



# Indiana Department of Education

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Dr. Katie Jenner, Secretary of Education

## **Indiana Academic Standards 2020 Grade 6 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 IAS 2020 and CCSS
<b>Process Standards for Mathematics</b>		
<p><b>PS.1: Make sense of problems and persevere in solving them.</b></p> <p>Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway, rather than simply jumping into a solution attempt. They consider analogous problems and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" and "Is my answer reasonable?" They understand the approaches of others to solving complex problems and identify correspondences between different approaches. Mathematically proficient students understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p>	<p><b>MP1: Make sense of problems and persevere in solving them.</b></p> <p>Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. 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 problems using a different</p>	<p>IAS removes criteria involving a graphing calculator and does not distinguish between younger and older students.</p>

	<p>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.</p>	
<p><b>PS.2: Reason abstractly and quantitatively.</b></p> <p>Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.</p>	<p><b>MP.2: Reason abstractly and quantitatively.</b></p> <p>Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.</p>	<p><i>No content differences identified.</i></p>

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

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

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

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They 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,

IAS includes the justification of statements that are true always, sometimes, or never. IAS includes collaboration in a mathematics community and does not distinguish between younger and older students.

	and ask useful questions to clarify or improve the arguments.	
<p><b>PS.4: Model with mathematics.</b></p> <p>Mathematically proficient students apply the mathematics they know to solve problems arising in everyday life, society, and the workplace using a variety of appropriate strategies. They create and use a variety of representations to solve problems and to organize and communicate mathematical ideas. Mathematically proficient students apply what they know and are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.</p>	<p><b>MP.4: Model with mathematics.</b></p> <p>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.</p>	<p>IAS does not distinguish between younger and older students.</p>

**PS.5: Use appropriate tools strategically.**

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

**MP.5: Use appropriate tools strategically.**

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might 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.

IAS does not distinguish between younger and older students.

<p><b>PS.6: Attend to precision.</b></p> <p>Mathematically proficient students communicate precisely to others. They use clear definitions, including precision. correct mathematical language, in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They express solutions clearly and logically by using the appropriate mathematical terms and notation. They specify units of measure and label axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently and check the validity of their results in the context of the problem. They express numerical answers with a degree of precision appropriate for the problem context.</p>	<p><b>MP.6: Attend to precision.</b></p> <p>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 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.</p>	<p>IAS does not distinguish between younger and older students.</p>
<p><b>PS.7: Look for and make use of structure.</b></p> <p>Mathematically proficient students look closely to discern a pattern or structure. They step back for an overview and shift perspective. They recognize and use properties of operations and equality. They organize and classify geometric shapes based on their attributes. They see expressions, equations, and geometric figures as single objects or as being composed of several objects.</p>	<p><b>MP.7: Look for and make use of structure.</b></p> <p>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 <math>7 \times 8</math> equals the well remembered <math>7 \times 5 + 7 \times 3</math>, in preparation for learning about the distributive property. In the expression <math>x^2 + 9x + 14</math>, older students can see the 14 as <math>2 \times 7</math> and the 9 as <math>2 + 7</math>. They recognize the significance of an</p>	<p>IAS has removed examples and does not distinguish between younger and older students.</p>

	<p>existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can 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 <math>5 - 3(x - y)^2</math> 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 <math>x</math> and <math>y</math>.</p>	
<p><b>PS.8: Look for and express regularity in repeated reasoning.</b></p> <p>Mathematically proficient students notice if calculations are repeated and look for general methods and shortcuts. They notice regularity in mathematical problems and their work to create a rule or formula. Mathematically proficient students maintain oversight of the process, while attending to the details as they solve a problem. They continually evaluate the reasonableness of their intermediate results.</p>	<p><b>MP.8: Look for and express regularity in repeated reasoning.</b></p> <p>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 <math>(y - 2)/(x - 1) = 3</math>. Noticing the regularity in the way terms cancel when expanding <math>(x - 1)(x + 1)</math>, <math>(x - 1)(x^2 + x + 1)</math>, and <math>(x - 1)(x^3 + x^2 + x + 1)</math> 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</p>	<p>IAS has removed examples and does not distinguish between younger and older students.</p>



