

Course Information

Grade(s):	6
Discipline/Course:	Mathematics
Course Title:	Math 6
Prerequisite(s):	Math 5
Course Description: <i>Program of Studies</i>	<p>In the Math 6 course, the instructional time should focus on five critical areas: (1) completing understanding of division of fractions; (2) connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems, which includes negative numbers; (3) writing, interpreting, and using expressions and equations; (4) extending the concept of area to surface area and volume; and (5) developing understanding of statistical thinking.</p> <ol style="list-style-type: none"> 1. 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 understanding of numbers 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. 2. 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. 3. 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

	<p>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.</p> <ol style="list-style-type: none"> 4. 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. 5. 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.
Course Essential Questions:	<ul style="list-style-type: none"> ● How do patterns and functions help us describe data and physical phenomena and solve a variety of problems? ● How are quantitative relationships represented by numbers?

	<ul style="list-style-type: none"> • How do geometric relationships and measurements help us to solve problems and make sense of our world? • How can collecting, organizing and displaying data help us analyze information and make reasonable and informed decisions?
Course Enduring Understandings:	<p>Insights learned from exploring generalizations through the essential questions. (Students will understand that...)</p> <ul style="list-style-type: none"> • Patterns and functional relationships can be represented and analyzed using a variety of strategies, tools, and technologies. • Quantitative relationships can be expressed numerically in multiple ways in order to make connections and simplify calculations using a variety of strategies, tools and technologies. • Shapes and structures can be analyzed, visualized, measured and transformed using a variety of strategies, tools, and technologies. • Data can be analyzed to make informed decisions using a variety of strategies, tools, and technologies.
Duration:	One year
Course Materials/Resources:	EdGems Course 1

Grade Six Standards for Mathematical Practice

The K-12 Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. This page gives examples of what the practice standards look like at the specified grade level. Students are expected to:

Standards	Explanations and Examples
1. Make sense of problems and persevere in solving them.	In grade 6, students solve problems involving ratios and rates and discuss how they solved them. Students solve real world problems through the application of algebraic and geometric concepts. Students seek the meaning of a problem and look for efficient ways to represent and solve it. They may check their thinking by asking themselves, “What is the most efficient way to solve the problem?”, “Does this make sense?”, and “Can I solve the problem in a different way?”.
2. Reason abstractly and quantitatively.	In. grade 6, students represent a wide variety of real world contexts through the use of real numbers and variables in mathematical expressions, equations, and inequalities. Students contextualize to understand the meaning of the number or variable as related to the problem and decontextualize to manipulate symbolic representations by applying properties of operations
3. Construct viable arguments and critique the reasoning of others.	In grade 6, students construct arguments using verbal or written explanations accompanied by expressions, equations, inequalities, models, and graphs, tables, and other data displays (i.e. box plots, dot plots, histograms, etc.). They further refine their mathematical communication skills through mathematical discussions in which they critically evaluate their own thinking and the thinking of other students. They pose questions like “How did you get that?”, “Why is that true?” “Does that always work?” They explain their thinking to others and respond to others’ thinking.
4. Model with mathematics.	In grade 6, students model problem situations symbolically, graphically, tabularly, and contextually. Students form expressions, equations, or inequalities from real world contexts and connect symbolic and graphical representations. Students begin to explore covariance and represent two quantities simultaneously. Students use number lines to compare numbers and represent inequalities. They use measures of center and variability and data displays (i.e. box plots and histograms) to draw inferences about and make comparisons between data sets.

