

CURRICULUM MAPPING Math GRADE 6

Unit/Time	CONTENT	SKILLS	ASSESSMENTS	CCMS	VOCABULARY
Unit #1 (2-3 weeks)	Fraction and Decimals	<p><i>Students will be able to ...</i></p> <ul style="list-style-type: none"> • Compute quotients of fractions divided by fractions. (6.NS.1) • Explain the meaning of a quotient determined by division of fractions, using visual fraction models, equations, real-life situations, and language. (6.NS.1) • Divide multi-digit numbers fluently using the standard algorithm. (6.NS.2) Fluently add, subtract, multiply and divide decimals to solve problems. (6.NS.3) <p><i>Students will be able to ...</i></p> <ul style="list-style-type: none"> • Compute quotients of fractions divided by fractions. (6.NS.1) • Explain the meaning of a quotient determined by division of fractions, using visual fraction models, equations, real-life situations, and language. (6.NS.1) • Divide multi-digit numbers fluently using the standard algorithm. (6.NS.2) Fluently add, subtract, multiply and divide decimals to solve problems. (6.NS.3) 	Observation Participation Manipulatives Guided Practice Independent Practice Worksheets Projects Quizzes Tests	<p>Apply and extend previous understandings of multiplication and division to divide fractions by fractions</p> <ul style="list-style-type: none"> ■ 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 $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = ad/bc$.) 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? <p>Compare fluently with multi-digit numbers and find common factors and multiples</p>	<p>Critical Terms:</p> Reciprocal Inverse operation Nets Surface area Compose Decompose

Supplemental Terms:
 Quotient
 Dividend
 Divisor
 Remainder

				<ul style="list-style-type: none">▪ 6.NS.2 Fluently divide multi-digit numbers using the standard algorithm.▪ 6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. <p>Supporting Standards: Solve real-world and mathematical problems involving area, surface area, and volume</p> <ul style="list-style-type: none">▪ 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.4 Represent three-dimensional figures using nets made up of rectangles and triangles. Use the nets to find surface areas of these figures. Apply these techniques in the context of solving real-world and mathematical problems.	
--	--	--	--	--	--

Unit/Time	CONTENT	SKILLS	ASSESSMENTS	CCMS	VOCABULARY
<p>Unit #2 6-7 weeks</p>	<p>Ratios, Rates, and Proportions</p>	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> • Use ratio language to describe a ratio relationship between two quantities. (6.RP.1) • Represent a ratio relationship between two quantities using manipulatives and/or pictures, symbols and real-life situations. (<i>a to b</i>, <i>a:b</i>, or <i>a/b</i>) (6.RP.1) • Represent unit rate associated with ratios using visuals, charts, symbols, real-life situations and rate language. (6.RP.2) • Use ratio and rate reasoning to solve real-world and mathematical problems. (6.RP.3) • Make and interpret tables of equivalent ratios. (6.RP.3) • Plot pairs of values of the quantities being compared on the coordinate plane. (6.RP.3) • Use multiple representations such as tape diagrams, double number line diagrams, or equations to solve rate and ratio problems. (6.RP.3) • Solve unit rate problems (including unit pricing and constant speed). (6.RP.3) • Solve percent problems, including finding a percent of a quantity as a rate per 100 and finding the whole, given the part and the percent. 	<p>Observation Participation Manipulatives Guided Practice Independent Practice Worksheets Projects Quizzes Tests</p>	<p>Understand ratio concepts and use ratio reasoning to solve problems.</p> <ul style="list-style-type: none"> ■ 6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. <i>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.”</i> ■ 6.RP.2 Understand the concept of a unit rate <i>a/b</i> associated with a ratio <i>a:b</i> with $b \neq 0$, and use rate language in the context of a ratio relationship. <i>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.”</i> ■ 6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about 	<p>Critical Terms: Percent Proportion Rate Ratio Rational number Unit Ratio Quantity</p> <p>Supplemental Terms: Tape diagram Double number line Numerator Denominator Equivalent</p>

