approaching” level and which represents the student being At Proficiency. All 11 assessed CC can thus be used in defining the PLDs for each subject and grade.

In addition, the design described in this document breaks the first performance level into an additional three levels for students with limited or no reliable form of communication. The focus of their score is on progress made in communication, and those levels include “No progress,” “Some progress,” and “Significant progress,” which will all be defined during the standard setting activities.

Progress PLDs

PLDs should also be developed for students with limited or no reliable means of communication. They will be working along a continuum of access toward academic achievement, using the through-year CC. A possible categorization is as follows:

No measurable progress. Students at this level do not demonstrate an adequate level of success progressing toward independently accessing the Indiana Content Connectors.

Some progress. Students at this level demonstrate partial success progressing toward independently accessing the Indiana Content Connectors.

Significant progress. Students at this level demonstrate success progressing toward independently accessing the Indiana Content Connectors. They now have a means of communicating understanding.

Cut Scores

A policy decision should be made as to whether the first cut score should be set judgmentally or simply set at the chance level (or within 1 or 2 standard errors of chance). A judgmental approach to setting cut scores occasionally results in the first cut score being set below chance. One possibility to avoid this situation is to place the “chance” cut score as the lowest possible cut score and allow panelists to engage in a judgmental activity about whether to accept that score or raise it.

Regardless of the choice for the first cut score, either or both can be set using an ordered profile method, possibly combined with a modified Angoff approach. The ordered profile approach entails determining the most common ways students receive each summative score. For example, Figure 5 showed one possible combination resulting in 28 points. The top five most common ways of reaching 28 points would be displayed, and the panelists would be asked to determine if all the ways of reaching 28 points demonstrate performance that is Approaching Proficiency or At Proficiency.

To prepare for the standard setting workshop, an ordered profile booklet is prepared with the top five combinations of each score point shown, starting at the chance level (e.g., 20 points on a 60-point test with all 3-option multiple-choice items) and proceeding through the highest point value observed. Panelists start with the chance level and determine if that is sufficient performance to be categorized as Approaching Proficiency. If not, they proceed through the ordered profile book to reach the set of profiles they believe represents the lowest score point that represents the performance described by the Approaching Proficiency PLD. They then proceed through the booklet until they find the score that best represents performance defined by the At Proficiency PLD.

Typical to other standard setting methods, panelists make independent judgments and compare their results to those of their peers. Then, they receive impact data and decide what effect that has on their cut score placement.

A modification that has been used in Tennessee is to start the process with a yes-no Angoff procedure. For each item (not CC), the panelists are asked whether a student who is just barely operating at the Approaching Proficiency level would answer it correctly. Summing the number of times the panelists said “yes” provides a range for the first cut score. Starting with an Angoff question reduces the number of profiles a panelist needs to consider as a smaller range is determined prior to working with the ordered profile booklet.

Progression Cut Scores

For the students with no or almost no reliable means for communication, their assessment will focus on progress made in answering items independently for the through-year CCs. Teachers will record the type of communication the student is attempting (e.g., touch, eye gaze, augmentative device). Using a rubric, students will be scored on how much progress was made.

Florida has a rule-based cut score, which may work well here, depending on the rubric. That is, zero progress puts a student in the lowest level, but if any administration shows progress, the student moves

into the “some progress” level. Requiring consistent progress for the “significant progress” level would ensure that students moving back to the full I AM have a reliable mode of communication.

Validity Studies

All of these recommendations are based on a single-year study working with a small number of educators, experts, and students. As the design is operationalized, several validity studies will be needed to ensure the goals of the design are met.

First, the design is predicated on the ability to produce a set of LTs that progress in order within a CC. Those learning progressions need to be tested and verified.

Second, the supports are intended to help and not hinder student performance, but the use of photographs, pictures, and manipulatives needs further study. Moreover, to work well, these supports need to be used during instruction and not just in assessment. This study could be augmented by a survey at the end of each administration asking the teacher whether the items allowed the student to show their knowledge and what else could be done to further support the student.

Third, the communication arm of the assessment assumes that students can be taught to communicate. Early research indicates that this assumption is reasonable, but IDOE will need to train their teachers to do so and validate the rubric for evaluating the progress in developing a reliable mode of communication.

Fourth, the use of IRT in analyzing results should be studied. Specifically, looking at the distribution of students and the local item dependence will determine whether a Rasch model can be applied or whether results should stay in a raw score metric.

Fifth, the usefulness of the feedback reports should be studied. A goal of this assessment design is to better align the assessment with instruction and IEP goals. The reports are a mechanism for doing so, but their success should be monitored.

Finally, IDOE should consider an impact study of the effect of teaching CCs and assessing them using an alternate assessment. The policy definition of proficiency includes the claim “Indiana students at proficiency have met current grade-level Content Connectors by demonstrating essential knowledge, application, and skills *to be on track for postsecondary education or competitive integrated employment.*” The italics were inserted for emphasis as they need to be evaluated. What is the long-term impact of students reaching proficiency? Do we have evidence that students with significant cognitive disabilities are learning more as a result of this increased focus on academic instruction and assessment?

Appendix A: Item Specifications

Domain	Reading Foundations
2023 IAS Standard	3.RF.1: Understand the six major syllable patterns (CVC, CVr, V, VV, VCe, Cle) to aid in decoding unknown words.
Content Connector	Understand the six major syllable patterns.
Content Limits	Use only at or below grade-level words. First four levels of the progression must be based on single-syllable words. Words should reflect high interest words for third graders.
Recommended Response Mechanisms	TBD following item tryouts
Learning Progressions (Highlighted statements are those selected for item development.)	Students can identify short vowel sounds in single-syllable CVC pattern words.
	Students can identify open vowel sounds in single-syllable V pattern words.
	Students can identify long vowel sounds in single-syllable VCe pattern words.
	Students can identify vowel team sounds in single syllable VV pattern words.
	Students can identify R-controlled vowel sounds in CVr pattern words.
	Students can identify final stable syllable vowels sounds in CLe pattern words.
	Students can decode words with common syllable patterns (CVC, CVr, V, VV, VCe, Cle).

Domain	Reading Comprehension
2023 IAS Standard	3.RC.1: Ask and answer questions to demonstrate the comprehension of a text, referring explicitly to the text as the basis for the answers.
Content Connector	Answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
Content Limits	<p>Passages should be nonfiction/informational genre.</p> <p>Passages must reflect content to support the range of questions outlined in the progressions.</p> <p>Passages should avoid vocabulary above grade level, unless ample context is present for student to determine meaning.</p> <p>Passages must include graphical images to support the text of the passage at the level of words and supporting graphics.</p> <p>Items should include no more than three “options” as appropriate to the selected item type.</p>
Recommended Response Mechanisms	TBD following item tryouts
Learning Progressions (Highlighted statements are those selected for item development.)	Students can identify answers to what and/or who questions in nonfiction texts.
	Students can identify answers to where questions in nonfiction texts.
	Students can identify answers to when questions in nonfiction texts when elements of time are explicitly stated.
	Students can identify answers to simple why questions in nonfiction texts.
	Students can identify answers to who, what, when, where and why questions, referring explicitly to the text to demonstrate understanding in nonfiction texts.

Domain	Reading Comprehension
2023 IAS Standard	3.RC.2: Recount folktales, fables, and tall tales from diverse cultures; identify the themes in these works.
Content Connector	Retell folktales, fables, and tall tales from diverse cultures. Identify a theme in a folktale, fable, and tall tale.
Content Limits	<p>Passages should be in the form of a folktale/fable/tall tale. To achieve the highest level of the learning progression, the passage must include a moral as part of the story. The passage should reflect a moral that is likely known to third grade students and reflect a moral with which students of diverse backgrounds should be familiar.</p> <p>Passages should avoid vocabulary above grade level, unless ample context is present for student to determine meaning.</p> <p>Passages must include graphical images to support the text of the passage at the level of words and supporting graphics.</p> <p>Items should include no more than three “options” as appropriate to the selected item type.</p>
Recommended Response Mechanisms	TBD following item tryouts
Learning Progressions (Highlighted statements are those selected for item development.)	Students can identify a folktale, fable, and tall tale.
	Students can identify a key detail in folktales, fables, and tall tales from diverse cultures.
	Students can associate details with events in folktales, fables, and tall tales from diverse cultures.
	Students can retell key details in folktales, fables, and tall tales from diverse cultures.
	Students can retell key details sequentially in folktales, fables, and tall tales from diverse cultures.
	Students can identify a simple theme in folktales, fables, and tall tales from diverse cultures.
	Students can identify the moral and relate to it themselves.