	Students need many opportunities to connect and explain the connections between the different representations. They should be able to use all of these representations as appropriate to a problem context.
5. Use appropriate tools strategically.	Students consider available tools (including estimation and technology) when solving a mathematical problem and decide when certain tools might be helpful. For instance, students in grade 6 may decide to represent similar data sets using dot plots with the same scale to visually compare the center and variability of the data. Additionally, students might use physical objects or applets to construct nets and calculate the surface area of three-dimensional figures.
6. Attend to precision.	In grade 6, students continue to refine their mathematical communication skills by using clear and precise language in their discussions with others and in their own reasoning. Students use appropriate terminology when referring to rates, ratios, geometric figures, data displays, and components of expressions, equations or inequalities.
7. Look for and make use of structure.	Students routinely seek patterns or structures to model and solve problems. For instance, students recognize patterns that exist in ratio tables recognizing both the additive and multiplicative properties. Students apply properties to generate equivalent expressions (i.e. $6 + 2x = 3(2 + x)$ by distributive property) and solve equations (i.e. $2c + 3 = 15$, $2c = 12$ by subtraction property of equality), $c=6$ by division property of equality). Students compose and decompose two- and three-dimensional figures to solve real world problems involving area and volume.
8. Look for and express regularity in repeated reasoning.	In grade 6, students use repeated reasoning to understand algorithms and make generalizations about patterns. During multiple opportunities to solve and model problems, they may notice that $a/b \div c/d = ad/bc$ and construct other examples and models that confirm their generalization. Students connect place value and their prior work with operations to understand algorithms to fluently divide multi-digit numbers and perform all operations with multi-digit decimals. Students informally begin to make connections between covariance, rates, and representations showing the relationships between quantities.

Academic Expectations

The Fairfield Public Schools describe a variety of cross curricular expectations that all students should exemplify during their time within the schooling experience. This page gives examples of what the practice standards look like at the specified grade level. Students are expected to:

Standards	Explanations	Example
1. Exploring and Understanding [MP1]	When students engage in problem solving situations, they should be able to understand the problem, determine relevant information, and ask relevant additional questions.	Students should be able to answer the following questions when approaching a problem: <ol style="list-style-type: none"> 1. Do you understand all the words used in stating the problem? 2. What are you asked to find or show? 3. Can you restate the problem in your own words? 4. Can you think of a picture or diagram that might help you understand the problem?
2. Synthesizing and Evaluating	Engaging in a problem solving situation, students should be able to analyze the most efficient approach, and reflect on the process used to solve the problem.	Students should be able to answer the following questions when analyzing how to approach a problem, and also reflect on the result: <ol style="list-style-type: none"> 1. Is there enough information to enable you to find a solution? If not, what additional information is needed? 2. Are there multiple ways to complete the task? Which approach do you think is most efficient, and why? 3. Do you know a related problem? Look at the unknown and try to think of a familiar problem having the same or similar unknown. Can you use it? 4. Was your strategy effective? What worked? What didn't? 5. Was there another approach that could have been more efficient? 6. Is your answer reasonable? How do you know? 7. Was your presentation approach effective? If not, what would you change? 8. How did the communication tools allow you to get the message across to the intended audience?

3. Creating and Constructing	Engaged in a problem solving situation, students should implement a plan.	Students should be able to answer the following question to implementing their plan to solve a problem: 1. What strategy will you use to complete the task?
4. Conveying Ideas	Students should be able to use correct mathematical language, logically display their work for the desired problem.	Students should be able to answer the following questions to convey their mathematical thinking to solve a problem: 1. How will you present your information to your intended audience? 2. Does your response illustrate the correct terms and work to the problem?
5. Using Communication Tools	Students should be able to choose the correct tools to illustrate their mathematical work to solve a specific problem.	Students should be able to answer the following question to use specific communication tools to solve a problem: 1. If applicable, what communication tools will you use to convey your ideas and solution?
6. Collaborating Strategically	Students should be able to work collaboratively to solve problems.	Students should be able to answer the following question to collaboratively solve problems: 1. In what ways did you work together to help solve the desired problem?