		<p>(6.RP.3)</p> <ul style="list-style-type: none"> • Use variables to represent two quantities in a real-world problem that change in relationship to one another. (6.EE.9) • 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. (6.EE.9) • Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. (6.EE.9) <p><i>Some students may be ready to:</i> Students will use ratios, rates, unit rates and percent skills:</p> <ul style="list-style-type: none"> • in grade 7 when working with proportional relationships and probability • in geometry and in algebra when studying similar figures and slopes of lines 		<p>tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.</p> <p>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.</p> <p>b) Solve unit rate problems including those involving unit pricing and constant speed. <i>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?</i></p> <p>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</p>	
--	--	--	--	--	--

				<p>whole, given a part and the percent.</p> <p>d) Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p> <p>Represent and analyze quantitative relationships between dependent and independent variables.</p> <ul style="list-style-type: none">■ 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. <i>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</i>	
--	--	--	--	---	--

Unit/Time	CONTENT	SKILLS	ASSESSMENTS	CCMS	VOCABULARY
<p>Unit #3 4-5 Weeks</p>	<p>Rational Numbers</p>	<p><i>Students will be able to ...</i></p> <ul style="list-style-type: none"> • Identify an integer and its opposite and the directions they represent in real-world contexts. (6.NS.5) • Use integers to represent quantities in real-world situations (above/ below sea level) (6.NS.5) • Understand the meaning of 0 and where it fits into a situation(6.NS.5) • Represent and explain the value of a rational number as a point on a number line (6.NS.6) • Recognize that a number line can be both vertical and horizontal (6.NS.6) • Represent a number and its opposite equidistant from zero on a number line. (6.NS.6) • Identify that the opposite of the opposite of the number is itself. (6.NS.6) • Incorporate opposites on the number line or plot opposite points on a coordinate grid where x and y intersect at zero. (6.NS.6) • Represent signs of numbers in ordered pairs as locations in quadrants on the coordinate plane and explain the relationship between the location and the signs. (6.NS.6) 	<p>Observation Participation Manipulatives Guided Practice Independent Practice Worksheets Projects Quizzes Tests</p>	<p><i>relationship between distance and time.</i></p> <p>Apply and extend previous understandings of numbers to the system of rational numbers.</p> <ul style="list-style-type: none"> ■ 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.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. <ul style="list-style-type: none"> a) Recognize opposite 	<p>Critical Terms: Integers Rational numbers Quadrants Line diagrams Absolute value Positive Negative Opposite</p> <p>Supplemental Terms: Coordinate Ordered pairs Input Output x-coordinate y-coordinate x-axis y-axis origin distance</p>

		<ul style="list-style-type: none"> • Represent and explain reflections of ordered pairs on a coordinate plane (6.NS.6) • Locate and position integers and other rational numbers on horizontal or vertical number lines (6.NS.6) • Locate and position integers and other rational numbers on a coordinate plane. (6.NS.6) • Identify the absolute value of a number as the distance from zero (6.NS.7) • Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. (6.NS.7) • Use inequalities to order integers relative to their position on the number line(6.NS.7) • Write statements of order for rational numbers in real-world contexts. (6.NS.7) • Interpret statements of order for rational numbers in real-world contexts. (6.NS.7) • Explain statements of order for rational numbers in real-world contexts. (6.NS.7) • Represent the absolute value of a rational number as the distance from zero and recognize the symbol x. (6.NS.7) • Interpret absolute value as magnitude for a positive or negative quantity in a 		<p>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.</p> <p>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.</p> <p>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.</p> <p>■ 6.NS.7 Understand ordering and absolute value of rational numbers.</p>	
--	--	---	--	---	--