Domain	Writing
2023 IAS Standard	<p>3.W.8: Demonstrate command of capitalization, punctuation, and spelling, focusing on:</p> <ul style="list-style-type: none"> a. Capitalization – Capitalizing appropriate words in titles, historical periods, company names, product names, and special events. b. Punctuation – <ul style="list-style-type: none"> I. Correctly using apostrophes to form contractions and singular and plural possessives. II. Using quotation marks to direct speech. III. Using commas in locations and addresses, to mark direct speech, and for coordinating adjectives (e.g., small, red bicycle). c. Spelling – <ul style="list-style-type: none"> I. Using correct spelling for irregularly spelled words (e.g., said, does, gone) and other studied words and for adding affixes to base words. II. Using spelling patterns and generalizations (e.g., word families, position-based spellings, syllable patterns, ending rules, meaningful word parts, homophones/homographs) when writing.
Content Connector	<p>Effectively use capitalization, punctuation, and spelling. Appropriately use capitalization. Use apostrophes to form contractions. Use contractions to form singular and plural possessives. Use quotation marks to indicate direct speech. Appropriately use commas. Use conventional spelling for high-frequency and other studied words.</p>
Content Limits	<p>Content can be presented in the context of individual sentences or short paragraphs of no more than 3–4 sentences. Use only at or below grade-level words.</p>

Recommended Response Mechanisms	TBD following item tryouts
Learning Progressions (Highlighted statements are those selected for item development.)	Students can correctly use capitalization.
	Students can correctly use apostrophes to form contractions.
	Students can correctly use apostrophes to form singular and plural possessives.
	Students can use quotations marks to indicate direct speech.
	Students can correctly use commas.
	Students can correctly use conventional spelling for high-frequency and other studied words.

Domain	Communication and Collaboration
2023 IAS Standard	3.CC.4: 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.
Content Connector	Retell, paraphrase, and explain the main ideas of a text read aloud or information presented in diverse media and formats, including visually, quantitatively. Retell, paraphrase, and explain the supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively.
Content Limits	<p>Passage should be nonfiction/informational genre and include a main idea for the passage overall and a main idea for at least two paragraphs.</p> <p>Passage must reflect content to support the range of questions outlined in the progressions—especially supporting details and important/unimportant ideas.</p> <p>Passages should avoid vocabulary above grade level, unless ample context is present for student to determine meaning.</p> <p>Passages must include graphical images to support the text of the passage at the level of words and supporting graphics to reflect overall passage content.</p> <p>Items should include no more than three “options” as appropriate to the selected item type.</p>
Recommended Response Mechanisms	TBD following item tryouts
Learning Progressions (Highlighted statements are those selected for item development.)	Students can identify details in a text read aloud or information presented orally or through other media.
	Students can distinguish between important ideas and unimportant ideas.
	Students can determine the main ideas in a text read aloud or information presented orally through other media.
	Students can identify key details that support the main ideas of text read aloud or information presented orally through other media.

	Students can explain a text read aloud or information presented orally through other media by using supporting details.
--	---

Guidance for allowable item types

The item tryout will focus on the presentation of stimuli involving words supported by graphics—both graphics that help to illustrate key content in the passage, as well as images within a sentence to support student understanding of individual words within the sentence. Images also should be included for reading foundations items as appropriate to the item type. Whenever possible, photographs should be used as visual support as research shows children respond better to photos than drawings.

All passages and items will be read aloud to students, but passages also will be presented to the students to read along. Passages should be grade appropriate and reflect topics of interest and relevance to third grade students. More complete passage specifications need to be developed.

To support students accessing the content, the entry-level steps of the progression should avoid the use of content-specific language. The later steps should leverage content-specific language.

The goal for the classroom tryout is to pilot a variety of item types that reflect formats that extend beyond traditional multiple choice. The tryout will be administered in a paper format with the recognition that paper formats should readily translate to online formats.

To that end, we envision paper variations of match table grid (with a maximum of three rows and three columns of options), hot spot, fill-in, and text highlight that can be deployed. See examples below.

Reading Foundations

Item stems can include graphics [photographs] in the stems and/or response options.

Version 1

[Aloud: This is a cat.]

[Visible: graphic of a cat is presented to the student.]

[Aloud only: Which word has the same vowel sound as the word “cat”?]

[Answer choices are visible and read aloud.]

pot

hat

bed

Version 2

[Aloud and presented in text to the student: Which word contains a long vowel sound?]

[Answer choices are visible and read aloud.]

nose

sock

frog

Version 3

[Aloud: This is a coat.]

[Visible: photograph of a coat is presented to the student.]

[Aloud only: Which word has the same vowel sound as coat?]

[Response options are presented as photographs while names of objects are read aloud.]

bear

boot

boat

Reading Comprehension and Communication and Collaboration

Match Table Grid:

Can be used for who/what/where/when questions, for important ideas v. unimportant ideas, key details that support the main idea, and others.

(Note: Simpler items are possible by eliminating “Both” column in appropriate circumstances.)

Use the table to show what each character does in the story.

What Character Does	Bobby	Mom	Both
drives the car	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
goes on a hike	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
sees a butterfly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use the table to show where bats and birds live.

Where Bats and Birds Live	Bats	Birds	Both
in trees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
in caves	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
under bridges	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Text Highlight and Hot Spot

Possible scenarios:

Choose the sentence from paragraph X that tells the lesson of the story.

Choose the sentence from the story that **best** shows what Jaime learned.

Choose details from the passage that best support the main idea.

Present sentences from the passage in a box in one of two ways:

1. The student selects the correct sentence from those presented (no sentences are highlighted). This item format can be converted to Hot Spot when presented online.
2. Three sentences of the selected passage excerpt are highlighted to emphasize as the available options for the student to choose from, with one being correct (e.g., point to the sentence that provides a key detail, point to the sentence that support the main idea). This item format can be converted to Text Highlight when presented online.

This is sentence 1. This is sentence 2. This is sentence 3. This is sentence 4.

Note that the excerpt can be longer than above example of four sentences, as appropriate for the item's need to present context and distractors.

For the Content Connector 3.RL.2.2.a.1 and its Learning Progression step to “retell key details sequentially,” three to four details could each be placed in a box and the boxes displayed on the page out of order from passage sequence.

A series of item stems could be asked to elicit from student the proper sequence of details. For example,

Look at the boxes. Each box shows something that happened in the story, but the boxes are not in the correct order.

What happens **first** in the story? Choose the box that shows what happens **first** in the story. [If student answers incorrectly, provide the correct answer and move on to the next question.]

What happens **next** in the story? Choose the box that shows what happens **next** in the story. [If student answers incorrectly, provide the correct answer and move on to the next question.]

What happens **last** in the story? Choose the box that shows what happens **last** in the story.

For Communication and Collaboration, students can be provided a series of images drawn from the passage. Several should reflect details that support the main idea while others do not. Students highlight the images that reflect details that support the main idea.

Writing

Present a passage of three to four sentences. Students identify the sentence that reflects the appropriate use of punctuation. This item format can be converted online to either text highlight or hot spot format.

For a single sentence, students identify the word that reflects correct usage (spelling or punctuation).

Present a sentence and leave a blank for students to insert correct punctuation (fill-in).

Inline choice can be used for spelling and conventions (e.g., apostrophes, commas, quotations marks).

