**Class Title: 7th Grade Math
Grade Level: 7th**

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| Nine Weeks: 1stUnit: CCSS Unit 1: Ratios and Proportionality |
| Concepts/Content | Desired Outcomes |
| 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 point on a graph and its relationship to the origin. (7.RP.2)  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)  | Analyze proportional relationships and use them to solve real-world and mathematical problems. |

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| Nine Weeks: 1stUnit: CCSS Unit 2: Ratio and Proportion Application |
| Concepts/Content | Desired Outcomes |
| Solve multi-step ratio and percent problems. (7.RP.3) Solve problems involving simple interest and tax. (7.RP.3) 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)  | **Analyze proportional relationships and use them to solve real-world and mathematical problems.** **Draw, construct, and describe geometrical figures and describe the relationships between them.**  |

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| Nine Weeks: 2nd Unit: CCSS Unit 3: Rational Number Operations |
| Concepts/Content | Desired Outcomes |
| Add and subtract rational numbers. (7.NS.1)  Represent addition and subtraction on a horizontal or vertical number line diagram. (7.NS.1) Use words, visuals, and symbols to describe situations in which opposite quantities combine to make 0. (7.NS.1) Represent addition of quantities with symbols, visuals, and words by showing positive or negative direction from one quantity to the other. (7.NS.1) Show that a number and its opposite have a sum of 0 using visuals, symbols, words, and real-world contexts. (7.NS.1)  Use the term “additive inverse” to describe 2 numbers whose sum is zero. (7.NS.1) Use commutative, distributive, associative, identity, and inverse properties to add and subtract rational numbers. (7.NS.1) Use the term “absolute value” to describe the distance from zero on number line diagram and with symbols. (7.NS.1) Multiply and divide rational numbers. (7.NS.2) Use the distributive property to multiply positive and negative rational numbers using symbols, visuals, words, and real-life contexts (7.NS.2)Interpret products of rational numbers by describing real-world contexts. (7.NS.2) Identify situations when integers can and cannot be divided. (7.NS.2) Use words and real-world contexts to explain why the quotient of two integers is a rational number. (7.NS.2) Identify and apply properties used when multiplying and dividing rational numbers. (7.NS.2) Convert a rational number to a decimal using long division. (7.NS.2) Identify terminating or repeating decimal representations of rational numbers. (7.NS.2) Solve real-world and mathematical problems involving the four operations with rational numbers. (7.NS.3) | **Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.**  |

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| Nine Weeks: 2nd Unit: CCSS Unit 4: Expressions |
| Concepts/Content | Desired Outcomes |
| Use Commutative, Associative, Distributive, Identity, and Inverse Properties to add and subtract linear expressions with rational coefficients. (7.EE.1) Use Commutative, Associative, Distributive, Identity, and Inverse Properties to factor and expand linear expressions with rational coefficients. (7.EE.1) Rewrite an expression in a different form. (7.EE.2) Choose the form of an expression that works best to solve a problem. (7.EE.2) Explain your reasoning for the choice of expression used to solve a problem. (7.EE.2)  | **Use properties of operations to generate equivalent expressions**  |

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| Nine Weeks: 3rd Unit: CCSS Unit 5: Equations |
| Concepts/Content | Desired Outcomes |
| Use commutative, associative, distributive, identity, and inverse properties to calculate with numbers in any form (whole numbers, fractions and decimals). (7.EE.3)  Convert between rational number forms (whole numbers, fractions and decimals) to solve problems as appropriate. (7.EE.3)  Solve multi-step mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. (7.EE.3)  Solve multi-step real-life problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. (7.EE.3) Use mental computation and estimation strategies to assess the reasonableness of the answer. (7.EE.3) Translate words or real-life situations into variable equations. (7.EE.4) Translate words or real-life situations into variable inequalities. (7.EE.4) Solve one- or two-step equations with rational numbers fluently. (7.EE.4) Solve word problems leading to one- or two-step equations with rational numbers. (7.EE.4) Construct simple equations and inequalities with rational numbers to solve problems. (7.EE.4) Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. (7.EE.4)  Solve word problems leading to one- or two-step inequalities with rational numbers. (7.EE.4) Graph the solution set of inequalities and interpret it in the context of the problem. (7.EE.4) Know the formulas for the area and circumference of a circle. (7.G.4) Use the formulas for area and circumference of a circle to solve problems. (7.G.4) Informally, derive the area formula for a circle based on circumference. (7.G.4)  | **Solve real-life and mathematical problems using numerical and algebraic expressions and equations.** **Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.**  |

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| Nine Weeks: 3rd Unit: CCSS Unit 6: Data Distributions |
| Concepts/Content | Desired Outcomes |
| Recognize and identify that different sampling techniques must be used in real life situations, because it is very difficult to survey an entire population. (7.SP.1) Select appropriate sample sizes based on a population in real-life situations and explain why generalizations about a population from a sample are valid only if the sample is random and representative of that population. (7.SP.1) Collect data from a sample population in order to predict information about a population. (7.SP.1)  Interpret data from a random sample to draw inferences about a population with an unknown characteristic of interest. (7.SP.2) Generate multiple samples (or simulated samples) of the same size to determine the variation in estimates or predictions by comparing the samples. (7.SP.2) Identify the degree of overlap between two numerical sets of data. (7.SP.3)  Visually compare two numerical data distributions with like ranges. (7.SP.3) Measure the difference between the centers of two different data distributions and express this difference as a multiple of a measure of variability. (7.SP.3) Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.  | **Use random sampling to draw inferences about a population.** **Draw informal comparative inferences about two populations**  |

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| Nine Weeks: 4thUnit: CCSS Unit 8: Geometric Measure |
| Concepts/Content | Desired Outcomes |
| Use freehand, ruler, protractor and technology to draw geometric shapes with given conditions. (7.G.2) Construct triangles from 3 measures of angles or sides. (7.G.2)  Given conditions, determine what and how many type(s) of triangles are possible to construct. (7.G.2) Describe the two-dimensional figures that result from slicing three-dimensional figures (right rectangular prisms and right rectangular pyramids). (7.G.3)  Identify and describe supplementary, complementary, vertical, and adjacent angles. (7.G.5)  Use understandings of supplementary, complementary, vertical and adjacent angles to write and solve equations. (7.G.5)  Explain (verbally and in writing) the relationships between the angles formed by two intersecting lines. (7.G.5) Solve mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. (7.G.6) Solve real-world problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms (7.G.6) | **Draw, Construct, and describe geometrical figures and describe the relationships between them.** **Solve real-life and mathematical problems in involving angle measure, area, surface area, and volume.**  |

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| Nine Weeks: 4thUnit: CCSS Unit 7: Probability |
| Concepts/Content | Desired Outcomes |
| Represent the probability of a chance event as a number between 0 and 1. (7.SP.5) Use the terms “likely”, “unlikely,” to describe the probability represented by the fractions used. (7.SP.5) Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency. (7.SP.6) Predict the approximate relative frequency of a chance event given the probability. (7.SP.6) Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. (7.SP.7) Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. (7.SP.7) Compare probabilities from a model to observed frequencies. (7.SP.7) If the agreement between a model and observed frequencies is not good, explain possible sources of the discrepancy. (7.SP.7) Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. (7.SP.8) Represent the probability of a compound event as the fraction of outcomes in the sample space for which the compound event occurs. (7.SP.8) Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. (7.SP.8)  For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event. (7.SP.8) Design and use a simulation to generate frequencies for compound events. (7.SP.8)  | **Investigate chance processes and develop, use and evaluate probability models.**  |