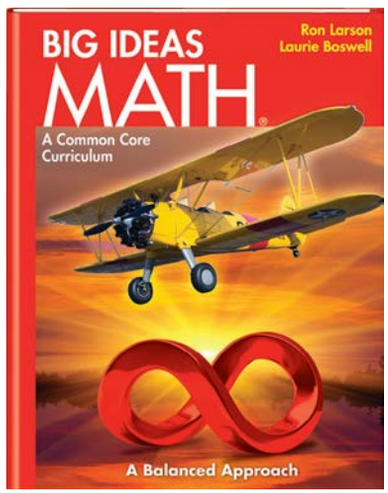

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Correlation to the Common Core State Standards
Regular Pathway - Grade 7

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Standard		Pages or Locations Where Standard is Addressed
Domain: Ratios and Proportional Relationships		
7.RP.1	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.	*Primary SE/TE:* 162-169 (5.1)
7.RP.2	Recognize and represent proportional relationships between quantities.	
	a. 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.	*Primary SE/TE:* 170-175 (5.2), 176-177 (Ext. 5.2), 198-203 (5.6)
	b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	*Primary SE/TE:* 176-177 (Ext. 5.2), 192-197 (5.5), 198-203 (5.6) *Supporting SE/TE:* 186-191 (5.4)
	c. Represent proportional relationships by equations.	*Primary SE/TE:* 178-183 (5.3), 186-191 (5.4), 198-203 (5.6)
	d. 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.	*Primary SE/TE:* 176-177 (Ext. 5.2), 198-203 (5.6)
7.RP.3	Use proportional relationships to solve multistep ratio and percent problems.	*Primary SE/TE:* 162-169 (5.1), 178-183 (5.3), 226-231 (6.3), 232-237 (6.4), 240-245 (6.5), 246-251 (6.6), 252-257 (6.7)
Domain: The Number System		
7.NS.1	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.	
	a. Describe situations in which opposite quantities combine to make 0.	*Primary SE/TE:* 8-13 (1.2) *Supporting SE/TE:* 2-7 (1.1), 50-55 (2.2)
	b. Understand $p + q$ as the number located a distance $\|q\|$ from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.	*Primary SE/TE:* 8-13 (1.2), 50-55 (2.2) *Supporting SE/TE:* 2-7 (1.1)
	c. Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.	*Primary SE/TE:* 14-19 (1.3), 58-63 (2.3) *Supporting SE/TE:* 2-7 (1.1)
	d. Apply properties of operations as strategies to add and subtract rational numbers.	*Primary SE/TE:* 8-13 (1.2), 14-19 (1.3), 50-55 (2.2), 58-63 (2.3) *Supporting SE/TE:* 2-7 (1.1)

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Standard		Pages or Locations Where Standard is Addressed
7.NS.2	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.	
	a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.	*Primary SE/TE:* 22-27 (1.4), 64-69 (2.4) *Supporting SE/TE:* 2-7 (1.1)
	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 p and q are integers, then $–(p/q) = (–p)/q = p/(–q)$. Interpret quotients of rational numbers by describing real-world contexts.	*Primary SE/TE:* 28-33 (1.5), 44-49 (2.1), 64-69 (2.4) *Supporting SE/TE:* 2-7 (1.1)
	c. Apply properties of operations as strategies to multiply and divide rational numbers.	*Primary SE/TE:* 22-27 (1.4), 64-69 (2.4) *Supporting SE/TE:* 2-7 (1.1)
	d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.	*Primary SE/TE:* 44-49 (2.1) *Supporting SE/TE:* 2-7 (1.1)
7.NS.3	Solve real-world and mathematical problems involving the four operations with rational numbers.	*Primary SE/TE:* 8-13 (1.2), 14-19 (1.3), 22-27 (1.4), 28-33 (1.5), 50-55 (2.2), 58-63 (2.3), 64-69 (2.4) *Supporting SE/TE:* 2-7 (1.1), 79
Domain: Expressions and Equations		
7.EE.1	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	*Primary SE/TE:* 80-85 (3.1), 86-91 (3.2), 92-93 (Ext. 3.2)
7.EE.2	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.	*Primary SE/TE:* 80-85 (3.1), 86-91 (3.2)
7.EE.3	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.	*Primary SE/TE:* 214-219 (6.1), 220-225 (6.2), 232-237 (6.4)