	evaluate the reasonableness of their intermediate results.	
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Indiana Academic Standards (IAS) 2020	Common Core State Standards (CCSS)	Difference Between IAS 2020 and CCSS
<b>Number Sense</b>		
<p><b>6.NS.1:</b> Understand that positive and negative numbers are used to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge). Use positive and negative numbers to represent and compare quantities in real-world contexts, explaining the meaning of 0 in each situation.</p>	<p><b>6.NS.C.5:</b> Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.</p>	<p>IAS requires students to also compare positive and negative quantities in real-world contexts.</p>
<p><b>6.NS.2:</b> Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself (e.g., <math>-(-3) = 3</math>), and that 0 is its own opposite.</p>	<p><b>6.NS.C.6.a:</b> Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., <math>-(-3) = 3</math>, and that 0 is its own opposite.</p>	<p><i>No content differences identified.</i></p>
<p><b>6.NS.3:</b> Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts.</p>	<p><b>6.NS.C.6.c:</b> Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.</p> <p><b>6.NS.C.7:</b> Understand ordering and absolute value of rational numbers.</p> <p><b>6.NS.C.7.a:</b> Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.</p>	<p>IAS does not specify between vertical and horizontal number lines and has removed criteria from CCSS for plotting on a coordinate plane and interpreting inequalities.</p>

	<b>6.NS.C.7.b:</b> Write, interpret, and explain statements of order for rational numbers in real-world contexts.	
<b>6.NS.4:</b> Understand that the absolute value of a number is the distance from zero on a number line. Find the absolute value of real numbers and know that the distance between two numbers on the number line is the absolute value of their difference. Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.	<p><b>6.NS.C.7:</b> Understand ordering and absolute value of rational numbers.</p> <p><b>6.NS.C.7.c:</b> Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.</p> <p><b>6.NS.C.7.d:</b> Distinguish comparisons of absolute value from statements about order.</p>	IAS brings up the concept of magnitude and application in real world contexts.
<b>6.NS.5:</b> Know commonly used fractions (halves, thirds, fourths, fifths, eighths, tenths) and their decimal and percent equivalents. Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator.	<i>No CCSS equivalent.</i>	
<b>6.NS.6:</b> Identify and explain prime and composite numbers.	<i>No CCSS equivalent.</i>	
<b>6.NS.7:</b> Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers from 1 to 100, with a common factor as a multiple of a sum	<b>6.NS.B.4:</b> Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a	<i>No content differences identified.</i>

of two whole numbers with no common factor.	common factor as a multiple of a sum of two whole numbers with no common factor.	
<b>6.NS.8:</b> Interpret, model, and use ratios to show the relative sizes of two quantities. Describe how a ratio shows the relationship between two quantities. Use the following notations: $a/b$ , $a$ to $b$ , $a:b$ .	<b>6.RP.A.1:</b> Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.	IAS goes further than CCSS by having the student interpret and model ratios.  IAS also offers specific ratio notation examples.
<b>6.NS.9:</b> Understand the concept of a unit rate and use terms related to rate in the context of a ratio relationship.	<b>6.RP.A.2:</b> Understand the concept of a unit rate $a/b$ associated with a ratio $a:b$ with $b \neq 0$ , and use rate language in the context of a ratio relationship.	<i>No content differences identified.</i>
<b>6.NS.10:</b> Use reasoning involving rates and ratios to model real-world and other mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations).	<b>6.RP.A.3:</b> Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.  <b>6.RP.A.3.a:</b> Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.  <b>6.RP.A.3.b:</b> Solve unit rate problems including those involving unit pricing and constant speed.	IAS does not have the student plot pairs on the coordinate plane and does not specify the unit rate problems.