Domain	Number Sense
2023 IAS Standard	MA.6.NS.4: Solve real-world problems with positive fractions and decimals by using one or two operations.
Content Connector	Solve one-step real-world addition or subtraction problems with decimals or fractions.
Content Limits	Items should not include regrouping. Fractions should be limited to halves, fourths, fifths, or tenths.
Recommended Response Mechanisms	TBD following item tryouts
Learning Progressions (Highlighted statements are those selected for item development.)	Students can solve an addition problem involving decimals to tenths.
	Students can solve an addition problem involving decimals to hundredths.*
	Students can solve a subtraction problem involving decimals to tenths.
	Students can solve a subtraction problem involving decimals to hundredths.*
	Students can solve an addition problem involving fractions with like denominators.*
	Students can solve an addition problem involving fractions with unlike denominators.*
	Students can solve an addition problem involving a decimal to tenths and a fraction in halves or tenths.*
	Students can solve an addition problem involving a decimal to hundredths and a fraction in fourths or fifths.*
	Students can solve an addition word problem involving a decimal to tenths and a fraction in halves or tenths.*
	Students can solve an addition word problem involving a decimal to hundredths and a fraction in fourths or fifths.*
	Students can solve a subtraction problem involving fractions with like denominators.*
	Students can solve a subtraction problem involving fractions with unlike denominators.*
	Students can solve a subtraction problem involving a decimal to tenths and a fraction in halves or tenths.*
	Students can solve a subtraction problem involving a decimal to hundredths and a fraction in fourths or fifths.*

	Students can solve a subtraction word problem involving a decimal to tenths and a fraction in halves or tenths.*
	Students can solve a subtraction word problem involving a decimal to hundredths and a fraction in fourths or fifths.*

Domain	Number Sense
2023 IAS Standard	MA.6.NS.5: 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.
Content Connector	Apply the order of operations.
Content Limits	A maximum of 2 operations should be used. Whole numbers 1–10 may be used.
Recommended Response Mechanisms	TBD following item tryouts
Learning Progressions (Highlighted statements are those selected for item development.)	Students can use order of operations to evaluate an expression in the order of multiplication followed by addition or subtraction.
	Students can use order of operations to evaluate an expression in the order of division followed by addition or subtraction.*
	Students can use the order of operations to evaluate an expression of addition followed by multiplication in parenthesis.*
	Students can use the order of operations to evaluate an expression of subtraction followed by multiplication in parenthesis.*
	Students can use the order of operations to evaluate an expression of addition followed by division in parenthesis.*
	Students can use the order of operations to evaluate an expression of subtraction followed by division in parenthesis.*
	Students can use the order of operations to evaluate an expression of addition or subtraction followed by multiplication without parenthesis.*
	Students can use the order of operations to evaluate an expression of addition or subtraction followed by division without parenthesis.*

Domain	Ratios and Proportional Reasoning
2023 IAS Standard	MA.6.RP.1: Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator.
Content Connector	Identify the decimal and percent equivalents for halves, fourths, fifths, and tenths.
Content Limits	Fractions should be limited to halves, fourths, fifths, or tenths. Decimals should be limited to hundredths.
Recommended Response Mechanisms	TBD following item tryouts
Learning Progressions (Highlighted statements are those selected for item development.)	Students can identify a number as a decimal, percent, or fraction.
	Students can identify a percent equivalent to a given decimal.*
	Students can identify a decimal equivalent to a given percent.*
	Students can identify a decimal equivalent to one half or one tenth.*
	Students can identify a decimal equivalent to one fourth or one fifth.*
	Students can identify a decimal equivalent to a given fraction in halves or tenths.*
	Students can identify a decimal equivalent to a given fraction in fourths or fifths.*
	Students can identify a percent equivalent to one half or one tenth.*
	Students can identify a percent equivalent to one fourth or one fifth.*
	Students can identify a percent equivalent to a given fraction in halves or tenths.*
	Students can identify a percent equivalent to a given fraction in fourths or fifths.*
	Students can identify a fractional equivalent to a given decimal in tenths.*
	Students can identify a fractional equivalent to 0.25 or 0.75.*
	Students can identify a fractional equivalent to a given percent in tenths.*

Students can identify a fractional equivalent to 25% or 75%.*

Domain	Algebra and Functions
2023 IAS Standard	MA.6.AF.2: Demonstrate 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.
Content Connector	Use substitution to determine validity of an equation or inequality.
Content Limits	Whole numbers 1–20 may be used.
Recommended Response Mechanisms	TBD following item tryouts
Learning Progressions (Highlighted statements are those selected for item development.)	Students can determine if an addition or subtraction equation is true when given a value to substitute for the unknown.*
	Students can determine if a multiplication or division equation is true when given a value to substitute for the unknown.*
	Students can determine if an addition or subtraction inequality is true when given a value to substitute for the unknown.*
	Students can determine if a multiplication or division inequality is true when given a value to substitute for the unknown.*
	Students can use the symbols greater than, less than or equal to make a true statement when given a value to substitute for the unknown.
	Students can determine a value for a variable that makes an addition or subtraction equation true.*
	Students can determine a value for a variable that makes a multiplication or division equation true.*
	Students can determine a value for a variable that makes an addition or subtraction inequality true.*
	Students can determine a value for a variable that makes a multiplication or division inequality true.*

Domain	Data Analysis, and Statistics
2023 IAS Standard	<p>MA.6.DS.3: Summarize numerical data sets in relation to their context in multiple ways, such as:</p> <ul style="list-style-type: none"> a. report the number of observations b. describe the nature of the attribute under investigation, including how it was measured and its units of measurement c. determine quantitative measures of center (mean and/or median) and spread (range and interquartile range) d. describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered e. 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.
Content Connector	Select a statement that matches mean, mode, and spread of data for 1 measure of central tendency for a given data set.
Content Limits	<p>A maximum of 5 data points should be used.</p> <p>Whole numbers 1–20 may be used.</p>
Recommended Response Mechanisms	TBD following item tryouts
Learning Progressions (Highlighted statements are those selected for item development.)	Students can identify mode of an ordered set of data.*
	Students can identify mode of a data set given in a bar graph or line plot.*
	Students can identify mode of an unordered set of data.*
	Students can identify range of an ordered set of data.*
	Students can identify range of a data set given in a bar graph or line plot.*
	Students can identify range of an unordered set of data.*
	Students can identify mean of an ordered set of data.
	Students can identify mean of a data set given in a bar graph or line plot.
	Students can identify mean of an unordered set of data.*
	Students can match data to a statement about mode.*
	Students can match data to a statement about range.*
	Students can match data to a statement about the mean.*

Students can match data to a statement about a combination of measures.

Guidance for allowable item types

The goal for the classroom tryout is to pilot a variety of item types that reflect formats that extend beyond traditional multiple choice. The tryout will be administered in a paper format with the recognition that paper formats should readily translate to online formats.

For example, we envision paper variations of multiple-select multiple choice, match table grid (with a maximum of three rows and columns), hot spot, fill-in-the-blank, and inline choice can be deployed. See examples below.

To support students accessing the content, the entry-level steps of the progression should avoid the use of content-specific language. The later steps should leverage content-specific language.

Multiple Select Multiple Choice

Items stems can include graphics in the stems and/or response options.

Version 1

[Aloud: This is X percent.]

[Visible:] [Graphic of a representation of the percent.] Presented as the item is said aloud

[Aloud only: Which decimal or fraction has the same value as X percent?]

[Aloud only: Choose the **two** correct answers.]

[Answer choices are visible and read aloud.]

Fraction equal to X%

Fraction not equal to X%

Decimal equal to X%

Decimal not equal to X%

Version 2

[Aloud and presented in text to the student: Which picture shows X%?]

[Aloud and presented in text to the student: Choose the **two** correct answers.]

[Answer choices are visible and may be read aloud, if applicable.]

Picture of Fraction equal to X%

Picture of Fraction not equal to X%

Picture of Decimal equal to X%

Picture of Decimal not equal to X%

Match Table Grid (MTG):

Can be used for matching equivalent values; classification, comparisons, or true/false situations.

(Note: Simpler items possible by eliminating “Both” column in appropriate circumstances.)

Use the table to show if the number sentence is true or not true

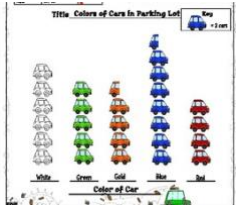
Number Sentence	True	Not True
$2 = 2$	<input type="radio"/>	<input type="radio"/>
$1 + 2 = 2$	<input type="radio"/>	<input type="radio"/>
$4 - 4 = 4$	<input type="radio"/>	<input type="radio"/>

Use the table to show if the number is a fraction, decimal, or percent.

Number	Fraction	Decimal	Percent
0.5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7%	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
$\frac{2}{3}$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Hot Spot

Choose the column that has the most cars.



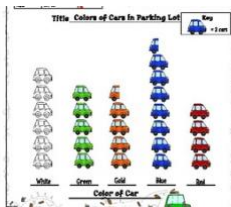
Fill-In-The-Blank

Students can give a value or a single word answer.

What is $2+2$?

[blank]

Inline Choice



The number of white cars is [greater than/less than/equal to] the number of red cars.

Appendix B: Extended Learning Progressions

Indiana Alternate Measure (I AM) Research Project: Extended Learning Progressions

December 2023

Extended Learning Progressions for English/Language Arts

Standard 3.RC.1: Ask and answer questions to demonstrate the comprehension of a text, referring explicitly to the text as the basis for the answers.

