Indiana Department of Education

Dr. Katie Jenner, *Secretary of Education*

Indiana Academic Standards 2020
Kindergarten Math
Standards Correlation Guidance Document

Intentional alignment of instructional practices and curricular materials to the Indiana Academics Standards (IAS) is vital to improving student outcomes. This guide is meant to encourage strong standards-based instruction when utilizing curricular materials not aligned to IAS but to Common Core State Standards (CCSS). Purchased curricula are not designed to perfectly align with IAS and often align with CCSS. Use of this guide will ensure strong alignment to IAS and foster critical conversations around instructional decisions.

Considerations for use:

- Identify the desired IAS;
- Unpack the IAS, referencing the IDOE Math Framework;
- Determine the correlating CCSS;
- Consider the differences between IAS and learning objective from CCSS aligned curricular material;
- Identify instructional gaps (in content or complexity) and consider strategies to supplement; and
- Prioritize content in curricular material that is identified in the IAS.

IDOE's Math Framework provides student success criteria, vertical planning, digital resources, and clarifying examples to consider when planning, implementing, and teaching IAS.

Indiana Academic Standards (IAS) 2020	Common Core State Standards (CCSS)	Difference Between CCSS and IAS 2020
Process Standards for Mathematics		
PS.1: Make sense of problems and persevere in solving them. Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway, rather than simply jumping into a solution attempt. They consider analogous problems and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" and "Is my answer reasonable?" They understand the approaches of others to solving complex problems and identify correspondences between different approaches. Mathematically proficient students understand how mathematical ideas interconnect and build on one another to produce a coherent whole.	**MP1: Make sense of problems and persevere in solving them.** Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to	IAS removes criteria involving a graphing calculator and does not distinguish between younger and older students.

	problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.	
PS.2: Reason abstractly and quantitatively. Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.	**MP.2: Reason abstractly and quantitatively.** Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.	*No content differences identified.*
PS.3: Construct viable arguments and critique the reasoning of others.	**MP.3: Construct viable arguments and critique the reasoning of others.**	IAS includes the justification of statements that are true always, sometimes, or never. IAS includes collaboration in a mathematics

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They analyze situations by breaking them into cases and recognize and use counterexamples. They organize their mathematical thinking, justify their conclusions and communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. They justify whether a given statement is true always, sometimes, or never. Mathematically proficient students participate and collaborate in a mathematics community. They listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.	Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.	community and does not distinguish between younger and older students.

PS.4: Model with mathematics.	MP.4: Model with mathematics.	IAS does not distinguish between younger and older students.
Mathematically proficient students apply the mathematics they know to solve problems arising in everyday life, society, and the workplace using a variety of appropriate strategies. They create and use a variety of representations to solve problems and to organize and communicate mathematical ideas. Mathematically proficient students apply what they know and are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.	Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.	
PS.5: Use appropriate tools strategically. Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might	**MP.5: Use appropriate tools strategically.** Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might	IAS does not distinguish between younger and older students.

include pencil and paper, models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Mathematically proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. Mathematically proficient students identify relevant external mathematical resources, such as digital content, and use them to pose or solve problems. They use technological tools to explore and deepen their understanding of concepts and to support the development of learning mathematics. They use technology to contribute to concept development, simulation, representation, reasoning, communication and problem solving.	include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.	
PS.6: Attend to precision. Mathematically proficient students communicate precisely to others. They use clear definitions, including precision. correct mathematical language, in discussion with	**MP.6: Attend to precision.** Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They	IAS does not distinguish between younger and older students.

others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They express solutions clearly and logically by using the appropriate mathematical terms and notation. They specify units of measure and label axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently and check the validity of their results in the context of the problem. They express numerical answers with a degree of precision appropriate for the problem context.	state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.	
PS.7: Look for and make use of structure. Mathematically proficient students look closely to discern a pattern or structure. They step back for an overview and shift perspective. They recognize and use properties of operations and equality. They organize and classify geometric shapes based on their attributes. They see expressions, equations, and geometric figures as single objects or as being composed of several objects.	**MP.7: Look for and make use of structure.** Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can	IAS has removed examples and does not distinguish between younger and older students.

	step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.	
PS.8: Look for and express regularity in repeated reasoning. Mathematically proficient students notice if calculations are repeated and look for general methods and shortcuts. They notice regularity in mathematical problems and their work to create a rule or formula.Mathematically proficient students maintain oversight of the process, while attending to the details as they solve a problem. They continually evaluate the reasonableness of their intermediate results.	**MP.8: Look for and express regularity in repeated reasoning.** Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.	IAS has removed examples and does not distinguish between younger and older students.