Unit and Title:	Unit 1: Ratios and Rates
Resource(s):	EdGems Course 1: Unit 1
Learning Goals	
Standard(s):	<p>6.RP.1 (Major Standard) Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.</p> <p>6.RP.2 (Major Standard) 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.</p> <p>6.RP.3 (Major Standard) 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.</p> <ol style="list-style-type: none"> 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. b. Solve unit rate problems including those involving unit pricing and constant speed. c. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.
Essential Question(s):	<ul style="list-style-type: none"> ● What is a ratio? ● What is a rate? ● What models can be used to visualize ratios and rates? ● What is a unit rate? ● How can we write and compare rates?
Enduring Understanding(s):	<ul style="list-style-type: none"> ● Reasoning with ratios involves attending to and coordinating two quantities. ● A ratio is a multiplicative comparison of two quantities, or is it a joining of two quantities in a composed unit.

	<ul style="list-style-type: none"> ● A number of mathematical connections link ratios and fractions. ● Ratios can be meaningfully reinterpreted as quotients. ● A proportion is a relationship of equality between two ratios. In a proportion, the ratio of two quantities remains constant as the corresponding values of the quantities change.
Learning Goal(s): <i>Students will be able to use their learning to:</i>	<ol style="list-style-type: none"> 1. Simplify and write ratios three ways. 2. Create ratios that represent the same value 3. Use equivalent rates to solve problems 4. Compare rates to solve problems 5. Convert measurements within systems and between systems

Unit Number and Title:	Unit 2: Multi Digit Operations
Resource(s):	EdGems Course 1: Unit 2
Learning Goals	
Standard(s):	<p>6.NS.2 (Additional Standard) Fluently divide multi-digit numbers using the standard algorithm.</p> <p>6.NS.3 (Additional Standard) Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.</p> <p>6.NS.4 (Additional Standard) 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.</p>
Essential Question(s):	<ul style="list-style-type: none"> • What algorithms allow you to fluently perform multi digit operations?
Enduring Understanding(s):	<ul style="list-style-type: none"> • Rational numbers allow us to make sense of situations that involve numbers that are not whole. • A general algorithm exists for dividing decimals. This algorithm is broadly applicable and reasonably efficient.
Learning Goal(s): <i>Students will be able to use their learning to:</i>	<ol style="list-style-type: none"> 1. Find sums and differences involving decimals 2. Find products of expressions involving decimals 3. Find quotients of expressions of whole numbers divided by 1-digit numbers 4. Find quotients of expressions of whole numbers divided by multi-digit whole numbers 5. Find quotients of expressions involving decimals 6. Find the greatest common factor and the least common multiple of two whole numbers
Unit Number and Title:	Unit 3: Percents

Resource(s):	EdGems Course 1: Unit 3
Learning Goals	
Standard(s):	6.RP.3c (Major Standard) 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. c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity);
Essential Question(s):	<ul style="list-style-type: none"> ● How can you represent rational numbers in different forms? ● What does a percent mean? ● How can you connect percentages and ratios?
Enduring Understanding(s):	<ul style="list-style-type: none"> ● Reasoning with ratios involves attending to and coordinating two quantities. ● A ratio is a multiplicative comparison of two quantities, or is it a joining of two quantities in a composed unit. ● A number of mathematical connections link ratios and fractions. ● Ratios can be meaningfully reinterpreted as quotients. ● A proportion is a relationship of equality between two ratios. ● In a proportion, the ratio of two quantities remains constant as the corresponding values of the quantities change.
Learning Goal(s): <i>Students will be able to use their learning to:</i>	<ol style="list-style-type: none"> 1. Write percents as fractions and decimals 2. Write fractions and decimals as percents 3. Find the percent of a number 4. Solve problems involving discounts and markups

Unit Number and Title:	Unit 4: Fractions Operations
Resource(s):	EdGems Course 1: Unit 4
Learning Goals	
Standard(s):	6.NS.1 (Major Standard) 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.
Essential Question(s):	<ul style="list-style-type: none"> ● How can we divide a fraction by a fraction? ● How can you create a visual model of the multiplication and division of fractions?
Enduring Understanding(s):	<ul style="list-style-type: none"> ● Rational numbers allow us to make sense of situations that involve numbers that are not whole.
Learning Goal(s): <i>Students will be able to use their learning to:</i>	<ol style="list-style-type: none"> 1. Multiply fractions using models and the algorithm. 2. Use models to divide fractions 3. Find quotients of expressions involving two fractions 4. Find products and quotients of expressions that include mixed numbers