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Standard		Pages or Locations Where Standard is Addressed
7.EE.4	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.	
	a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r 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.	*Primary SE/TE:* 96-101 (3.3), 102-107 (3.4), 108-113 (3.5)
	b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.	*Primary SE/TE:* 124-129 (4.1), 130-135 (4.2), 138-145 (4.3), 146-151 (4.4)
Domain: Geometry		
7.G.1	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.	*Primary SE/TE:* 298-305 (7.5)
7.G.2	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.	*Primary SE/TE:* 282-287 (7.3), 292-297 (7.4)
7.G.3	Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.	*Primary SE/TE:* 388-389 (Ext. 9.5)
7.G.4	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.	*Primary SE/TE:* 316-323 (8.1), 332-337 (8.3) *Supporting SE/TE:* 324-329 (8.2), 368-373 (9.3)
7.G.5	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.	*Primary SE/TE:* 270-275 (7.1), 276-281 (7.2), 288-289 (Ext. 7.3)
7.G.6	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.	*Primary SE/TE:* 338-343 (8.4), 354-361 (9.1), 362-367 (9.2), 376-381 (9.4), 382-387 (9.5)
Domain: Statistics and Probability		
7.SP.1	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.	*Primary SE/TE:* 440-445 (10.6)

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Standard		Pages or Locations Where Standard is Addressed
7.SP.2	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.	*Primary SE/TE:* 440-445 (10.6), 446-447 (Ext. 10.6)
7.SP.3	Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.	*Primary SE/TE:* 448-453 (10.7)
7.SP.4	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.	*Primary SE/TE:* 448-453 (10.7)
7.SP.5	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.	*Primary SE/TE:* 406-411 (10.2) *Supporting SE/TE:* 400-405 (10.1), 412-419 (10.3)
7.SP.6	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.	*Primary SE/TE:* 412-419 (10.3)
7.SP.7	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.	
	a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.	*Primary SE/TE:* 406-411 (10.2), 412-419 (10.3)
	b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.	*Primary SE/TE:* 412-419 (10.3)
7.SP.8	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.	
	a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.	*Primary SE/TE:* 420-427 (10.4), 428-435 (10.5)
	b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event.	*Primary SE/TE:* 420-427 (10.4), 428-435 (10.5)
	c. Design and use a simulation to generate frequencies for compound events.	*Primary SE/TE:* 436-437 (Ext. 10.5)

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	Standard	Pages or Locations Where Standard is Addressed
Mathematical Practices		
		Big Ideas Math is a research-based program, systematically developed using the Common Core State Standards for Mathematical Practice as the underlying structure. The Standards for Mathematical Practice are seamlessly connected to the Common Core State Content Standards resulting in a program that maximizes both teacher effectiveness and student understanding. Every section has additional Mathematical Practice support in the Dynamic Classroom and in the online Lesson Plans at *BigIdeasMath.com* .
1	Make sense of problems and persevere in solving them. Mathematically proficient students: • Explain to themselves the meaning of a problem and looking for entry points to its solution. • Analyze givens, constraints, relationships, and goals • Make conjectures about the form and meaning of the solution attempt. • Plan a solution pathway rather than simply jumping into a solution. • Consider analogous problems and try special cases and simpler forms of the original problen in order to gain insight into its solution. • Monitor and evaluate their progress and change course if necessary. • Transform algebraic expressions or change the viewing window on their graphing calculator to get information. • Explain correspondences between equations, verbal descriptions, tables, and graphs. • Draw diagrams of important features and relationships, graph data, and search for regularity or trends. • Use concrete objects or pictures to help conceptualize and solve a problem. • Check their answers to problems using a different method. • Ask themselves, “Does this make sense?” • Understand the approaches of others to solving complex problems and identify correspondences between approaches.	Each section begins with an Essential Question. Students look for entry points using guides such as In Your Own Words. Clear step-by-step examples encourage students to plan a solution pathway rather than jumping into a solution attempt. Guided questions and instructional scaffolding support students’ perseverance. ***Sample references:*** Chapter 2, pages 44-49 Chapter 3, pages 102-107 Chapter 4, pages 124-129 Chapter 6, pages 240-245 Chapter 7, pages 288-289 Chapter 8, pages 332-337 Chapter 8, pages 338-343 Chapter 9, pages 388-389 Chapter 10, pages 400-405