Content Connector:

- Answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

Learning Progressions	Students can identify answers to what and/or who questions in nonfiction texts.
	Students can identify answers to where questions in nonfiction texts.
	Students can identify answers to when questions in nonfiction texts when elements of time are explicitly stated.
	Students can identify answers to simple why questions in nonfiction texts.
	Students can identify answers to who, what, when, where and why questions, referring explicitly to the text to demonstrate understanding in nonfiction texts.

Standard 4.RC.1: Refer to details and examples in a text when explaining what a text says explicitly and when drawing inferences from the text.

Content Connectors:

- Refer to details and examples in a text when explaining what the text says explicitly.
- Refer to details and examples in a text when drawing basic inferences from a work of literature.

Learning Progressions	Students can explain their answers to what and who questions in nonfiction texts and to simple questions about character (e.g., traits) in literary texts by referring to details and examples explicitly stated in a text.
	Students can explain their answers to where questions in nonfiction texts and to simple questions about setting (e.g., place; time of day or the season) in literary texts by referring to details and examples explicitly stated in a text.
	Students can explain their answers to when questions in nonfiction texts and to simple questions about plot (e.g., sequence of events) in literary texts by referring to details and examples explicitly stated in a text.
	Students can explain their answers to simple why questions in nonfiction texts and to questions about theme in literary texts by referring to details and examples explicitly stated in a text.
	Students can explain their answers to who, what, when, where and why questions in nonfiction texts and to questions about character, setting, plot, and theme in literary texts by drawing basic inferences that refer to details and examples in a text.

Standard 5.RC.1: Quote accurately from a text when explaining what a text says explicitly and when drawing inferences from the text.

Content Connectors:

- Refer to details and examples in a text when explaining what the text says explicitly.
- Refer to specific text evidence to support inferences.

Learning Progressions	Students can explain their answers to what and who questions in nonfiction texts and to questions about character (e.g., traits; actions; motivations) in literary texts by referring to details and examples explicitly stated in the text or by drawing basic inferences supported by specific text evidence.
	Students can explain their answers to where and when questions in nonfiction texts and to questions about setting (e.g., place; time of day or the season) in literary texts by referring to details and examples explicitly stated in the text or by drawing basic inferences supported by specific text evidence.
	Students can explain their answers to why questions in nonfiction texts and to questions about plot (e.g., sequence of events; resolution) in literary texts by referring to details and examples explicitly stated in the text or by drawing basic inferences supported by specific text evidence.
	Students can explain their answers to who, what, when, where and why questions in nonfiction texts and to questions about character, setting, plot, and theme in literary texts by drawing more complex inferences supported by specific text evidence.

Extended Learning Progressions for Mathematics

Standard 6.NS.4: Solve real-world problems with positive fractions and decimals by using one or two operations.

Content Connector: Solve one-step real-world addition or subtraction problems with decimals or fractions.

Learning Progressions	Students can solve an addition problem involving decimals to tenths.
	Students can solve a subtraction problem involving decimals to tenths.
	Students can solve an addition or subtraction problem involving decimals to hundredths.
	Students can solve an addition or subtraction problem involving fractions.
	Students can solve an addition problem involving a decimal to tenths and a fraction in halves or tenths.
	Students can solve a subtraction problem involving a decimal to tenths and a fraction in halves or tenths.
	Students can solve an addition problem involving a decimal to hundredths and a fraction in fourths or fifths.
	Students can solve a subtraction problem involving a decimal to hundredths and a fraction in fourths or fifths.
	Students can solve an addition word problem involving a decimal to tenths and a fraction in halves or tenths.
	Students can solve a subtraction word problem involving a decimal to tenths and a fraction in halves or tenths.
	Students can solve an addition word problem involving a decimal to hundredths and a fraction in fourths or fifths.
	Students can solve a subtraction word problem involving a decimal to hundredths and a fraction in fourths or fifths.

Standard 7.NS.7: Compute fluently with rational numbers using an algorithmic approach.

Content Connector: Compute with rational numbers.

Learning Progressions	Students can add decimals to hundredths.
	Students can subtract decimals to hundredths.
	Students can add fractions with common denominators (halves, thirds, fourths, and tenths) with sums less than or equal to one.
	Students can subtract fractions with common denominators (halves, thirds, fourths, and tenths) with sums less than or equal to one.
	Students can add fractions with common denominators (halves, thirds, fourths, and tenths) with sums greater than one.
	Students can subtract fractions with common denominators (halves, thirds, fourths, and tenths) with sums greater than one.
	Students can add fractions without common denominators (halves, thirds, fourths, and tenths) with sums less than or equal to one.
	Students can subtract fractions without common denominators (halves, thirds, fourths, and tenths) with sums less than or equal to one.
	Students can add rational numbers involving a decimal to hundredths and a fraction.
	Students can subtract rational numbers involving a decimal to hundredths and a fraction.
	Students can identify a number as a decimal, percent, or fraction.
	Students can identify a decimal or percent equivalent to a given unit fraction (halves or tenths).
	Students can multiply unit fractions with common denominators (halves, thirds, fourths, and tenths).
	Students can multiply unit fractions without common denominators (halves, thirds, fourths, and tenths).
	Students can multiply fractions with common denominators (halves, thirds, fourths, and tenths).
	Students can multiply fractions without common denominators (halves, thirds, fourths, and tenths).

Standard 8.NS.4: Solve real-world problems with rational numbers by using multiple operations.

Content Connector: Solve real-world problems with rational numbers by using two operations.

Learning Progressions	Students can solve a two-step addition problem involving decimals to tenths.
	Students can solve a two-step subtraction problem involving decimals to tenths.
	Students can solve a two-step addition problem involving fractions with common denominators (halves, thirds, fourths, and tenths) with sums less than or equal to one.
	Students can solve a two-step subtraction problem involving fractions with common denominators (halves, thirds, fourths, and tenths) with sums less than or equal to one.
	Students can solve a two-step addition problem involving fractions with common denominators (halves, thirds, fourths, and tenths) with sums greater than one.
	Students can solve a two-step subtraction problem involving fractions with common denominators (halves, thirds, fourths, and tenths) with sums greater than one.
	Students can solve a two-step addition problem involving decimals to hundredths.
	Students can solve a two-step subtraction problem involving decimals to hundredths.
	Students can solve a two-step addition problem involving fractions without common denominators (halves, thirds, fourths, and tenths) with sums less than or equal to one.
	Students can solve a two-step subtraction problem involving fractions without common denominators (halves, thirds, fourths, and tenths) with sums less than or equal to one.
	Students can solve a two-step addition problem involving decimals to hundredths and fractions.
	Students can solve a two-step subtraction problem involving decimals to hundredths and fractions.
	Students can solve a two-step multiplication problem involving unit fractions with common denominators (halves, thirds, fourths, and tenths).
	Students can solve a two-step multiplication problem involving unit fractions without common denominators (halves, thirds, fourths, and tenths).
	Students can solve a two-step multiplication problem involving fractions with common denominators (halves, thirds, fourths, and tenths).
	Students can solve a two-step multiplication problem involving fractions without common denominators (halves, thirds, fourths, and tenths).

Appendix C: Model Operational Forms

Indiana Alternate Measure (I AM) Research Project

Model Operational Form

Grade 3, English/Language Arts, Support Level 1

DIRECTIONS

You will be asked some questions by your teacher. Do your best to answer all of the questions.

SECTION 1

You will be read a passage. Then you will be asked some questions by your teacher. Do your best to answer all of the questions about the passage.

The Empty Pot – An Old Chinese Story



A long time ago, there was a king in China. He decided to have a contest to choose his new gardener.

Many children wanted to win the contest. It was a great honor to be the king's gardener.

The king gave each child an empty flowerpot and one seed. He said, "Whoever grows the best flower will be my new gardener."



Ling was excited. She planted her seed in good dirt and watered it.



After one week, Ling's seed did not grow. She added more dirt. She watered it carefully. Another week went by. Still, her seed did not grow. Ling tried everything she knew about gardening, but her seed did not grow.



After one month, the king called the children. They all had pots with beautiful flowers. Ling was very sad. Her pot was just full of dirt. She was the only child without a flower.



Ling came before the king and hung her head. "My pot is empty," she said.

The king smiled. "You have won the contest!" he said.

Ling was very surprised. "Why?" she asked.



The king explained. "All the seeds had been cooked, so they could not have grown. The other children cheated and used different seeds. You are the only honest child! That is why you will be my new gardener!"