Unit Number and Title:	Unit 5: Expressions
Resource(s):	EdGems Course 1: Unit 5
Learning Goals	
Standard(s):	<p>6.EE.1 (Major Standard) Write and evaluate numerical expressions involving whole-number exponents.</p> <p>6.EE.2 (Major Standard) Write, read, and evaluate expressions in which letters stand for numbers.</p> <ol style="list-style-type: none"> a) Write expressions that record operations with numbers and with letters standing for numbers. 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. 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). <p>6.EE.3 (Major Standard) Apply the properties of operations to generate equivalent expressions.</p> <p>6.EE.4 (Major Standard) Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).</p> <p>6.EE.6 (Major Standard) 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.NS.4 (Additional Standard) 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.</p>
Essential	<ul style="list-style-type: none"> • How can we apply the order of operations to evaluating algebraic expressions?

Question(s):	<ul style="list-style-type: none"> • How can we use the properties of algebra to simplify expressions?
Enduring Understanding(s):	<ul style="list-style-type: none"> • Expressions are foundational for Algebra; they serve as building blocks for work with equations and functions. • Variables are tools for expressing mathematical ideas clearly and concisely. They have many different meanings, depending on the context and purpose.
Learning Goal(s): <i>Students will be able to use their learning to:</i>	<ol style="list-style-type: none"> 1. Write and compute expressions with powers. 2. Find values of expressions using the order of operations 3. Write expressions involving variables. 4. Evaluate algebraic expressions 5. Recognize and combine like terms to generate equivalent expressions 6. Use the Distributive Property to perform calculations and simplify expressions

Unit Number and Title:	Unit 6: One Variable Equations
Resource(s):	EdGems Course 1: Unit 6
Learning Goals	
Standard(s):	<p>6.EE.5 (Major Standard) 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..</p> <p>6.EE.7 (Major Standard) 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.</p> <p>6.RP.3c (Major Standard) 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.</p> <p style="padding-left: 40px;">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</p>
Essential Question(s):	<ul style="list-style-type: none"> ● How can you determine if a value is a solution to an equation? ● How do you balance an equation to solve for a variable? ● What are inverse operations? ● How can we use an algebraic equation to solve percent problems?
Enduring Understanding(s):	<ul style="list-style-type: none"> ● The equal sign indicates that two expressions are equivalent. It can also be used in defining or naming a single expression or function rule. ● A general algorithm exists for solving linear equations. This algorithm is broadly applicable and reasonably efficient.
Learning Goal(s):	<ol style="list-style-type: none"> 1. Determine if a number is a solution of an equation

Students will be able to use their learning to:

2. Solve equations involving addition and subtraction
3. Solve equations involving multiplication and division
4. Solve percent equations.

Unit Number and Title:	Unit 7: Rational Numbers and The Coordinate Plane
Resource(s):	Ed Gems Course 1: Unit 7
Learning Goals	
Standard(s):	<p>6.EE.5 (Major Standard) 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.</p> <p>6.EE.8 (Major Standard) 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.</p> <p>6.NS.5 (Major Standard) 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.</p> <p>6.NS.6 (Major Standard) 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.</p> <ul style="list-style-type: none"> 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.

	<p>6.NS.7 (Major Standard) Understand ordering and absolute value of rational numbers.</p> <ol style="list-style-type: none"> Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. Write, interpret, and explain statements of order for rational numbers in real-world contexts. 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. Distinguish comparisons of absolute value from statements about order. <p>6.NS.8 (Major Standard) 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> <p>6.G.3 (Supporting Standard) 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>
Essential Question(s):	<ul style="list-style-type: none"> When do we use positive and negative numbers to describe situations? What is absolute value? How do we compare and order positive and negative numbers? How can we graph points on a coordinate plane? How do ordered pairs represent a location on a coordinate plane
Enduring Understanding(s):	<ul style="list-style-type: none"> Integers are useful for noting relative changes or values.
Learning Goal(s):	<ol style="list-style-type: none"> Compare and order integers and use integers to represent real-world situations