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	Standard	Pages or Locations Where Standard is Addressed
2	Reason abstractly and quantitively. Mathematically proficient students: • Make sense of quantities and their relationships in problem situations. • Bring two complementary abilities to bear on problems involving quantitative relationships: - Decontextualize (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 - Contextualize (pause as needed during the manipulation process in order to probe into the referents for the symbols involved) • Use quantitative reasoning that entails creating a coherent representation of the problem at hand, considering the units involved, and attending to the meaning of quantities, not just how to compute them . • Know and flexibly use different properties of operations and objects.	Students learn to represent problems by consistently using a verbal model, paying close attention to units and employing mathematical properties. This helps students represent problems symbolically and manipulate the representative symbols. They are taught to contextualize by thinking about the referents and symbols involved. ***Sample references:*** Chapter 1, pages 14-19 Chapter 2, pages 50-55 Chapter 3, pages 86-91 Chapter 5, pages 186-191 Chapter 6, pages 220-225 Chapter 6, pages 246-251 Chapter 10, pages 440-445

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	Standard	Pages or Locations Where Standard is Addressed
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. • Make conjectures and build a logical progression of statements to explore the truth of their conjectures. • Analyze situations by breaking them into cases. • Recognize and use counterexamples. • Justify their conclusions, communicate them to others, and respond to the arguments of others. • Reason inductively about data, making plausible arguments that take into account the context from which the data arose. • Compare the effectiveness of two plausible arguments. • Distinguish correct logic or reasoning from that which is flawed and, if there is a flaw, explain what it is - Elementary students construct arguments using concrete referents such as objects, drawings, diagrams, and actions. - Later students learn to determine domains to which an argument applies. • Listen or read the arguments of others, decide whether they make sense, and ask useful question to clarify or improve arguments.	Throughout the series students are expected to develop models, formulate deductions, and make conjectures. Essential Questions, Error Analysis exercises, and Reasoning exercises provide opportunities for students to make assumptions, examine results, and explain their reasoning. What Is Your Answer, In Your Own Words, You Be The Teacher, and Which One Doesn't Belong encourage debate and sensemaking. ***Sample references:*** Chapter 1, pages 8-13 Chapter 4, pages 138-145 Chapter 5, pages 170-175 Chapter 6, pages 232-237 Chapter 7, pages 270-275 Chapter 7, pages 276-281 Chapter 8, pages 316-323 Chapter 9, pages 354-361 Chapter 10, pages 406-411 Chapter 10, pages 428-435

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	Standard	Pages or Locations Where Standard is Addressed
4	Model with mathematics. Mathematically proficient students: • 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. • Make assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. • Identify important quantities in a practical situation • Map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. • Analyze those relationships mathematically to draw conclusions. • Interpret their mathematical results in the context of the situation. • Reflect on whether the results make sense, possibly improving the model if it has not served its purpose.	In each section, students work with the mathematics of everyday life. Students use graphs, tables, charts, number lines, diagrams, flowcharts, and formulas to organize, make sense of, and identify realistic solutions to real-life situations. Students write stories involving math, on topics such as using percents to help them improve their grades. Visual representations, such as integer tiles and fraction models, help students make sense of numeric operations. ***Sample references:*** Chapter 2, pages 58-63 Chapter 3, pages 96-101 Chapter 4, pages 130-135 Chapter 5, pages 192-197 Chapter 6, pages 226-231 Chapter 9, pages 376-381 Chapter 10, pages 412-419