Question 1

"The Empty Pot" is an old story from China. It has been retold over many years.

Which word correctly completes the sentence?

"The Empty Pot" is a _____ .

A. folktale



B. report



Question 2

Reread the sentence from the passage.



A long time ago, there was a king in China.



He decided to have a contest to choose his



new gardener.

Which phrase explains how the king decided to choose his new gardener?

A.



in China

B.



a contest

C.

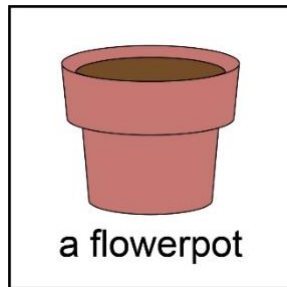


new gardener

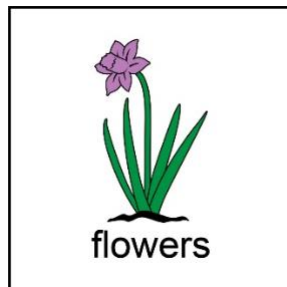
Question 3

Which item did the king give each child at the beginning of the contest?

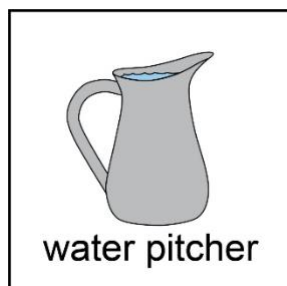
A.



B.



C.



Question 4

Which sentence describes what happens with Ling and the contest?

- A. Ling cannot be in the contest.
- B. Ling quits the contest.
- C. Ling wins the contest.

Question 5

Look at the boxes. Each box shows something that happened when Ling tried to grow a flower from a seed. Listen to part of the story again.

Which step is the last step in the sequence?



A. Ling watered the seed.



B. Ling planted the seed in dirt.



C. Ling's seed did not grow.

Question 6

What is the main message of the story?

- A. plant flowers
- B. tell the truth
- C. be kind to others

Question 7

There is a saying that means telling the truth is always better than lying. In the story, Ling proves that telling the truth is best because she wins the contest.

Describe a time when you told the truth.

SECTION 2**Question 8**

cup

Which word has the same middle sound as the word “cup”?

A.



bug

B.



map

Question 9

Which word has the vowel sound at the end of the word?



The bird will fly to the nest.

A.



bird

B.



fly

C.



nest

Question 10

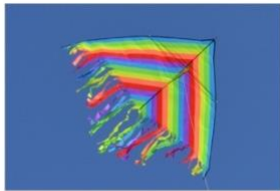
cake



bone

Which of these words has a long vowel sound?

A.



kite

B.



ring

C.



ship

Question 11



Which word has the same vowel sound as leaf?

A.



hand

B.



paint

C.



sheep

Question 12

Which word has the same vowel sound as apple?



A.



bottle

B.



castle

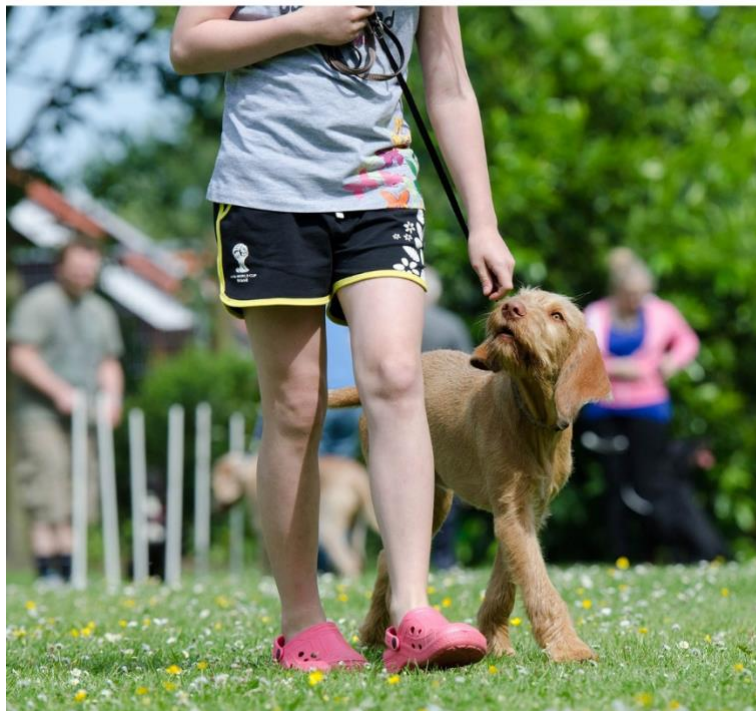
C.



puzzle

SECTION 3

You will be read a passage. Then you will be asked some questions by your teacher. Do your best to answer all of the questions about the passage.

Working Dogs

Many people have dogs as pets, but some



people also have dogs that do important jobs.

Guide Dogs



Working dogs can help people do many things.



Some help people who have difficulty seeing.



These dogs are called guide dogs.



Guide dogs help people travel safely, like on



a city street.

Therapy Dogs



Therapy dogs also help people. Therapy dogs



go with their owners to visit people.



The therapy dog might visit someone who is



lonely or sick. Therapy dogs can help people



feel happy and cared for.

Training



It takes a long time to become a working dog.



Training often starts when the dog is a puppy.



Then, dogs train for months. They have to learn



the skills they need. Finally, adult dogs are ready

to go to work.

Question 13

Read this section of the passage.



People have dogs **as pets**. People also have dogs



that do **important jobs**.

Which word or phrase explains what working dogs do?

A.



as pets

B.



important jobs

Question 14

According to the passage, which is one place guide dogs help people?

A.



in a car

B.



at a pool

C.



on a street

Question 15

Look at the boxes. Each box shows a step in training working dogs. Listen to that part of the passage again.

Which step is the last step in the sequence?



- A. Then, dogs train for months.



- B. Finally, adult dogs are ready to go to work.



- C. Training often starts when the dog is a puppy.

Question 16



Dogs train for months.

What do they have to learn?

- A. to be a pet
- B. to be strong
- C. the skills they need

Question 17

Choose the sentence that best explains how people feel after a visit from a therapy dog?



A. Therapy dogs go with their owners to visit people.



B. Therapy dogs visit people who are lonely or sick.



C. Therapy dogs can help people feel happy and cared for.

SECTION 4**Question 18**

Which word in the sentence should begin with a capital letter?



The family had dinner with Mr. smith.

- A. dinner
- B. smith

Question 19

The words "do" and "not" can be combined to make the contraction "don't".

do not

don't

What is the correct way to combine the words "can" and "not" to make the contraction?

can not

A. c'ant

B. can't

C. cant'

Question 20

Which sentence uses quotation marks correctly?

- A. "Jay said," Let's take a photo, Thomas.
- B. Jay said, Let's take a photo, "Thomas."
- C. Jay said, "Let's take a photo, Thomas."

Question 21

Below is a sentence that is missing a comma.



Sara uses scissors pencils, and



crayons at school.

Which sentence uses the comma correctly?

- A. Sara, uses scissors pencils, and crayons at school.
- B. Sara uses scissors, pencils, and crayons at school.
- C. Sara uses scissors pencils, and crayons, at school.

Question 22

Which sentence shows correct spelling for the word in the box?

- A. The gam is so exciting.
- B. The gaem is so exciting.
- C. The game is so exciting.

SECTION 5

You will be read a passage. Then you will be asked some questions by your teacher. Do your best to answer all of the questions about the passage.

Animal Habitats



Animals live in special homes called habitats

to stay safe and happy. Imagine you're a

small animal in a big world! Different habitats



around the Earth give you what you need

to survive.



Forests



In forests, animals like deer and rabbits eat plants.



Tall trees protect them from rain and sun.



Squirrels build nests in trees to stay safe.



Oceans



In oceans, animals like dolphins and



whales swim and play. They eat fish and shrimp.



Tiny sea animals live and hide in coral reefs.



Deserts



In the dry deserts, animals survive the heat.



Kangaroo rats get water from seeds, and



snakes go under the sand to stay cool.

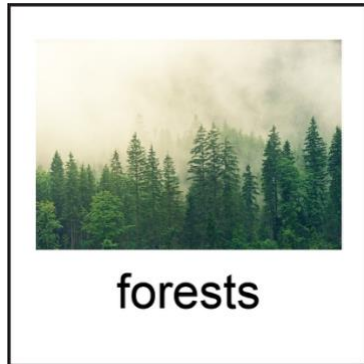
Wherever animals live, habitats help them live

and be safe!