Indiana Academic Standards (IAS) 2020	Common Core State Standards (CCSS)	Difference Between IAS 2020 and CCSS
<b>Computation</b>		
<b>6.C.1:</b> Divide multi-digit whole numbers fluently using a standard algorithmic approach.	<b>6.NS.B.2:</b> Fluently divide multi-digit numbers using the standard algorithm.	<i>No content differences identified.</i>
<b>6.C.2:</b> Compute with positive fractions and positive decimals fluently using a standard algorithmic approach.	<b>6.NS.B.3:</b> Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	<i>No content differences identified.</i>
<b>6.C.3:</b> Solve real-world problems with positive fractions and decimals by using one or two operations.	<i>No CCSS equivalent.</i>	
<b>6.C.4:</b> Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations.	<b>6.NS.A.1:</b> Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.	IAS does not have students interpret quotients of fractions.
<b>6.C.5:</b> Evaluate positive rational numbers with whole number exponents.	<b>6.EE.A.1:</b> Write and evaluate numerical expressions involving whole-number exponents.	IAS does not have students write numerical expressions with whole number exponents.
<b>6.C.6:</b> Apply the 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	<b>6.EE.A.2.c:</b> Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the	IAS does not require the evaluation of expressions.

<p>with nonnegative rational numbers, including those using grouping symbols, such as parentheses, and involving whole number exponents.</p>	<p>conventional order when there are no parentheses to specify a particular order (Order of Operations).</p>	
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Indiana Academic Standards (IAS) 2020	Common Core State Standards (CCSS)	Difference Between IAS 2020 and CCSS
<b>Algebra and Functions</b>		
<p><b>6.AF.1:</b> Evaluate expressions for specific values of their variables, including expressions with whole-number exponents and those that arise from formulas used in geometry and other real-world problems.</p>	<p><b>6.EE.A.2:</b> Write, read, and evaluate expressions in which letters stand for numbers.</p> <p><b>6.EE.A.2.c:</b> Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).</p>	<p><i>No content differences identified.</i></p>
<p><b>6.AF.2:</b> Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions and to justify whether two linear expressions are equivalent when the two expressions name the same number regardless of which value is substituted into them.</p>	<p><b>6.EE.A.3:</b> Apply the properties of operations to generate equivalent expressions.</p> <p><b>6.EE.A.4:</b> Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).</p>	<p>IAS requires students to also justify why two linear expressions are equivalent.</p>
<p><b>6.AF.3:</b> Define and use multiple variables when writing expressions to represent real-world and other mathematical problems, and evaluate them for given values.</p>	<p><b>6.EE.A.2.a:</b> Write expressions that record operations with numbers and with letters standing for numbers.</p> <p><b>6.EE.B.6:</b> Use variables to represent numbers and write expressions when solving a real-world or mathematical</p>	<p>IAS lacks the definition of variable.</p>

	problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	
<b>6.AF.4:</b> Understand that solving an equation or inequality is the process of answering the following question: Which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	<b>6.EE.B.5:</b> Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	<i>No content differences identified.</i>
<b>6.AF.5:</b> Solve equations of the form $x + p = q$ , $x - p = q$ , $px = q$ , and $x/p = q$ fluently for cases in which $p$ , $q$ and $x$ are all nonnegative rational numbers. Represent real-world problems using equations of these forms and solve such problems.	<b>6.EE.B.7:</b> Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which $p$ , $q$ and $x$ are all nonnegative rational numbers.	<i>No content differences identified.</i>
<b>6.AF.6:</b> Write an inequality of the form $x > c$ , $x \geq c$ , $x < c$ , or $x \leq c$ , where $c$ is a rational number, to represent a constraint or condition in a real-world or other mathematical problem. Recognize inequalities have infinitely many solutions and represent solutions on a number line diagram.	<b>6.EE.B.8:</b> Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.	IAS includes the constraints: $x \geq c$ and $x \leq c$ .
<b>6.AF.7:</b> Understand that signs of numbers in ordered pairs indicate the quadrant containing the point. Identify rules or	<b>6.NS.C.6.b:</b> Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane;	IAS does not specify the relationship between coordinate points that differ by sign only as a reflection across one or both axes.



