



# Indiana Department of Education

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## Indiana Academic Standards 2020 Grade 7 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>
<p><b>PS.3: Construct viable arguments and critique the reasoning of others.</b></p>	<p><b>MP.3: Construct viable arguments and critique the reasoning of others.</b></p>	<p>IAS includes the justification of statements that are true always, sometimes, or never. IAS includes collaboration in a mathematics</p>

<p>Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They analyze situations by breaking them into cases and recognize and use counterexamples. They organize their mathematical thinking, justify their conclusions and communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. They justify whether a given statement is true always, sometimes, or never. Mathematically proficient students participate and collaborate in a mathematics community. They listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.</p>	<p>Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They 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.</p>	<p>community and does not distinguish between younger and older students.</p>
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<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>
<p><b>PS.5: Use appropriate tools strategically.</b></p> <p>Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might</p>	<p><b>MP.5: Use appropriate tools strategically.</b></p> <p>Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might</p>	<p>IAS does not distinguish between younger and older students.</p>

<p>include pencil and paper, models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Mathematically proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. Mathematically proficient students identify relevant external mathematical resources, such as digital content, and use them to pose or solve problems. They use technological tools to explore and deepen their understanding of concepts and to support the development of learning mathematics. They use technology to contribute to concept development, simulation, representation, reasoning, communication and problem solving.</p>	<p>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.</p>	
<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</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</p>	<p>IAS does not distinguish between younger and older students.</p>

<p>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>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><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 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</p>	<p>IAS has removed examples and does not distinguish between younger and older students.</p>

	<p>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 <math>(1, 2)</math> 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 evaluate the reasonableness of their intermediate results.</p>	<p>IAS has removed examples and does not distinguish between younger and older students.</p>



Indiana Academic Standards (IAS) 2020	Common Core State Standards (CCSS)	Difference Between IAS 2020 and CCSS
<b>Number Sense</b>		
<p><b>7.NS.1:</b> Find the prime factorization of whole numbers and write the results using exponents.</p>	<p><i>No CCSS equivalent.</i></p>	
<p><b>7.NS.2:</b> Understand the inverse relationship between squaring and finding the square root of a perfect square whole number. Find square roots of perfect square whole numbers.</p>	<p><i>No CCSS equivalent.</i></p>	
<p><b>7.NS.3:</b> Know there are rational and irrational numbers. Identify, compare, and order rational and irrational numbers (e.g. <math>\sqrt{2}</math>, <math>\sqrt{3}</math>, <math>\sqrt{5}</math>, <math>\pi</math>) and plot them on a number line.</p>	<p><i>No CCSS equivalent.</i></p>	

Indiana Academic Standards (IAS) 2020	Common Core State Standards (CCSS)	Difference Between IAS 2020 and CCSS
<b>Computation</b>		
<p><b>7.C.1:</b> Understand <math>p + q</math> as the number located a distance <math> q </math> from <math>p</math>, in the positive or negative direction, depending on whether <math>q</math> is positive or negative. Show on a number line that a number and its opposite have a sum of 0 (are additive inverses). Find and interpret sums of rational numbers in real-world contexts.</p>	<p><b>7.NS.A.1.b:</b> Understand <math>p + q</math> as the number located a distance <math> q </math> from <math>p</math>, in the positive or negative direction depending on whether <math>q</math> is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.</p>	<i>No content differences identified.</i>
<p><b>7.C.2:</b> Understand subtraction of rational numbers as adding the additive inverse, <math>p - q = p + (-q)</math>. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.</p>	<p><b>7.NS.A.1.c:</b> Understand subtraction of rational numbers as adding the additive inverse, <math>p - q = p + (-q)</math>. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.</p>	<i>No content differences identified.</i>
<p><b>7.C.3:</b> Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as <math>(-1)(-1) = 1</math> and the rules for multiplying signed numbers.</p>	<p><b>7.NS.A.2.a:</b> Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as <math>(-1)(-1) = 1</math> and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.</p>	<p>IAS does not require products of rational numbers to be described in real-world contexts.</p>

<p><b>7.C.4:</b> Understand that integers can be divided, provided that the divisor is not zero. Understand that if <math>p</math> and <math>q</math> are integers, then <math>-(p/q) = (-p)/q = p/(-q)</math>.</p>	<p><b>7.NS.A.2.b:</b> Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If <math>p</math> and <math>q</math> are integers, then <math>-(p/q) = (-p)/q = p/(-q)</math>. Interpret quotients of rational numbers by describing real-world contexts.</p>	<p>IAS does not require quotients of rational numbers to be described in real-world contexts.</p>
<p><b>7.C.5:</b> Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.</p>	<p><b>7.RP.A.1:</b> Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.</p>	<p><i>No content differences identified.</i></p>
<p><b>7.C.6:</b> Use proportional relationships to solve ratio and percent problems with multiple operations (e.g. simple interest, tax, markups, markdowns, gratuities, conversions within and across measurement systems, and percent increase and decrease).</p>	<p><b>6.RP.A.3.c:</b> Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.</p> <p><b>7.RP.A.3:</b> Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.</p>	<p>IAS specifies conversions within and across measurement systems in addition to those listed in the CCSS.</p>
<p><b>7.C.7:</b> Compute fluently with rational numbers using an algorithmic approach.</p>	<p><b>7.NS.A.1:</b> Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.</p>	<p>IAS condenses the specific skills from CCSS and specifies that students understand and use a specific algorithmic approach.</p>