Indiana Academic Standards (IAS) 2020	Common Core State Standards (CCSS)	Difference Between CCSS and IAS 2020
Number Sense		
K.NS.1: Count to at least 100 by ones and tens and count on by one from any number.	**K.CC.1:** Count to 100 by ones and by tens. **K.CC.2:** Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	IAS is not capped at 100.
K.NS.2: Write whole numbers from zero to 20 and recognize number words from zero to 10. Represent a number of objects with a written numeral zero to 20 (with zero representing a count of no objects).	**K.CC.3:** Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	IAS requires students to recognize number words from 0-10.
K.NS.3: Find the number that is one more than or one less than any whole number up to 20.	*No CCSS equivalent.*	
K.NS.4: Say the number names in standard order when counting objects, pairing each object with one and only one number name and each number name with one and only one object. Understand that the last number describes the number of objects counted and that the number of objects is the same regardless of their arrangement or the order in which they were counted.	**K.CC.4a:** When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. **K.CC.4b:** Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	*No content differences identified.*

K.NS.5: Count up to 20 objects arranged in a line, a rectangular array, or a circle. Count up to 10 objects in a scattered configuration. Count out the number of objects, given a number from one to 20.	**K.CC.5:** Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.	*No content differences identified.*
K.NS.6: Recognize sets of one to 10 objects in patterned arrangements and tell how many without counting.	*No CCSS equivalent.*	
K.NS.7: Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (e.g. by using matching and counting strategies).	**K.CC.6:** Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	*No content differences identified.*
K.NS.8: Compare the values of two numbers from 1 to 20 presented as written numerals.	**K.CC.7:** Compare two numbers between 1 and 10 presented as written numerals.	IAS requires students to compare numbers from 1 to 20 instead of 1 to 10.
K.NS.9: Correctly use the words for comparison, including: one and many; none, some and all; more and less; most and least; and equal to, more than and less than.	*No CCSS equivalent.*	
K.NS.10: Separate sets of 10 or fewer objects into equal groups.	*No CCSS equivalent.*	

| K.NS.11: Develop initial understandings of place value and the base 10 number system by showing equivalent forms of whole numbers from 10 to 20 as groups of tens and ones using objects and drawings. | K.NBT.1: Compose and decompose numbers from 11 to 19 into ten ones and some further ones. e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. | IAS requires students to show equivalent forms of whole numbers from 10 to 20 instead of 11 to 19. |

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Computation and Algebraic Thinking		
K.CA.1: Use objects, drawings, mental images, sounds, etc., to represent addition and subtraction within 10.	**K.OA.1:** Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expression, or equations.	IAS specifies that students perform addition and subtraction with 10.
K.CA.2: Solve real-world problems that involve addition and subtraction within 10 (e.g., by using objects or drawings to represent the problem).	**K.OA.2:** Solve addition and subtraction word problems, and add and subtract within 10. **K.OA.5:** Fluently add and subtract within 5.	*No content differences identified.*
K.CA.3: Use objects, drawings, etc., to decompose numbers less than or equal to 10 into pairs in more than one way, and record each decomposition with a drawing or an equation (e.g., 5 = 2 + 3 and 5 = 4 + 1). [In Kindergarten, students should see equations and be encouraged to trace them, however, writing equations is not required.]	**K.OA.3:** Decompose numbers less than or equal to 10 into pairs in more than one way (e.g., by using objects or drawings), and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).	IAS requires students to use objects, drawings, etc. and encourages students to see and trace equations, but does not require students to write equations.
K.CA.4: Find the number that makes 10 when added to the given number for any number from one to nine (e.g., by using objects or drawings), and record the answer with a drawing or an equation.	**K.OA.4:** For any number from 1 to 9, find the number that makes 10 when added to the given number (e.g., by using objects or drawings), and record the answer with a drawing or equation.	*No content differences identified.*

K.CA.5: Create, extend, and give an appropriate rule for simple repeating and growing patterns with numbers and shapes.	*No CCSS equivalent.*	

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Geometry		
K.G.1: Describe the positions of objects and geometric shapes in space using the terms inside, outside, between, above, below, near, far, under, over, up, down, behind, in front of, next to, to the left of and to the right of.	**K.G.1:** Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.	IAS requires students to also use the terms near, far, under, over, up, down, to the left of and to the right of.
K.G.2: Compare two- and three-dimensional shapes in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	**K.G.3:** Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). **K.G.4:** Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/ "corners") and other attributes (e.g., having sides of equal length).	IAS does not require students to identify shapes as "flat" and "solid".
K.G.3: Model shapes in the world by composing shapes from objects (e.g., sticks and clay balls) and drawing shapes.	**K.G.5:** Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	*No content differences identified.*
K.G.4: Compose simple geometric shapes to form larger shapes (e.g., create a rectangle composed of two triangles).	**K.G.6:** Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"	*No content differences identified.*

Indiana Academic Standards (IAS) 2020	Common Core State Standards (CCSS)	Difference Between CCSS and IAS 2020
Measurement		
K.M.1: Make direct comparisons of the length, capacity, weight, and temperature of objects, and recognize which object is shorter, longer, taller, lighter, heavier, warmer, cooler, or holds more.	**K.MD.1:** Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. **K.MD.2:** Directly compare two objects with a measurable attribute in common, to see which object has "more of" or "less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.	IAS does not require students to see which object has "more of" or "less of" the attribute or describe the difference.
K.M.2: Understand concepts of time, including: morning, afternoon, evening, today, yesterday, tomorrow, day, week, month, and year. Understand that clocks and calendars are tools that measure time.	*No CCSS equivalent.*	

Indiana Academic Standards (IAS) 2020	Common Core State Standards (CCSS)	Difference Between CCSS and IAS 2020
Data Analysis		
K.DA.1: Identify, sort, and classify objects by size, number, and other attributes. Identify objects that do not belong to a particular group and explain the reasoning used.	**K.MD.3:** Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	IAS requires students to explain their reasoning used when identifying objects that do not belong to a particular group.

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