Go Math Textbook to Curriculum Map Alignment for CC Grade 6
GRADE 6 – UNIT 1
Understand the Concept of Ratio and Reason with Ratio

Critical Area: Students use reasoning about multiplication and division to solve ratio and rate problems about quantities. By viewing equivalent ratios and rates as deriving from, and extending, pairs of rows (or columns) in the multiplication table, and by analyzing simple drawings that indicate the relative size of quantities, students connect their understanding of multiplication and division with ratios and rates. Thus students expand the scope of problems for which they can use multiplication and division to solve problems, and they connect ratios and fractions. Students solve a wide variety of problems involving ratios and rates.

CLUSTERS	COMMON CORE STATE STANDARDS	GO MATH	ADDITIONAL RESOURCES
(m)[1]Understand ratio concepts and use ratio reasoning to solve problems.	**6.RP.1**. Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."*	**6.RP.1-** 6.1	**6.RP.1** **Illustrative Mathematics** Games at Recess, The Escalator, Assessment Variation, Bag of Marbles
	6.RP.2. 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. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."*1	**6.RP.2-** 6.2	**6.RP.2** **Illustrative Mathematics** Mangos for Sale, Price per pound and pounds per dollar, Riding at a Constant Speed, Assessment Variation, The Escalator, Assessment Variation, Hippos Love Pumpkins, Ticket Booth **Inside Mathematics** candies, truffles (6.RP.1-2)
	6.RP.3. 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.		
	a. 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.	**6.RP.3a**-6.3, 7.1	**6.RP.3.a** **Illustrative Mathematics** Walk-a-thon 1, Gianna's Job, Ticket Booth, Bag of Marbles
	b. Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*	**6.RP.3b**-7.2	**6.RP.3.b** **Illustrative Mathematics** Walk-a-thon 1, Friends Meeting on Bicycles, Running at a Constant Speed, Data Transfer, Gianna's Job

	c. 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. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	**6.RP.3c-** 8.1, 8.2, 8.3 **6.RP.3d-** 7.3, 7.4	**6.RP.3.c** **Illustrative Mathematics** Overlapping Squares, Shirt Sale, Anna in D.C., Exam scores **6.RP.3.d** **Illustrative Mathematics** Speed Conversions, Unit Conversions **Inside Mathematics** sewing, snail pace (6.RP.2-3) **Mathematics Assessment Project** Proportional Reasoning, Sharing Costs: Travelling to School, Solving Real-life Problems: Selling, Soup FAL (6.RP.1-3)
(s/a)^2 Solve real-world and mathematical problems involving area, surface area, and volume.	6.G.1. 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. 6.G.2. 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 $V = l\ w\ h$ and $V = b\ h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. 6.G.4. 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.	**6.G.1-** 13.1, 13.2, 13.3, 13.4 **6.G.2-** 15.2,15.3 **6.G.4-** 15.1	

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GRADE 6 – UNIT 2
The Number System

Critical Area: Description of the critical area: Students use the meaning of fractions, the meanings of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for dividing fractions make sense. Students use these operations to solve problems. Students extend their previous understandings of number and the ordering of numbers to the full system of rational numbers, which includes negative rational numbers, and in particular negative integers. They reason about the order and absolute value of rational numbers and about the location of points in all four quadrants of the coordinate plane.