	<p><b>7.NS.A.1.d:</b> Apply properties of operations as strategies to add and subtract rational numbers.</p> <p><b>7.NS.A.2:</b> Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <p><b>7.NS.A.2.c:</b> Apply properties of operations as strategies to multiply and divide rational numbers.</p>	
<p><b>7.C.8:</b> Solve real-world problems with rational numbers by using one or two operations.</p>	<p><b>7.NS.A.3:</b> Solve real-world and mathematical problems involving the four operations with rational numbers.</p> <p><b>7.EE.B.3:</b> Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.</p>	<p>IAS limits multi-step problems to one or two operations. Students are also not expected to assess the reasonableness of their answers with any specific strategy.</p>

Indiana Academic Standards (IAS) 2020	Common Core State Standards (CCSS)	Difference Between IAS 2020 and CCSS
<b>Algebra and Functions</b>		
<p><b>7.AF.1:</b> Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions, including situations that involve factoring out a common number (e.g., given <math>2x - 10</math>, create an equivalent expression <math>2(x - 5)</math>). Justify each step in the process.</p>	<p><b>7.EE.A.1:</b> Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p>	<p>IAS includes the need for students to justify their work with the applied properties of operations.</p>
<p><b>7.AF.2:</b> Solve equations of the form <math>px + q = r</math> and <math>p(x + q) = r</math> fluently, where <math>p</math>, <math>q</math>, and <math>r</math> are specific rational numbers. Represent real-world problems using equations of these forms and solve such problems.</p>	<p><b>7.EE.B.4:</b> Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p> <p><b>7.EE.B.4.a:</b> Solve word problems leading to equations of the form <math>px + q = r</math> and <math>p(x + q) = r</math>, where <math>p</math>, <math>q</math>, and <math>r</math> are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.</p>	<p>IAS does not require students to compare algebraic and arithmetic solutions.</p>
<p><b>7.AF.3:</b> Solve inequalities of the form <math>px + q (&gt; \text{ or } \geq) r</math> or <math>px + q (&lt; \text{ or } \leq) r</math>, where <math>p</math>, <math>q</math>, and <math>r</math> are specific rational numbers. Represent real-world problems using inequalities of these forms and solve such problems.</p>	<p><b>7.EE.B.4:</b> Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p>	<p><i>No content differences identified.</i></p>

<p>Graph the solution set of the inequality and interpret it in the context of the problem.</p>	<p><b>7.EE.B.4.b:</b> Solve word problems leading to inequalities of the form <math>px + q &gt; r</math> or <math>px + q &lt; r</math>, where <math>p</math>, <math>q</math>, and <math>r</math> are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.</p>	
<p><b>7.AF.4:</b> Define slope as vertical change for each unit of horizontal change and recognize that a constant rate of change or constant slope describes a linear function. Identify and describe situations with constant or varying rates of change.</p>	<p><i>No CCSS equivalent.</i></p>	
<p><b>7.AF.5:</b> Graph a line given its slope and a point on the line. Find the slope of a line given its graph.</p>	<p><i>No CCSS equivalent.</i></p>	
<p><b>7.AF.6:</b> Decide whether two quantities are in a proportional relationship (e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin).</p>	<p><b>7.RP.A.2:</b> Recognize and represent proportional relationships between quantities.</p> <p><b>7.RP.A.2.a:</b> Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.</p>	<p><i>No content differences identified.</i></p>
<p><b>7.AF.7:</b> Identify the unit rate or constant of proportionality in tables, graphs, equations, and verbal descriptions of proportional relationships.</p>	<p><b>7.RP.A.2.b:</b> Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p>	<p>IAS does not require students to identify the constant of proportionality in a diagram.</p>

<p><b>7.AF.8:</b> Explain what the coordinates of a point on the graph of a proportional relationship mean in terms of the situation, with special attention to the points (0, 0) and (1,r), where r is the unit rate.</p>	<p><b>7.RP.A.2.d:</b> Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.</p>	<p><i>No content differences identified.</i></p>
<p><b>7.AF.9:</b> Represent real-world and other mathematical situations that involve proportional relationships. Write equations and draw graphs to represent these proportional relationships. Recognize that these situations are described by a linear function in the form <math>y = mx</math>, where the unit rate, m, is the slope of the line.</p>	<p><b>7.RP.A.2:</b> Recognize and represent proportional relationships between quantities.</p> <p><b>7.RP.A.2.c:</b> Represent proportional relationships by equations.</p> <p><b>8.EE.B.5:</b> Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.</p>	<p><i>No content difference identified.</i></p>