Students will be able to use their learning to:

2. Order and compare rational numbers
3. Write inequalities and display the solution on a graph.
4. Graph points on the coordinate plane
5. Use properties of quadrilaterals to solve problems on a coordinate plane

Unit Number and Title:	Unit 8: Two Variable Equations
Resource(s):	Ed Gems Course 1: Unit 8
Learning Goals	
Standard(s):	<p>6.EE.9 (Major Standard) 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.</p> <p>6.NS.8 (Major Standard) 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>
Essential Question(s):	<ul style="list-style-type: none"> ● How can we organize a series of inputs and outputs within a table? ● How can we write equations when given a table, graph, or situation? ● How can we translate an equation to a graph? ● What are independent and dependent variables?
Enduring Understanding(s):	<ul style="list-style-type: none"> ● Linear equations can be solved by symbolic, graphical, and numerical methods; on some occasions and in some contexts, one solution method may be more elegant, efficient, or informative than others.
Learning Goal(s): <i>Students will be able to use their learning to:</i>	<ol style="list-style-type: none"> 1. Create input-output tables for equations with two variables 2. Write equations for tables, graphs and contextual situations 3. Graph a two-variable equation on a coordinate plane.

Unit Number and Title:	Unit 9: Area and Volume
Resource(s):	Ed Gems Course 1: Unit 9
Learning Goals	
Standard(s):	<p>6.G.1 (Supporting Standard) 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.</p> <p>6.G.2 (Supporting Standard) 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.</p> <p>6.G.4 (Supporting Standard) 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.NS.3 (Additional Standard) Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.</p> <p>6.EE.7 (Major Standard) 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.</p>
Essential Question(s):	<ul style="list-style-type: none"> ● How can we find the area of 2D shapes? ● How can you find the volume of 3D shapes with decimal or fraction side lengths? ● How can you determine missing dimensions of a figure when given the area or volume?

Enduring Understanding(s):	<ul style="list-style-type: none"> ● Representation of geometric ideas and relationships allows multiple approaches to geometric problems and connects geometric interpretations to other contexts. ● Area represents the space enclosed by a 2-dimensional figure. ● Volume represents the space enclosed by a 3-dimensional object.
Learning Goal(s): <i>Students will be able to use their learning to:</i>	<ol style="list-style-type: none"> 1. Calculate areas of polygons with side lengths that are fractions 2. Calculate areas and perimeters of polygons with side lengths that are decimals 3. Find the areas of composite figures by breaking them down into known shapes 4. Draw nets for solids and find the surface area of a solid using a net 5. Find the volume of rectangular prisms

Unit Number and Title:	Unit 10 - Statistics
Resource(s):	Ed Gems Course 1: Unit 10
Learning Goals	
Standard(s):	<p>6.SP.1 (Additional Standard) Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.</p> <p>6.SP.2 (Additional Standard) 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.3(Additional Standard) 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.SP.4 (Additional Standard) Display numerical data in plots on a number line, including dot plots, histograms, and box plots.</p> <p>6.SP.5 (Additional Standard) Summarize numerical data sets in relation to their context, such as by:</p> <ol 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. 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.

Essential Question(s):	<ul style="list-style-type: none"> ● What is a statistical question? ● What are the different ways we can present data? ● How do we interpret data? ● How do we analyze data?
Enduring Understanding(s):	<ul style="list-style-type: none"> ● Statistics are a useful way to find the meaning behind the data.
Learning Goal(s): <i>Students will be able to use their learning to:</i>	<ol style="list-style-type: none"> 1. Identify statistical questions as well as different types of data 2. Find measures of center and range 3. Make, read and interpret dot plots 4. Make, read and interpret histograms 5. Make, read and interpret box-and-whisker plots. 6. Analyze how characteristics of a data set affect the measures of center 7. Find and use mean absolute deviation to describe the spread of a data set