Question 23

Which habitat is from the passage?

A.



B.



Question 24

Which phrase tells the reader important information about how animals use their habitats to survive?



Tiny sea animals live and hide in coral reefs.

- A. Tiny sea
- B. animals live
- C. hide in coral reefs

Question 25

What is the passage mostly about?

A.



snakes

B.



habitats

C.



forests

Question 26

In the artic, some animals build dens in the snow.

Which animal most likely lives in the artic?

A.



elephants

B.



foxes





C.



prairie dogs

Question 27

The chart shows information about more habitats.

Habitat	Animal	Survival Skill
 grassland	 prairie dogs	use dirt to build homes
 forest	 squirrel	?

Which survival skill do squirrels use to stay safe?

- A. build nests in trees
- B. eat fish and shrimp
- C. go under the sand

END OF FORM

Indiana Alternate Measure (I AM) Research Project

Model Operational Form

Grade 6, Mathematics, Support Level 2


DIRECTIONS

You will be asked some questions by your teacher. Do your best to answer all of the questions.

SECTION 1**Question 1**

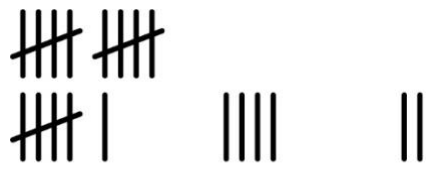
Which picture represents an expression equal to 8?


A. 
6 × 2 – 4


B. 
4 × 2 – 3

Question 2

Which picture represents an expression equal to 4?

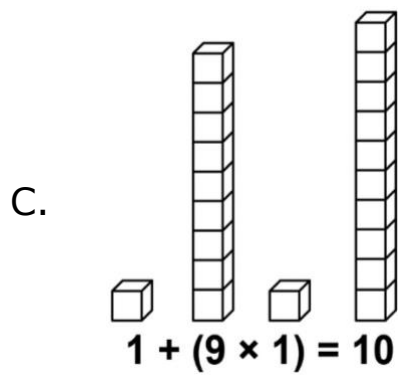
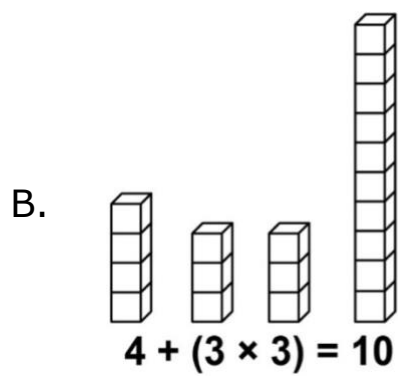
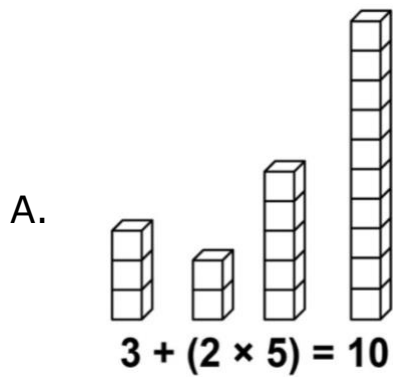
A. 
16 ÷ 4 + 2

B. 
3 ÷ 3 + 3

C. 
8 ÷ 1 - 5

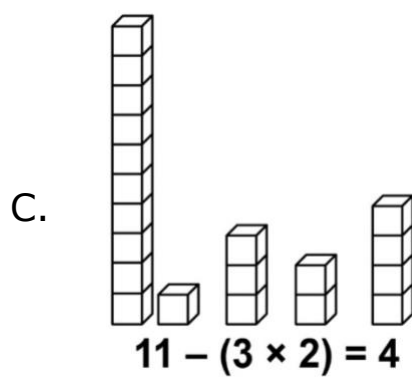
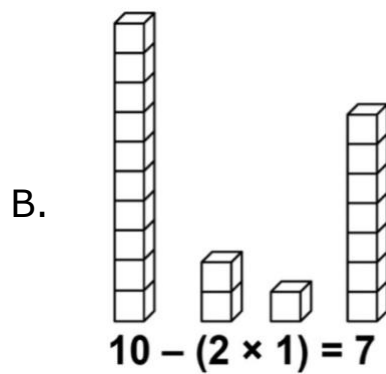
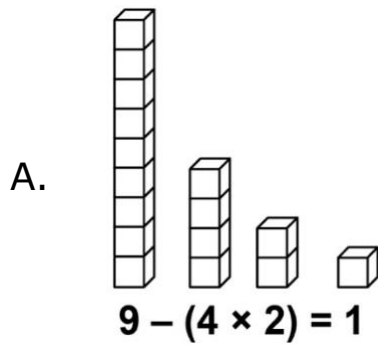
Question 3

Which picture represents an equation that is true?



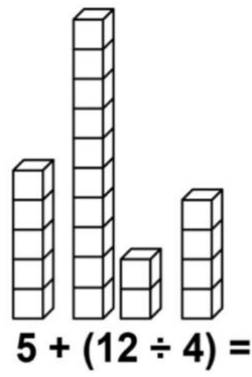
Question 4

Which picture represents an equation that is true?



Question 5

What is the value of the equation represented in the picture?



- A. 4
- B. 6
- C. 8

Question 6

What is the value of the equation?

$$12 - (25 \div 5) =$$

A. 5

B. 7

C. 9

Question 7

What symbol makes the equation true?

$$4 + 6 \square 3 = 6$$

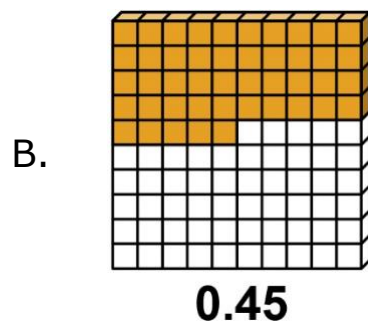
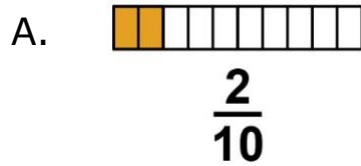
A. +

B. ×

C. ÷

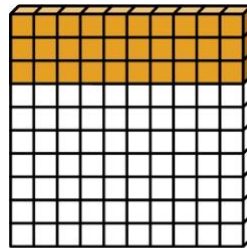
SECTION 2**Question 8**

Which picture represents a decimal?



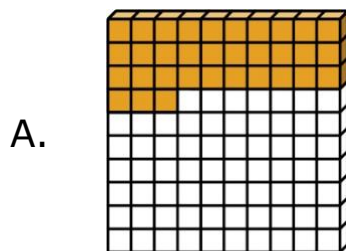
Question 9

This picture represents 30%.

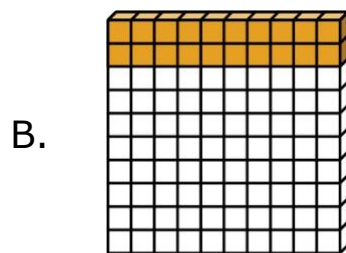


30%

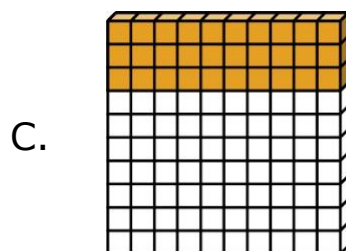
Which decimal is equal to 30%?



0.33



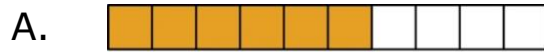
0.25



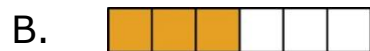
0.30

Question 10

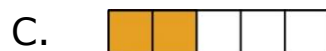
Which decimal is equal to $\frac{1}{2}$?