CLUSTERS	COMMON CORE STATE STANDARDS	GO MATH	ADDITIONAL RESOURCES
(m)[1] Apply and extend previous understandings of multiplication and division to divide fractions by fractions.	**6.NS.1**. 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. *For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc.) How much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?*	**6.NS.1-** 4.2, 4.3, 4.4	**6.NS.1** **Illustrative Mathematics** Baking Cookies, Video Game Credits Making Hot Cocoa, Variation 1, How Many Containers in One Cup / Cups in One Container?, Running to School, Variation 2, Making Hot Cocoa, Variation 2, Drinking Juice, Variation 2, Drinking Juice, Variation 3, Traffic Jam, How many _____ are in. . . ?, Standing in Line, Running to School, Variation 3, Dan's Division Strategy, Cup of Rice **Inside Mathematics** rabbit costumes **Mathematics Assessment Project** Interpreting Multiplication and Division FAL
(m)[1] Compute fluently with multi-digit numbers and find common factors and multiples.	**6.NS.2**. Fluently divide multi-digit numbers using the standard algorithm.	**6.NS.2-** 5.1	**6.NS.2** **Illustrative Mathematics** Interpreting a Division Computation Batting Average, How many staples? **Inside Mathematics**

			baseball players
	6.NS.3. Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	**6.NS.3-** 5.2, 5.3, 5.4,5.5	**6.NS.3** **Illustrative Mathematics** Jayden's Snacks, Reasoning about Multiplication and Division and Place Value, Part 1, Reasoning about Multiplication and Division and Place Value, Part 2, Gifts from Grandma, Variation 3, Buying Gas, Movie tickets, Pennies to heaven, Setting Goals **Inside Mathematics** sewing
	6.NS.4. 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 common factor as a multiple of a sum of two whole numbers with no common factor. *For example, express 36 + 8 as 4 (9 + 2).*	**6.NS.4-** 2.1, 2.2, 4.1	**6.NS.4** **Illustrative Mathematics** Factors and Common Factors, Multiples and Common Multiples, Adding Multiples, The Florist Shop, Bake Sale **Mathematics Assessment Project** Using Standard Algorithms, Factors and Multiples FAL (6.NS.2-4)
(m)[1] Apply and extend previous understandings of numbers to the system of rational numbers.	**6.NS.5**. 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.	**6.NS.5-** 1.1	**6.NS.5** **Illustrative Mathematics** It's Warmer in Miami, Mile High
	6.NS.6. Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from	**6.NS.6-**3.1	

	previous grades to represent points on the line and in the plane with negative number coordinates. a. 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.,–(–3) = 3, and that 0 is its own opposite. b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. c. 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.	**6.NS.6a-** **6.NS.6b-** **6.NS.6c**-3.2, 12.1	**6.NS.6.a** **Illustrative Mathematics** Integers on the Number Line 2 **6.NS.6.b** **Illustrative Mathematics** Reflecting points over coordinate axes **6.NS.6.c** **Illustrative Mathematics** Plotting points in the coordinate plane **Inside Mathematics** percent cards
	6.NS.7. Understand ordering and absolute value of rational numbers. a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. *For example, interpret –3 > –7 as a statement that –3 is located to the right of –7 on a number line oriented from left to right.* b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write –3°C > –7°C to express the fact that –3°C is warmer than –7°C.* c. 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. *For example, for an account balance of –30 dollars, write |–30| =*	**6.NS.7a-** 3.3 **6.NS.7b-** 1.2 **6.NS.7c-** 1.3	**6.NS.7** **Illustrative Mathematics** Jumping Flea, Above and below sea level **6.NS.7.a** **Illustrative Mathematics** Integers on the Number Line 1, Fractions on the Number Line **6.NS.7.b** **Illustrative Mathematics** Comparing Temperatures

	30 to describe the size of the debt in dollars. d. Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than –30 dollars represents a debt greater than 30 dollars.* **6.NS.8**. 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.	**6.NS.7d-** **6.NS.8-** 14.1	**6.NS.8** **Illustrative Mathematics** Distances between Points **Mathematics Assessment Project** Fractions, Decimals and Percents, Adding and Subtracting Directed Numbers, Evaluating Statements About Number Operations, A Measure of Slope FAL (6.NS.5-8)
(s/a)^2 Solve real-world and mathematical problems involving area, surface area, and volume.	6.G.1. 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. 6.G.2. 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 $V = l\ w\ h$ and $V = b\ h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	**6.G.1-** 13.1, 13.2, 13.3, 13.4 **6.G.2-** 15.2, 15.3	