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	Standard	Pages or Locations Where Standard is Addressed
5	Use appropriate tools strategically. Mathematically proficient students: • Consider available tools when solving a mathematical problem. (pencil and paper, concrete models, ruler, protractor, calculator, spreadsheet, computer algebra system, statistical package, or dynamic geometry software) • 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. • Detect possible errors by strategically using estimation and other mathematical knowledge. • Know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. • Identify relevant external mathematical resources and use them to pose or solve problems. • Use technological tools to explore and deepen their understanding of concepts.	Opportunities for students to select and use appropriate tools such as graphing calculators, protractors, measuring devices, websites, and other external resources are provided for students throughout the series. ***Sample references:*** Chapter 6, pages 252-257 Chapter 7, pages 282-287 Chapter 7, pages 292-297 Chapter 10, pages 448-453

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	Standard	Pages or Locations Where Standard is Addressed
6	Attend to Precision. Mathematically proficient students: • Try to communicate precisely to others. - In the elementary grades, students give carefully formulated explanations to each other. - In high school, students have learned to examine claims and make explicit use of definitions. • Try to use clear definitions in discussion with others and in their own reasoning. • State the meaning of the symbols they choose, including using the equal sign consistently and appropriately. • Specify units of measure and label axes to clarify the correspondence with quantities in a problem. • Calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context.	Through the balanced approach to instruction, students have daily opportunities to communicate mathematically. Students work through activities, examples, and exercises to understand and use the language of mathematics, paying careful attention to the importance of units, labeling, and quantities. ***Sample references:*** Chapter 1, pages 2-7 Chapter 2, pages 64-69 Chapter 3, pages 80-85 Chapter 4, pages 146-151 Chapter 5, pages 198-203 Chapter 6, pages 214-219 Chapter 7, pages 298-305 Chapter 8, pages 324-329 Chapter 9, pages 362-367

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	Standard	Pages or Locations Where Standard is Addressed
7	Look for and make use of structure. Mathematically proficient students: • Look closely to discern a pattern or structure. - Young students 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 x 8 equals the well remembered 7 x 5 + 7 x 3, in preparation for the distributive property. - In the expression x^2 + 9x + 14, older students can see the 14 as 2 x 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. • Step back for an overview and can shift perspective. • See complicated things, such as some algebraic expressions, as single objects or composed of several objects.	Real and relevant word problems encourage students to "see" that these problems are composed of several components. Students find that some mathematical representations share common mathematical structures and learn to look for these relationships discerning inherent patterns and structures. ***Sample references:*** Chapter 1, pages 22-27 Chapter 3, pages 92-93 Chapter 5, pages 162-169 Chapter 9, pages 368-373 Chapter 9, pages 382-387 Chapter 10, pages 420-427
8	Look for and express regularity in repeated reasoning. Mathematically proficient students: • Notice if calculations are repeated. • 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 repeated decimal. - Paying attention to the calculation of slope as they repeatedly check whether the points are on the line through (1,2) with a 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 high school students to the general formula for the sum of a geometric series. • Maintain oversight of the process of solving a problem, while attending to the details. • Continually evaluate the reasonableness of intermediate results.	The series helps students see that mathematics is well structured and predictable. Students work through a problem, not through the numbers. They consider factors such as an appropriate answer to the question, reasonable intermediate steps, and a realistic solution. ***Sample references:*** Chapter 1, pages 28-33 Chapter 3, pages 108-113 Chapter 5, pages 178-183