		<p>real-world situation. (6.NS.7)</p> <ul style="list-style-type: none"> • Distinguish comparisons of absolute value from statements about order. (Compare rational numbers using absolute value in real-world situations. For negative numbers, as the absolute values increases, the value of the number decreases.) (6.NS.7) • Solve real-world problems by graphing points in all four quadrants of the coordinate plane (6.NS.8) • Use coordinates to find distances between points with the same first coordinate or the same second coordinate. (6.NS.8) • Use absolute value to find distances between points with the same first coordinate or the same second coordinate. (6.NS.8) • Draw polygons in the coordinate plane given the coordinates for the vertices (6.G.3) • Use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. (6.G.3) <ul style="list-style-type: none"> Solve real-world and mathematical problems involving polygons in the coordinate plane. (6.G.3) <p>Some students may be ready to:</p> <ul style="list-style-type: none"> • Use coordinates and absolute value to find distances between points where the first coordinate or the second coordinate are not the same. 		<ul style="list-style-type: none"> a) Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. <i>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.</i> b) Write, interpret, and explain statements of order for rational numbers in real-world contexts. <i>For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C.</i> 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. <i>For example, for an account balance of -30 dollars, write $-30 = 30$ to describe</i> 	
--	--	--	--	--	--

		<p>Create transformations, such as translations, rotations and reflections based on coordinate shifts.</p>		<p><i>the size of the debt in dollars.</i></p> <p>d) Distinguish comparisons of absolute value from statements about order. <i>For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.</i></p> <ul style="list-style-type: none">■ 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. <p>Solve real-world and mathematical problems involving area, surface area, and volume.</p> <ul style="list-style-type: none">■ 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	
--	--	--	--	---	--

Unit/Time	CONTENT	SKILLS	ASSESSMENTS	CCMS	VOCABULARY
Unit #4 3-4 weeks	Expressions	<p><i>Students will be able to ...</i></p> <ul style="list-style-type: none"> • Write numerical expressions that have whole number exponents. (6.EE.1) • Evaluate numerical expressions that have whole number exponents and rational bases.(6.EE.1) • Write algebraic expressions to represent real life and mathematical situations (6.EE.2) • Identify parts of an expression using appropriate terminology (6.EE.2) • Given the value of a variable, students will evaluate the expression (6.EE.2) • Use order of operations to evaluate expressions. (6.EE.2) • Apply properties of operations to write equivalent expressions. (6.EE.3) • Identify when two expressions are equivalent. (6.EE.4) • Prove (using various strategies) that two equations are equivalent no matter what number is substituted. (6.EE.4) • Identify the factors of any whole number less than or equal to 100. (6.NS.4) 	Observation Participation Manipulatives Guided Practice Independent Practice Worksheets Projects Quizzes Tests	coordinate. Apply these techniques in the context of solving real-world and mathematical problems. Apply previous understandings of arithmetic to algebraic expressions <ul style="list-style-type: none"> ■ 6.EE.1 Write and evaluate numerical expressions involving whole-number exponents. ■ 6.EE.2 Write, read and evaluate expressions in which letters stand for numbers. <ol style="list-style-type: none"> a) Write expressions that record operations with numbers and with letters standing for numbers. <i>For example, express the calculation “Subtract y from 5” as $5 - y$.</i> 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 entry. <i>For example, describe the expression 2</i> 	Critical Terms: superscripted numbers equivalent base number coefficient exponents power equation expression variables order of operations Numerical expression Algebraic expression Base Term greatest common factor (GCF) least common multiple (LCM) prime factorization Supplemental Terms: Dividend Divisor Equation Factor Multiplier

		<ul style="list-style-type: none"> Determine the Greatest Common Factor of two or more whole numbers less than or equal to 100. (6.NS.4) Identify the multiples of two whole numbers less than or equal to 12 and determine the Least Common Multiple. (6.NS.4) <ul style="list-style-type: none"> 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. (6.NS.4) <p><i>Some students may be ready to:</i></p> <ul style="list-style-type: none"> Understand that the properties of operations hold for integers, rational, and real numbers. Use the properties of operations to rewrite equivalent numerical expressions using non-negative rational numbers. Use variables to represent real-world situations and use the properties of operations to generate equivalent expressions for these situations. Experience expressions for amounts of increase and decrease. Use substitution to understand that expressions are equivalent. <ul style="list-style-type: none"> Solve complex problems involving expressions. 		<p><i>(8 + 7) as a product of two factors; view (8 + 7) as both as single entity and a sum of two terms.</i></p> <p>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). <i>For example, use the formulas $V = S^3$ and $A = 6^2$ to find the volume and surface area of a cube with sides of lengths $s = 1/2$.</i></p> <ul style="list-style-type: none"> 6.EE.3 Apply the properties of operations to generate equivalent expressions. <i>For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the</i> 	<p>Product Quotient Sum associative property commutative property distributive property identity property</p>
--	--	---	--	---	---