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<b>Geometry and Measurement</b>		
<p><b>7.GM.1:</b> Explore triangles with given conditions from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.</p>	<p><b>7.G.A.2:</b> Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.</p>	<p>IAS specifies simply exploring, rather than drawing, triangles for given conditions.</p>
<p><b>7.GM.2:</b> Identify and describe similarity relationships of polygons including the angle-angle criterion for similar triangles, and solve problems involving similarity.</p>	<p><i>No CCSS equivalent.</i></p>	
<p><b>7.GM.3:</b> Solve real-world and other mathematical problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing. Create a scale drawing by using proportional reasoning.</p>	<p><b>7.G.A.1:</b> Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.</p>	<p>IAS asks students to apply this skill in both a real-world context and other mathematical problems.</p>
<p><b>7.GM.4:</b> Solve real-world and other mathematical problems using facts about vertical, adjacent, complementary, and supplementary angles.</p>	<p><b>7.G.B.5:</b> Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.</p>	<p><i>No content differences identified.</i></p>



<p><b>7.GM.5:</b> Understand the formulas for area and circumference of a circle and use them to solve real-world and other mathematical problems; give an informal derivation of the relationship between circumference and area of a circle.</p>	<p><b>7.G.B.4:</b> Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.</p>	<p>IAS asks students to understand the formulas for area and circumference and apply them in real world problems.</p>
<p><b>7.GM.6:</b> Solve real-world and other mathematical problems involving volume of cylinders and three-dimensional objects composed of right rectangular prisms.</p>	<p><b>7.G.B.6:</b> Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.</p>	<p>IAS does not include surface area. The only objects of interest are cylinders and right rectangular prisms.</p>
<p><b>7.GM.7:</b> Construct nets for right rectangular prisms and cylinders and use the nets to compute the surface area; apply this technique to solve real-world and other mathematical problems.</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 is limited to right rectangular prisms and cylinders; explicitly states the use of nets to compute surface area.</p>

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<b>Data Analysis, Statistics, and Probability</b>		
<p><b>7.DSP.1:</b> Understand that statistics can be used to gain information about a population by examining a sample of the population. Understand that conclusions and generalizations about a population from a sample are valid only if the sample is representative of that population and that random sampling tends to produce representative samples and support valid inferences.</p>	<p><b>7.SP.A.1:</b> Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.</p>	<p><i>No content differences identified.</i></p>
<p><b>7.DSP.2:</b> Use data from a random sample to draw inferences about a population. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.</p>	<p><b>7.SP.A.2:</b> Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.</p>	<p><i>No content differences identified.</i></p>
<p><b>7.DSP.3:</b> Find, use, and interpret measures of center (mean and median) and measures of spread (range, interquartile range, and mean absolute deviation) for numerical data from random samples to draw comparative inferences about two populations.</p>	<p><b>7.SP.B.4:</b> Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.</p>	<p>IAS uses the term spread for variability and defines measures of spread.</p>
<p><b>7.DSP.4:</b> Make observations about the degree of visual overlap of two numerical data distributions represented in line plots or box plots. Describe how data, particularly</p>	<p><b>7.SP.B.3:</b> Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the</p>	<p>IAS specifically addresses how outliers affect the mean or median.</p>

<p>outliers, added to a data set may affect the mean and/or median.</p>	<p>centers by expressing it as a multiple of a measure of variability.</p>	
<p><b>7.DSP.5:</b> Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Understand that a probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. Understand that a probability of 1 indicates an event certain to occur and a probability of 0 indicates an event impossible to occur. Identify probabilities of events as impossible, unlikely, equally likely, likely, or certain.</p>	<p><b>7.SP.C.5:</b> Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.</p>	<p>IAS specifies event probabilities of 0 (impossible) and 1 (certain); asks students to identify events as impossible, unlikely, equally likely, likely, or certain.</p>
<p><b>7.DSP.6:</b> Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its relative frequency from a large sample.</p>	<p><b>7.SP.C.6:</b> Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.</p>	<p>IAS does not require students to predict the approximate relative frequency of the probability.</p>
<p><b>7.DSP.7:</b> Develop probability models that include the sample space and probabilities of outcomes to represent simple events with equally likely outcomes. Predict the approximate relative frequency of the event based on the model. Compare probabilities from the model to observed frequencies;</p>	<p><b>7.SP.C.7:</b> Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.</p> <p><b>7.SP.C.7.a:</b> Develop a uniform probability model by assigning equal probability to all</p>	<p>IAS specifies the inclusion of sample space.</p>

evaluate the level of agreement and explain possible sources of discrepancy.	outcomes, and use the model to determine probabilities of events.	
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