

6th Grade Math												
130 days	Unit 1: 20 days	Unit 2: 15 days		Unit 3: 25 days	Unit 4: 35 days			Unit 5: 20 days			Unit 6: 15 days	
Unit Name	Ratios and Unit Rates	Arithmetic Operations Including Dividing by a Fraction		Rational Numbers	Expressions and Equations			Area, Surface Area, and Volume Problems			Statistics	
Domain	Understand ratio concepts and use ratio reasoning to solve problems.	Apply and extend previous understandings of multiplication and division to divide fractions by fractions.	Compute fluently with multi-digit numbers and find common factors and multiples	Apply and extend previous understandings of numbers to the system of rational numbers.	Apply and extend previous understandings of arithmetic to algebraic expressions.	Reason about and solve one-variable equations and inequalities	Represent and analyze quantitative relationships between dependent and independent variables	Apply and extend previous understandings of arithmetic to algebraic expressions	Reason about and solve one-variable equations and inequalities	Solve real-world and mathematical problems involving area, surface area, and volume.	Develop understanding of statistical variability.	Summarize and describe distributions.
Duration	20 days	5 days	10 days	25 days	20 days	10 days	5 days	5 days	5 days	10 days	10 days	5 days
I Can Statements	I Can Statements	I Can Statements		I Can Statements	I Can Statements			I Can Statements			I Can Statements	
	<b>6.RP.1</b> I can write a ratio as a comparison of two quantities and represent these comparisons.	6.NS.1 I can solve word problems involving division of fractions by fractions,	6.NS.2 I can divide multi-digit numbers.	6.NS.5 I can use positive and negative numbers to represent quantities in a real-world context	<b>6.EE.1</b> I can write and evaluate numerical expressions involving whole-number exponents.	6.EE.5 I can substitute numbers to find out if a given number in a specified set makes an equation or inequality true.	6.EE.9 I can use variables to represent quantities in a real-world problem that change in relation to each other. I can analyze the relationship between variables using graphs and tables and can relate them to the equation.	6.EE.2 Write, read, and evaluate expressions in which letters stand for numbers	<b>6.EE.6</b> 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.	<b>6.G.1</b> I can find the area of 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.SP.1 I can recognize a statistical question as one that anticipates variability in the answers.	<b>6.SP.4</b> I can display numerical data in plots on a number line, including dot plots, histograms, and box plots
	6.RP.2 I can express a unit rate using appropriate vocabulary.	<b>6.NS.3</b> I can add, subtract, multiply, and divide multi-digit decimals.	<b>6.NS.4</b> I can 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 with a common factor as a multiple.	6.NS.6 I can represent positive and negative numbers as points on a number line and on a coordinate plane.	6.EE.2 I can write, read, and evaluate expressions in which letters stand for numbers	6.EE.6 I can use variables to represent numbers and write expressions when solving problems.		6.EE.2c 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 $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = \frac{1}{2}$ .	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	<b>6.G.2</b> I can 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, I can apply the formulas $V = lwh$ and $V = bh$ to find volumes of right rectangular prisms.	<b>6.SP.2</b> I can describe the distribution of a set in terms of center, spread, and overall shape	6.SP.5 I can summarize numerical data sets in relation to their context,
	6.RP.3 I can use ratios and rates reasoning to solve problems,			6.NS.6a I can recognize that opposite signs of numbers indicate locations on opposite sides of 0 on a number line.	<b>6.EE.2a</b> I can write expressions that record operations with numbers and with letters standing for numbers.	6.EE.7 I can solve equations of the form $x + p = q$ and $px = q$ for case in which $p$ , $q$ , and $x$ are all nonnegative rational numbers				6.G.3 I can draw polygons in the coordinate plane given coordinates for the vertices; I can use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate.	6.SP.3 I can explain between a measure of center and a measure of variation for a set of data.	6.SP.5a I can summarize numerical data sets by reporting the number of observations.
	<b>6.RP.3a</b> I can make and use tables of equivalent ratios.			<b>6.NS.6b</b> I can recognize that when two ordered pairs differ only by signs, the locations of the points are reflected across one or both axes.	<b>6.EE.2b</b> I can identify parts of an expression using mathematical terms.	6.EE.8 I can write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a problem. I can represent solutions of inequalities on number lines.				6.G.4 I can represent three-dimensional figures using nets of the figure. I can 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.SP.5b I can summarize numerical data sets by describing the nature of the attribute under investigation,
	6.RP.3b I can solve unit rate problems including those involving unit pricing and constant speed.			6.NS.6c I can find and position integers and other rational numbers on a number line and a coordinate plane	6.EE.2c I can evaluate expressions at specific values of their variables. I can perform operations in the conventional order when there are no parentheses to specify a particular order.							6.SP.5c. 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.