				<p><i>expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.</i></p> <ul style="list-style-type: none">▪ 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). <i>For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for.</i> <p>Compare fluently with multi-digit numbers and find common factors and multiples.</p> <ul style="list-style-type: none">▪ 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. <i>For</i>	
--	--	--	--	---	--

				example, express $36 + 8$ as $4(9 + 2)$.	
--	--	--	--	---	--

Unit/Time	CONTENT	SKILLS	ASSESSMENTS	CCMS
Unit #5 (4-5 weeks)	Equations and Inequalities	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> Recognize that solving an equation or inequality is a process of answering a question: which values from a specified set, if any, make the equation or inequality true? (6.EE.5) Determine whether a given number in a specified set makes an equation or inequality true with substitution. (6.EE.5) Write variable expressions when solving a mathematical problem or real-world problem, recognizing that a variable can represent an unknown number or any number in a specified set (6.EE.6) 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) Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a mathematical problem or a real-world problem. (6.EE.8) Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions. (6.EE.8) Represent solutions of inequalities on number line diagrams. (6.EE.8) 	Observation Participation Manipulatives Guided Practice Independent Practice Worksheets Projects Quizzes Tests	<p>Reason about and solve one-variable equations and inequalities.</p> <ul style="list-style-type: none"> 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 and explain substitution in order to determine whether a given number in a specified set makes an equation or inequality true. 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.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.8 Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-

		<p><i>Some students may be ready to...</i></p> <ul style="list-style-type: none"> • Use properties of operations to create equivalent numerical expressions. • Solve multi-step problems using rational numbers with expressions, equations and inequalities. • Compare word problems and develop solution strategies by comparing the variable and number relationships in the situations. • Recognize that multiplying or dividing an inequality by a negative number reverses the order of the comparison, hence the changes in what is positive or negative. 		<p>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.</p> <ul style="list-style-type: none"> ▪
Unit/Time	CONTENT	SKILLS	ASSESSMENTS	CCMS
<p>Unit #6 (3-4 weeks)</p>	<p>Geometry</p>	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> • Given irregular figures, students will be able to divide the shape into triangles and rectangles (6.G.1) • Given a polygon, students will find the area using the decomposing shapes. (6.G.1) • Given a polygon students will calculate the area by decomposing into composite figures (triangles and rectangles). (6.G.1) • 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. (6.G.2) • Calculate the volume of a right rectangular prism. (6.G.2) • Apply the formula to solve real world 	<p>Observation Participation Manipulatives Guided Practice Independent Practice Worksheets Projects Quizzes Tests</p>	<p>Solve real-world and mathematical problems involving area, surface area, and volume.</p> <ul style="list-style-type: none"> ▪ 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

		<p>mathematical problems involving volume with fractional edge lengths. (6.G.2)</p> <ul style="list-style-type: none"> • Represent 3D figures using nets of triangles and rectangles. (6.G.4) • Solve real world problems involving surface areas using nets. (6.G.4) <p><i>Some students may be ready to...</i></p> <ul style="list-style-type: none"> • Derive formulas for volume of pyramids and non-rectangular prisms. 		<p>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.</p> <ul style="list-style-type: none"> ▪ 6.G.4 Represent three-dimensional figures using nets made up of rectangles and triangles. Use the nets to find surface areas of these figures. Apply these techniques in the context of solving real-world and mathematical problems.
Unit/Time	CONTENT	SKILLS	ASSESSMENTS	CCMS
Unit #7 (2-3 weeks)	Statistics	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> • Identify statistical questions. (6.SP.1) • Determine if questions anticipate variability in the data related to the question and account for it in the answers. (6.SP.1) • Represent a set of data collected to answer a statistical question and describe it by its center, spread, and overall shape. (6.SP.2) • Represent and explain the difference between measures of center and measures of variability. (6.SP.3) • Display numerical data in plots on a number line. (6.SP.4) • Display numerical data in dot plots. (6.SP.4). • Display numerical data in histograms. (6.SP.4) • Display numerical data in box plots. (6.SP.4) • Use language to summarize numerical data 	<p>Observation Participation Manipulatives Guided Practice Independent Practice Worksheets Projects Quizzes Test</p>	<p>Develop understanding of statistical variability</p> <ul style="list-style-type: none"> ▪ 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. <i>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.</i> ▪ 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.3 Recognize that a measure of center for a numerical data set summarizes all of its values with a