<p>patterns in the signs as they relate to the quadrants. Graph points with rational number coordinates on a coordinate plane.</p>	<p>recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.</p> <p><b>6.NS.C.6.c:</b> Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.</p>	
<p><b>6.AF.8:</b> Solve real-world and other mathematical problems by graphing points with rational number coordinates on a coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.</p>	<p><b>6.NS.C.8:</b> Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.</p>	<p><i>No content differences identified.</i></p>
<p><b>6.AF.9:</b> Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane.</p>	<p><b>6.RP.A.3.a:</b> Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.</p>	<p><i>No content differences identified.</i></p>
<p><b>6.AF.10:</b> Use variables to represent two quantities in a proportional relationship in a real-world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and</p>	<p><b>6.EE.C.9:</b> Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and</p>	<p><i>No content differences identified.</i></p>

independent variables using graphs and tables, and relate these to the equation.	independent variables using graphs and tables, and relate these to the equation.	
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Indiana Academic Standards (IAS) 2020	Common Core State Standards (CCSS)	Difference Between IAS 2020 and CCSS
<b>Geometry and Measurement</b>		
<p><b>6.GM.1:</b> Convert between measurement systems (English to metric and metric to English) given conversion factors, and use these conversions in solving real-world problems.</p>	<p><b>6.RP.A.3.d:</b> Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p>	<p><i>No content differences identified.</i></p>
<p><b>6.GM.2:</b> Know that the sum of the interior angles of any triangle is <math>180^\circ</math> and that the sum of the interior angles of any quadrilateral is <math>360^\circ</math>. Use this information to solve real-world and mathematical problems.</p>	<p><i>No CCSS equivalent.</i></p>	
<p><b>6.GM.3:</b> Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate; apply these techniques to solve real-world and other mathematical problems</p>	<p><b>6.G.A.3:</b> Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.</p>	<p><i>No content differences identified.</i></p>
<p><b>6.GM.4:</b> Find the area of complex shapes composed of polygons by composing or decomposing into simple shapes; apply this technique to solve real-world and other mathematical problems.</p>	<p><b>6.G.A.1:</b> Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.</p>	<p>IAS does not limit the figures for which students must find an area.</p>

<p><b>6.GM.5:</b> Find the volume of a right rectangular prism with fractional edge lengths using unit cubes of the appropriate unit fraction edge lengths (e.g., using technology or concrete materials), and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas <math>V = lwh</math> and <math>V = Bh</math> to find volumes of right rectangular prisms with fractional edge lengths to solve real-world and other mathematical problems.</p>	<p><b>6.G.A.2:</b> Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas <math>V = lwh</math> and <math>V = bh</math> to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.</p>	<p><i>No content differences identified.</i></p>
<p><b>6.GM.6:</b> Construct right rectangular prisms from nets and use the nets to compute the surface area of prisms; apply this technique to solve real-world and other mathematical problems.</p>	<p><b>6.G.A.4:</b> Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.</p>	<p>IAS limits the figures to right rectangular prisms.</p>

Indiana Academic Standards (IAS) 2020	Common Core State Standards (CCSS)	Difference Between IAS 2020 and CCSS
<b>Data Analysis and Statistics</b>		
<p><b>6.DS.1:</b> Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for the variability in the answers. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.</p>	<p><b>6.SP.A.1:</b> Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.</p> <p><b>6.SP.A.2:</b> Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.</p>	<p><i>No content differences identified.</i></p>
<p><b>6.DS.2:</b> Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots.</p>	<p><b>6.SP.B.4:</b> Display numerical data in plots on a number line, including dot plots, histograms, and box plots.</p>	<p>IAS specifies that students select, create, and interpret the graphical representations of numerical data.</p>
<p><b>6.DS.3:</b> Formulate statistical questions; collect and organize the data (e.g., using technology); display and interpret the data with graphical representations (e.g., using technology).</p>	<p><i>No CCSS equivalent.</i></p>	
<p><b>6.DS.4:</b> Summarize numerical data sets in relation to their context in multiple ways, such as: report the number of observations; describe the nature of the attribute under investigation, including how it was measured and its units of measurement; determine quantitative measures of center (mean and/or median) and spread (range and interquartile range); describe any</p>	<p><b>6.SP.B.5:</b> Summarize numerical data sets in relation to their context, such as by:</p> <p><b>6.SP.B.5.a:</b> Reporting the number of observations.</p> <p><b>6.SP.B.5.b:</b> Describing the nature of the attribute under investigation, including how it</p>	<p>IAS substitutes the term spread for variability and omits mean absolute deviation as a measure of spread for students to find.</p>

<p>overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered; 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</p>	<p>was measured and its units of measurement.</p> <p><b>6.SP.B.5.c:</b> Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.</p> <p><b>6.SP.B.5.d:</b> Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.</p>	
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