	6.RP.3c I can solve problems that involve finding a percent.			6.NS.7 I can understand ordering and absolute value of rational numbers	6.EE.3 I can apply the properties to generate equivalent expressions							6.SP.5d. 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.RP.3d I can use ratio reasoning to convert measurement units.			6.NS.7a I can use inequalities to understand the relative position of two numbers on a number line.	6.EE.4 I can identify when two expressions are equivalent							
				6.NS.7b I can use rational numbers in real-world contexts.								
				6.NS.7c I can understand the absolute value as magnitude for a positive or negative quantity in a real-world situation.								
				6.NS.7d I can distinguish comparisons of absolute value from statements about order.								
				6.NS.8 I can solve problems by graphing points in all four quadrants of the coordinate plane.								
<b>MO Learning Standards</b>	<b>MO Learning Standards</b>	<b>MO Learning Standards</b>		<b>MO Learning Standards</b>	<b>MO Learning Standards</b>			<b>MO Learning Standards</b>			<b>MO Learning Standards</b>	
	<b>6.RP.1 Understand a ratio as a comparison of two quantities and represent these comparisons.</b>	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?	6.NS.2 Fluently divide multi-digit numbers using the standard algorithm	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.	<b>6.EE.1 Write and evaluate numerical expressions involving whole-number exponents</b>	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.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.2 Write, read, and evaluate expressions in which letters stand for numbers	<b>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.</b>	<b>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.</b>	<b>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</b>	6.SP.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots

<p>6.RP.2 Understand the concept of a unit rate <math>a/b</math> associated with a ratio <math>a:b</math> with <math>b \neq 0</math>, 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 <math>3/4</math> cup of flour for each cup of sugar." "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger."</p>			<p><b>6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.</b></p>	<p><b>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.</b></p>	<p>6.EE.2 Write, read, and evaluate expressions in which letters stand for numbers.</p>	<p>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</p>		<p>6.EE.2c 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 <math>V = s^3</math> and <math>A = 6s^2</math> to find the volume and surface area of a cube with sides of length <math>s = 1/2</math>.</p>	<p><b>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</b></p>	<p><b>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 lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas <math>V = lwh</math> and <math>V = bh</math> to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.</b></p>	<p>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</p>	<p>6.SP.5 Summarize numerical data sets in relation to their context, such as by: 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.</p>
<p>6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems,</p>			<p><b>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 <math>36 + 8</math> as <math>4(9 + 2)</math></b></p>	<p>6.NS.6a Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., <math>-(-3) = 3</math>, and that 0 is its own opposite</p>	<p><b>6.EE.2a Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation "Subtract y from 5" as <math>5 - y</math>.</b></p>	<p>6.EE.7 Solve real-world and mathematical problems by writing and solving equations of the form <math>x + p = q</math> and <math>px = q</math> for cases in which p, q, and x are all nonnegative rational numbers.</p>			<p>6.EE.7 Solve real-world and mathematical problems by writing and solving equations of the form <math>x + p = q</math> and <math>px = q</math> for cases in which p, q, and x are all nonnegative rational numbers</p>	<p>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.</p>	<p>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</p>	
<p>6.RP.3a 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>6.NS.6b 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.</b></p>	<p><b>6.EE.2b 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 <math>2(8 + 7)</math> as a product of two factors; view <math>(8 + 7)</math> as both a single entity and a sum of two terms.</b></p>	<p>6.EE.8 Write an inequality of the form <math>x &gt; c</math> or <math>x &lt; c</math> to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form <math>x &gt; c</math> or <math>x &lt; c</math> have infinitely many solutions; represent solutions of such inequalities on number line diagrams</p>				<p>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.</p>		

	<p>6.RP.3b 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?</p>			<p>6.NS.6c 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.EE.2c 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 <math>V = s^3</math> and <math>A = 6s^2</math> to find the volume and surface area of a cube with sides of length <math>s = \frac{1}{2}</math>.</p>							
	<p>6.RP.3c 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>6.NS.7 Understand ordering and absolute value of rational numbers</p>	<p>6.EE.3 Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression <math>3(2 + x)</math> to produce the equivalent expression <math>6 + 3x</math>; apply the distributive property to the expression <math>24x + 18y</math> to produce the equivalent expression <math>6(4x + 3y)</math>; apply properties of operations to <math>y + y + y</math> to produce the equivalent expression <math>3y</math>.</p>							
	<p>6.RP.3d Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p>			<p>6.NS.7a Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret <math>-3 &gt; -7</math> as a statement that <math>-3</math> is located to the right of <math>-7</math> on a number line oriented from left to right.</p>	<p>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 <math>y + y + y</math> and <math>3y</math> are equivalent because they name the same number regardless of which number <math>y</math> stands for</p>							
				<p>6.NS.7b Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write <math>-3^\circ\text{C} &gt; -7^\circ\text{C}</math> to express the fact that <math>-3^\circ\text{C}</math> is warmer than <math>-7^\circ\text{C}</math></p>								
				<p>6.NS.7c 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 <math>-30</math> dollars, write <math> -30  = 30</math> to describe the size of the debt in dollars.</p>								

				6.NS.7d 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.								