		<p>sets in relation to their context. (6.SP.5)</p> <ul style="list-style-type: none"> • Report the number of observations. (6.SP.5) • Describe the nature of the attribute under investigation. (6.SP.5) • Give quantitative measures of center and variability 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. (6.SP.5) • Relate 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) <p><i>Some students may be ready to...</i></p> <ul style="list-style-type: none"> • Examine and compare measures of center and variability for random samples. 		<p>single number, while a measure of variation describes how its values vary with a single number.</p> <p>Summarize and describe distributions</p> <ul style="list-style-type: none"> ▪ 6.SP.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots. ▪ 6.SP.5 Summarize numerical data sets in relation to their context, such as by: <ul style="list-style-type: none"> 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. ▪ 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.
Unit/Time	CONTENT	SKILLS	ASSESSMENTS	CCMS
Unit #8 (1-2 weeks)	Formulas and Graphs	<p><i>Students will be able to ...</i></p> <ul style="list-style-type: none"> • Define independent and dependent variables. (6.EE.9) 	<p>Observation Participation Manipulatives</p>	<p>Represent and analyze quantitative relationships between dependent and independent variables.</p>

		<ul style="list-style-type: none"> • Use variables to represent two quantities in a real-world problem that change in relationship to one another. (6.EE.9) • 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. (6.EE.9) • Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. (6.EE.9) • Solve real-world problems by graphing points in all four quadrants of the coordinate plane. (6.NS.8) • Use coordinates to find distances between points with the same first coordinate or the same second coordinate. (6.NS.8) • Use absolute value to find distances between points with the same first coordinate or the same second coordinate. (6.NS.8) • Display numerical data in plots on a number line, dot plots, histograms and box plots. (6.SP.4) • Calculate the volume of a right rectangular prism. (6.G.2) • Apply the formula to solve real world mathematical problems involving volume with fractional edge lengths. (6.G.2) <p><i>Some students may be ready to...</i></p> <ul style="list-style-type: none"> • Find relationships between two quantities and the equation as related to work with functions. • Construct and describe the relationships between geometrical figures and solve problems with volume fluently. 	<p>Guided Practice Independent Practice Worksheets Projects Quizzes Tests</p>	<ul style="list-style-type: none"> ■ 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. <i>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.</i> <p>Apply and extend previous understandings of numbers to the system of rational numbers.</p> <ul style="list-style-type: none"> ■ 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. <p>Summarize and describe distributions.</p> <ul style="list-style-type: none"> ■ 6.SP.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots. <p>Solve real-world and mathematical</p>
--	--	---	---	--

				<p>problems involving area, surface area, and volume.</p> <ul style="list-style-type: none"> 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 $V = lwh$ and $V = bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
--	--	--	--	---