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GRADE 6 – UNIT 3
Understanding Expressions and Equations

Critical Area: Students understand the use of variables in mathematical expressions. They write expressions and equations that correspond to given situations, evaluate expressions, and use expressions and formulas to solve problems. Students understand that expressions in different forms can be equivalent, and they use the properties of operations to rewrite expressions in equivalent forms. Students know that the solutions of an equation are the values of the variables that make the equation true. Students use properties of operations and the idea of maintaining the equality of both sides of an equation to solve simple one-step equations. Students construct and analyze tables, such as tables of quantities that are in equivalent ratios, and they use equations (such as $3x = y$) to describe relationships between quantities.

CLUSTERS	COMMON CORE STATE STANDARDS	GO MATH	ADDITIONAL RESOURCES
Apply and extend previous understandings of arithmetic to algebraic expressions	6.EE.1. Write and evaluate numerical expressions involving whole-number exponents.	**6.EE.1-** 9.1, 9.2, 9.3	**6.EE.1** **Illustrative Mathematics** The Djinni's Offer, Seven to the What?!?, G Sierpinski's Carpet
	6.EE.2. Write, read, and evaluate expressions in which letters stand for numbers. a. Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as 5 – y.* b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.* c. 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). *For example, use the formulas $V = s^3$ and $A = 6 s^2$ to find the volume and surface area of a cube with sides of length s = 1/2.*	**6.EE.2a-**10.1 **6.EE.2b-** **6.EE.2c-** 10.2	**6.EE.2** **Illustrative Mathematics** Rectangle Perimeter 1, Distance to School
	6.EE.3. Apply the properties of operations to generate equivalent expressions. *For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x;*	**6.EE.3-** 10.3	**6.EE.3** **Illustrative Mathematics** Anna in D.C.

	apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y. 6.EE.4. Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.*	**6.EE.4-**	**6.EE.4** **Illustrative Mathematics** Equivalent Expressions, Rectangle Perimeter 2 **Mathematics Assessment Project** Laws of Arithmetic, Investigating: Consecutive Sums FAL (6.EE.1-4)
Reason about and solve one-variable equations and inequalities.	6.EE.5. 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.	**6.EE.5-** 11.3	**6.EE.5** **Illustrative Mathematics** Log Ride **Inside Mathematics** boxes (6.EE.4-5)
	6.EE.6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	**6.EE.6-**	**6.EE.6** **Illustrative Mathematics** Pennies to heaven
	6.EE.7. 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.	**6.EE.7-** 11.1, 11.2	**6.EE.7** **Illustrative Mathematics** Firefighter Allocation, Morning Walk, Anna in D.C., Fruit Salad
	6.EE.8. 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.	**6.EE.8-** 11.4	**6.EE.8** **Illustrative Mathematics** Fishing Adventures 1 **Mathematics Assessment Project** Interpreting Equations, Evaluating Statements About Number

			Operations FAL (6.EE.5-8)
Represent and analyze quantitative relationships between dependent and independent variables.	6.EE.9.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 independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.	**6.EE.9-** 12.2, 12.3, 12.4	**6.EE.9** **Illustrative Mathematics** Chocolate Bar Sales **Inside Mathematics** gym, tuffles (6.EE.6 and 9) **Mathematics Assessment Project** Modeling: Car Skid Marks FAL (6.EE.9)
$(s/a)^2$ Solve real-world and mathematical problems involving area, surface area, and volume.	6.G.1. 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. 6.G.2. 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 $V = l\ w\ h$ and $V = b\ h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. 6.G.4. 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.	**6.G.1- 13.1, 13.2, 13.3, 13.4** **6.G.2- 15.2, 15.3** **6.G.4- 15.1**	

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GRADE 6 – UNIT 4
Geometry and Statistics and Probability

Critical Area: Description of the critical area: Building on and reinforcing their understanding of number, students begin to develop their ability to think statistically. Students recognize that a data distribution may not have a definite center and that different ways to measure center yield different values. The median measures center in the sense that it is roughly the middle value. The mean measures center in the sense that it is the value that each data point would take on if the total of the data values were redistributed equally, and also in the sense that it is a balance point. Students recognize that a measure of variability (interquartile range or mean absolute deviation) can also be useful for summarizing data because two very different sets of data can have the same mean and median yet be distinguished by their variability.

