**Class Title: 6th Grade Math
Grade Level: Math**

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| Nine Weeks: 1st Nine WeeksUnit 1 CCSS: Fractions and Decimals |
| Concepts/Content | Desired Outcomes |
| *Students will be able to…*  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)  |

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| **Apply and extend previous understandings of multiplication and division to divide fractions by fractions**

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| **Compare fluently with multi-digit numbers and find common factors and multiples****Solve real-world and mathematical problems involving area, surface area, and volume** |

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**Class Title: 6th Grade Math
Grade Level: Math**

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| Nine Weeks: 1st Nine WeeksUnit 2 CCSS: Ratios, Rates, and Proportions |
| Concepts/Content | Desired Outcomes |
| Students will be able to…  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. (*a to b,* a:b, or a/b) (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. (6.RP.3) 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)  |

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|  | **Understand ratio concepts and use ratio reasoning to solve problems.** **Represent and analyze quantitative relationships between dependent and independent variables.**  |
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**Class Title: 6th Grade Math
Grade Level: Math**

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| Nine Weeks: 2nd Nine WeeksUnit 3 CCSS: Rational Numbers |
| Concepts/Content | Desired Outcomes |
| **Skills**: *Students will be able to …* 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) 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 real-world situation. (6.NS.7) 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) Solve real-world and mathematical problems involving polygons in the coordinate plane. (6.G.3)  |

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| **Apply and extend previous understandings of numbers to the system of rational numbers.** **Solve real-world and mathematical problems involving area, surface area, and volume.**  |

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**Class Title: 6th Grade Math
Grade Level: Math**

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| Nine Weeks: 2nd Nine WeeksUnit 4 CCSS: Expressions |
| Concepts/Content | Desired Outcomes |
| **Skills**: *Students will be able to …* 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) 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) 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)  |

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 | **Apply previous understandings of arithmetic to algebraic expressions**  |
|  | **Compare fluently with multi-digit numbers and find common factors** **and multiples.**  |
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**Class Title: 6th Grade Math
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| Nine Weeks: 3rd Nine WeeksUnit 5 CCSS: Equations and Inequalities |
| Concepts/Content | Desired Outcomes |
| **Skills**: *Students will be able to …*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) |

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| **Reason about and solve one-variable equations and inequalities.**  |

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**Class Title: 6th Grade Math
Grade Level: Math**

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| Nine Weeks: 3rd Nine WeeksUnit 6 CCSS: Geometry |
| Concepts/Content | Desired Outcomes |
| **Skills**: *Students will be able to …* 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 mathematical problems involving volume with fractional edge lengths. (6.G.2) Represent 3D figures using nets of triangles and rectangles. (6.G.4) Solve real world problems involving surface areas using nets. (6.G.4)  |

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| **Solve real-world and mathematical problems involving area, surface area, and volume.**  |
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**Class Title: 6th Grade Math
Grade Level: Math**

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| Nine Weeks: 4th Nine WeeksUnit 7 CCSS: Statistics |
| Concepts/Content | Desired Outcomes |
| **Skills**: *Students will be able to …* 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 sets in relation to their context. (6.SP.5) 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)  |

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| **Develop understanding of statistical variability**  |
| **Summarize and describe distributions** **Understand ratio concepts and use ratio reasoning to solve problems**  |

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**Class Title: 6th Grade Math
Grade Level: Math**

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| Nine Weeks: 4th Nine WeeksUnit 8 CCSS: Formula and Graphs |
| Concepts/Content | Desired Outcomes |
| **Skills**: *Students will be able to …* Define independent and dependent variables. (6.EE.9) 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)  |

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| **Represent and analyze quantitative relationships between dependent and independent variables.** **Apply and extend previous understandings of numbers to the system of rational numbers.** **Summarize and describe distributions.** **Solve real-world and mathematical problems involving area, surface area, and volume.** **Solve real-world and mathematical problems involving area, surface area, and volume.**  |

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