Unit/Time	CONTENT	SKILLS	ASSESSMENTS	CCMS	VOCABULARY
<p>Unit #1 (4-5 weeks)</p> <p><i>*August through September</i></p>	<p>Ratios and Proportionality</p>	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> • Compute unit rates involving rational numbers, fractions, and complex fractions. (7.RP.1) • Compute ratios of length in like or different units. (7.RP.1) • Compute ratios of area and other measurements in like or different units. (7.RP.1) • Determine whether two quantities are in a proportional relationship by using a table and or graph. (7.RP.2) • Identify the constant of proportionality (unit rate) in tables, graphs, diagrams, and verbal descriptions. (7.RP.2) • Create and solve equations to represent proportional relationships. (7.RP.2) • Use words to describe the location of a 	<p>Observation Participation Manipulative Guided Practice Independent Practice Worksheets Projects Quizzes Tests</p>	<p>Analyze proportional relationships and use them to solve real-world and mathematical problems</p> <ul style="list-style-type: none"> 7.RP.1 Compute unit rates associates with rations of fractions, including ratios of lengths, areas, and other quantities measured in like or different units. <i>For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction $\frac{1/2}{1/4}$ miles per hour, equivalently 2 miles per hour.</i> 7.RP.2 Recognize and represent proportional relationships between quantities. <ul style="list-style-type: none"> 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 	<p>Critical Terms:</p> <p>Simple Interest Percent increase Percent decrease Commission Percent error Rate of change Gratuity</p> <p>Supplemental Terms:</p>

		<p>point on a graph and its relationship to the origin. (7.RP.2)</p> <ul style="list-style-type: none"> Explain what a point on a graph of a proportional relationship means in terms of the situation. (how does the one quantity relate to the other) (7.RP.2) <p><i>Some students may be ready to...</i></p> <ul style="list-style-type: none"> Analyze proportional relationships and use them to solve real-world and mathematical problems. (Compute unit rates. Recognize, represent and explain proportional relationships using tables, graphs, equations, diagrams and verbal descriptions. Use proportional relationships to solve multi-step ratio and percent problems.) (7.RP.1-3) Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. (7.NS.1-3) Apply properties of operations as strategies to add, subtract, factor and expand linear expressions with rational coefficients. (7.EE.1) Solve real-life and mathematical problems using numerical and algebraic expressions and equations. (7.EE.3-4) 		<p>through the origin.</p> <p>b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p> <p>c. Represent proportional relationships by equations. <i>For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$.</i></p> <p>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.</p>	<p>Tax Tip Ratio Rate Proportion Percent Unit rate Equivalency Greatest Common Factor (GCF) Least Common Multiple (LCM)</p>
Unit/Time	CONTENT	SKILLS	ASSESSMENTS	CCMS	VOCABULARY
<p>Unit #2 (2-3 weeks) September</p>	<p>Ratio and Proportion Applications</p>	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> Solve multi-step ratio and percent problems. (7.RP.3) Solve problems involving simple interest and tax. (7.RP.3) 	<p>Observation Participation Manipulatives Guided Practice</p>	<p>Analyze proportional relationships and use them to solve real-world and mathematical problems.</p> <ul style="list-style-type: none"> 7. RP.3 Use proportional relationships to solve multi-step ratio and percent 	<p>Critical Terms: Ratio Proportion Percent increase</p>

-October		<ul style="list-style-type: none"> Solve problems involving markups and markdowns, gratuities and commissions, and fees. (7.RP.3) Solve problems involving percent increase, percent decrease, and percent (margin of) error. (7.RP.3) Solve problems involving scale drawings of geometric figures. (7.G.1) Compute actual lengths and areas from a scale drawing. (7.G.1) Reproduce a scale drawing at a different scale. (7.G.1) <p><i>Some students may be ready to...</i></p> <ul style="list-style-type: none"> Understand the connections between proportional relationships to interpret unit rate as the slope of the graph (8.EE.5) Proportional relationships can be applied to solve congruence and similarity applications. (8.G.2) 	<p>Independent Practice Worksheets Projects Quizzes Tests</p>	<p>problems. <i>Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.</i></p> <p>Draw, construct, and describe geometrical figures and describe the relationships between them.</p> <ul style="list-style-type: none"> 7.G.1 Solve problems involving scale drawing of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing in a different scale. 	<p>Percent decrease Percent error Markdowns Markups Scale</p> <p>Supplemental Terms: Tax Gratuity Area Volume Simple interest equivalent</p>
Unit/Time	CONTENT	SKILLS	ASSESSMENTS	CCMS	VOCABULARY