Students learn to describe and summarize numerical data sets, identifying clusters, peaks, gaps, and symmetry, considering the context in which the data were collected. Students in Grade 6 also build on their work with area in elementary school by reasoning about relationships among shapes to determine area, surface area, and volume. They find areas of right triangles, other triangles, and special quadrilaterals by decomposing these shapes, rearranging or removing pieces, and relating the shapes to rectangles. Using these methods, students discuss, develop, and justify formulas for areas of triangles and parallelograms. Students find areas of polygons and surface areas of prisms and pyramids by decomposing them into pieces whose area they can determine. They reason about right rectangular prisms with fractional side lengths to extend formulas for the volume of a right rectangular prism to fractional side lengths. They prepare for work on scale drawings and constructions in Grade 7 by drawing polygons in the coordinate plane.

CLUSTERS	COMMON CORE STATE STANDARDS	GO MATH	ADDITIONAL RESOURCES
Develop understanding of statistical variability.	6.SP.1. Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. *For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.*	**6.SP.1-**	**6.SP.1** **Illustrative Mathematics** Buttons: Statistical Questions, Identifying Statistical Questions
	6.SP.2. 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.	**6.SP.2-**	**6.SP.2** **Illustrative Mathematics** Puppy Weights, Electoral College
	6.SP.3. Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	**6.SP.3-**	**Mathematics Assessment Project** Mean, Median, Mode, and Range FAL (6.SP.1-4)
Summarize and describe distributions.	6.SP.4. Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	**6.SP.4-** 16.3, 16.4, 16.5	**6.SP.4** **Illustrative Mathematics** Puppy Weights, Puzzle Times
	6.SP.5. Summarize numerical data sets in relation to their context, such as by:	**6.SP.5-** 16.1, 16.2	

	a. Reporting the number of observations. b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. c. 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. d. 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.		**6.SP.5.c** **Illustrative Mathematics** Puzzle Times **6.SP.5.d** **Illustrative Mathematics** Electoral College **Inside Mathematics** baseball players **Mathematics Assessment Project** Representing Data Using Grouped, Frequency Graphs and Box Plots FAL (6.SP)
Solve real-world and mathematical problems involving area, surface area, and volume.	6.G.1. 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.	**6.G.1-** 13.1, 13.2, 13.3, 13.4	**6.G.1** **Illustrative Mathematics** Same Base and Height, Variation 1, Same Base and Height, Variation 2, Finding Areas of Polygons, Base and Height, Polygons in the Coordinate Plane, Sierpinski's Carpet
	6.G.2. 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 $V = l\ w\ h$ and $V = b\ h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	**6.G.2-** 15.2, 15.3	**6.G.2** **Illustrative Mathematics** Computing Volume Progression 1, Computing Volume Progression 4, Banana Bread, Computing Volume Progression 2, Computing Volume Progression 3

			Inside Mathematics building blocks
	6.G.3. 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.	**6.G.3-** 14.2	**6.G.3** **Illustrative Mathematics** Polygons in the Coordinate Plane
	6.G.4. 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.	**6.G.4-** 15.1	**6.G.4** **Illustrative Mathematics** Nets for Pyramids and Prisms **Mathematics Assessment Project** Optimizing: Security Cameras Laws of Arithmetic, Optimizing: Packing It In, Using Coordinates to Interpret and Represent Data, Designing: Candy Cartons FAL (6.G.1-4)