0.60



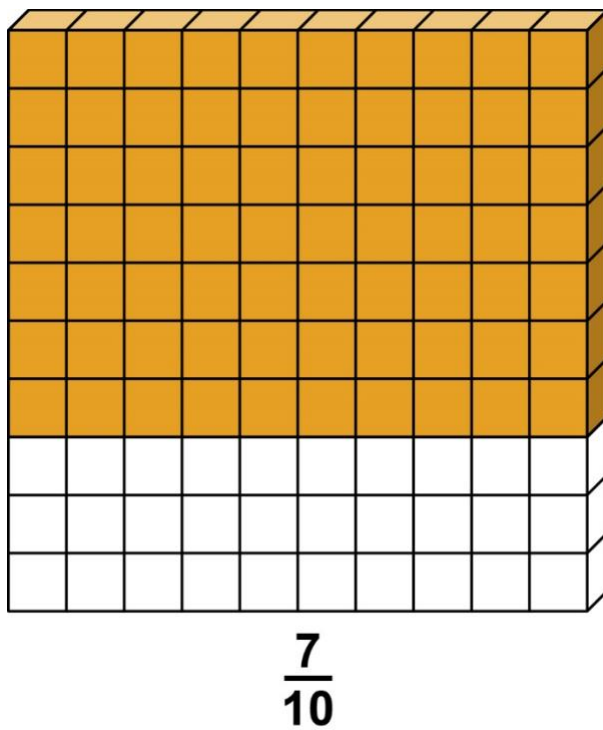
0.50



0.40

Question 11

This picture represents seven-tenths and is labeled $\frac{7}{10}$.

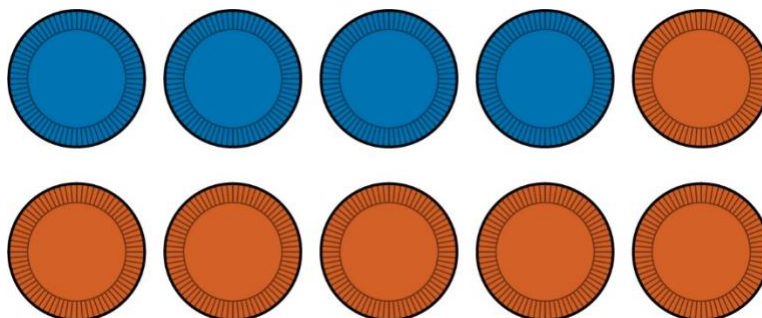


Which percent is equal to $\frac{7}{10}$?

- A. 7%
- B. 70%
- C. 77%

Question 12

This is a picture of ten counters. The blue counters are 40% of the total.



Which fraction has the same value as 40%?

A. $\frac{4}{10}$

B. $\frac{4}{40}$

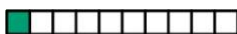
C. $\frac{4}{100}$

SECTION 3**Question 13**

This is a fraction bar that represents one whole divided into ten equal parts.



This is a fraction bar divided into ten equal parts with one part shaded. The one shaded part is equal to one-tenth.



0.1

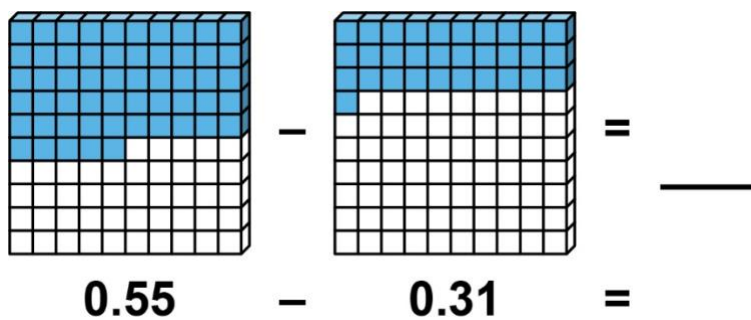
Which decimal pair adds up to 0.5?

A.  +  = **0.5**
0.5 + **0.4** = **0.5**

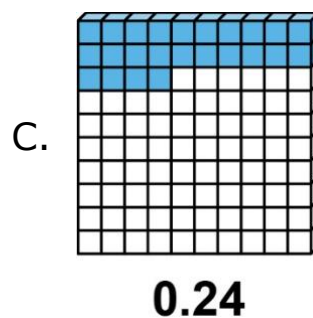
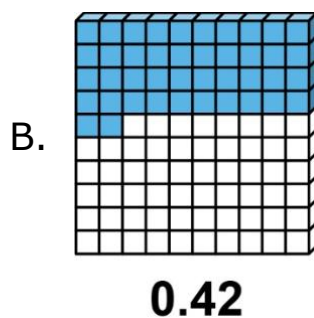
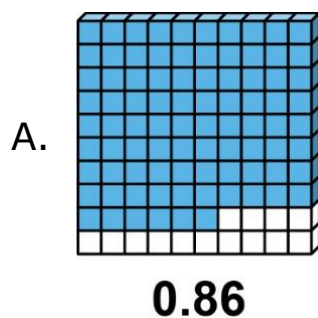
B.  +  = **0.5**
0.3 + **0.2** = **0.5**

Question 14

This picture represents the equation $0.55 - 0.31 = \underline{\hspace{1cm}}$.



What is $0.55 - 0.31$?

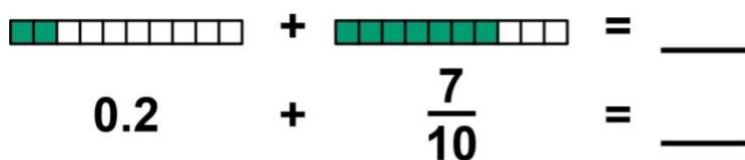


Question 15


This is a fraction bar that represents one whole divided into ten equal parts.





This is an expression that represents $0.2 + \frac{7}{10} = \underline{\hspace{2cm}}$.



Which fraction bar is the same as the sum of the given expression?



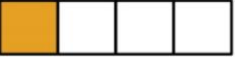
A.  $\frac{5}{10}$




B.  $\frac{8}{10}$




C.  $\frac{9}{10}$

Question 16

Which number sentence is true?

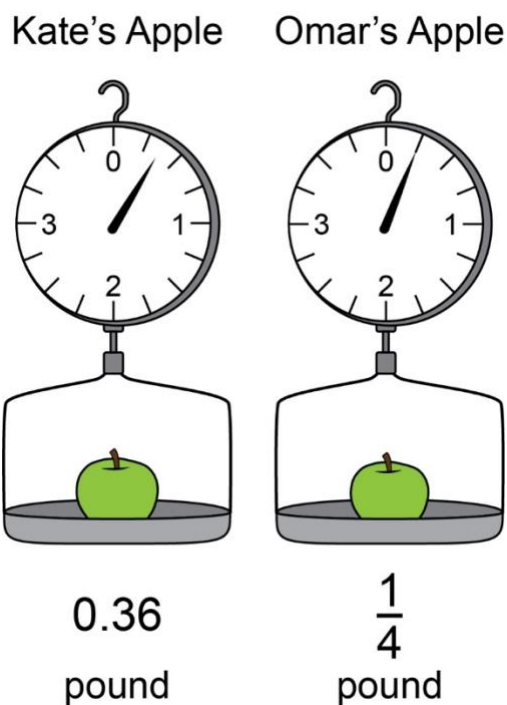
A.  -  = 
 $\frac{3}{4} - \frac{2}{4} = \frac{1}{4}$

B.  -  = 
 $\frac{8}{10} - \frac{3}{10} = \frac{4}{10}$

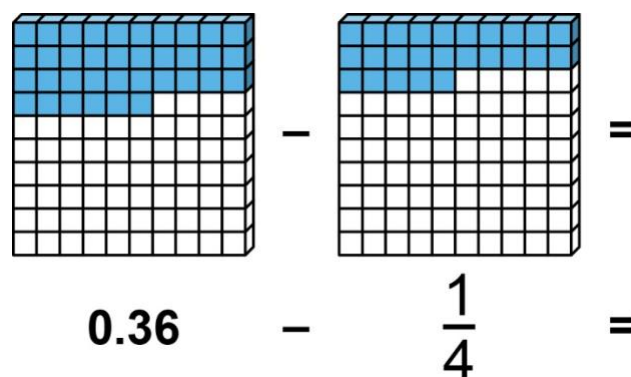
C.  -  = 
 $\frac{5}{8} - \frac{3}{8} = \frac{4}{8}$

Question 17

Kate has an apple that weighs 0.36 pound. Omar has an apple that weighs $\frac{1}{4}$ pound.



The difference between these two weights can be found using the given equation.



What is the difference between the two weights?

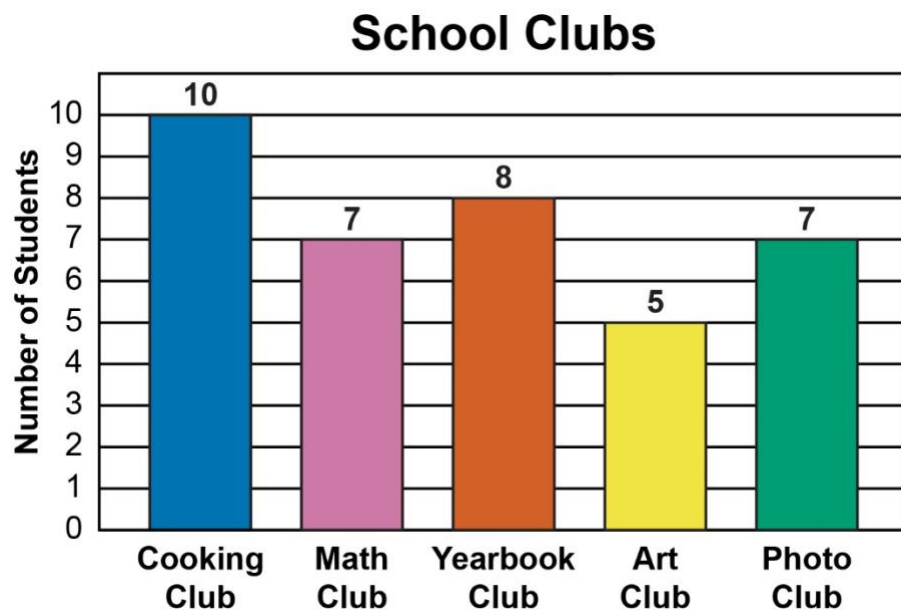
A. 0.11

B. 0.22

C. 0.61

SECTION 4**Question 18**

This is a bar graph that represents the number of students in different clubs at a school.



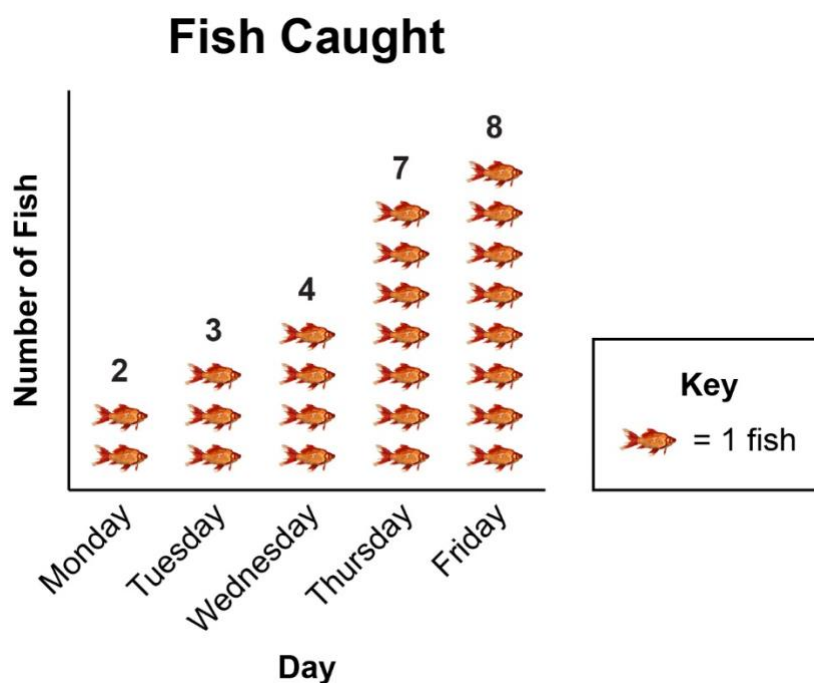
What number of students is the most common?

A. 10

B. 7

Question 19

Andrea went fishing each morning for five days. This data set represents the number of fish caught by Andrea each day.








What is the difference between the greatest number of fish caught and the least number of fish caught?

- A. 2
- B. 6
- C. 8

Question 20

This is a data table that represents how many markers each student has on their desk.

Markers

Student Name	Number of Markers	
Anne		2
Bret		2
Collin		4
Drake		8
Emily		9

What is the mean number of markers this group of students has?

Question 21

Find the mode for the data set.

3, 4, 4, 6, 9

What is the mode?

A. 4

B. 6

C. 9

Question 22

Find the range for the data set.

4, 7, 8, 8, 10

What is the range?

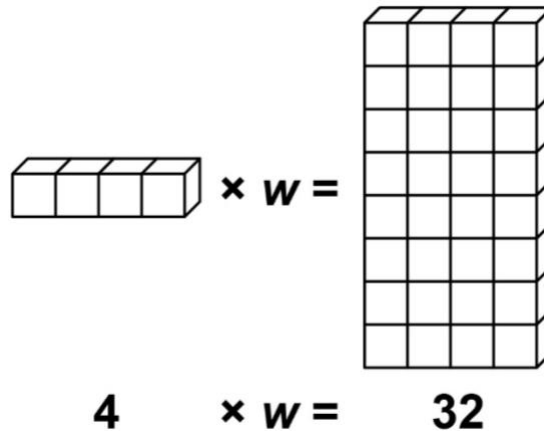
A. 5

B. 6

C. 8

SECTION 5**Question 23**

Which value of the variable w makes the equation true?


$$4 \times w = 32$$

A. 5



B. 8

Question 24



Which inequality is true when $w = 1$?





$$w = 1$$

A.  $- w >$ 

$$9 - w > 7$$

B.  $- w <$ 

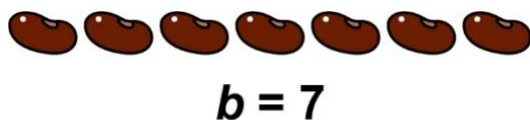
$$8 - w < 3$$

C.  $+ w >$ 

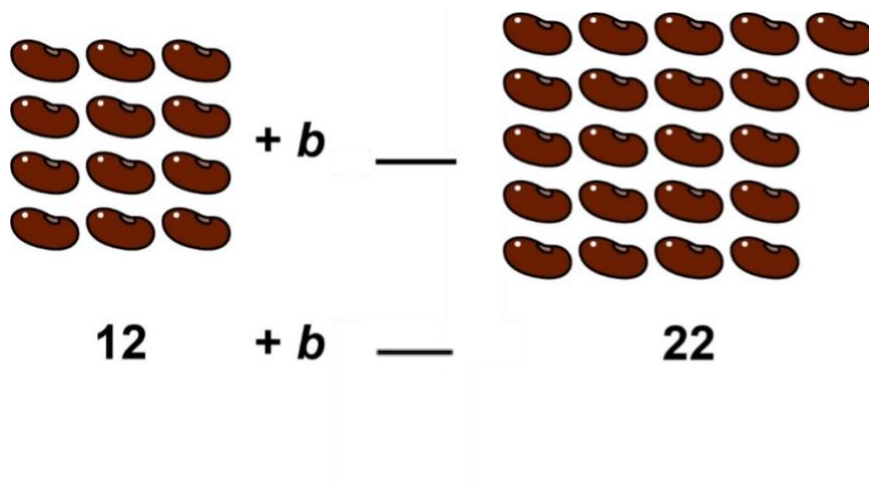
$$3 + w > 8$$

Question 25

The picture shows 7 beans. The value for b in the equation shown is 7.



Which symbol goes in the blank to make the equation true?



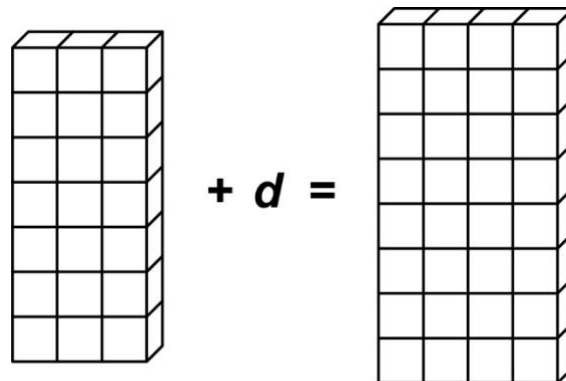
A. $>$

B. $<$

C. $=$

Question 26


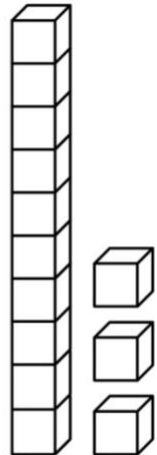
This is an equation with the variable d .


$$21 + d = 32$$

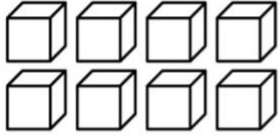

What number for d makes the equation true?

Question 27



Which inequality is true when $m = 1$?

A.  $\times m >$ 

$$4 \times m > 13$$

B.  $\div m <$ 

$$8 \div m < 5$$

C.  $\times m <$ 

$$2 \times m < 3$$

END OF TEST FORM