Enduring Understandings	Essential Questions	Indicators
Real numbers are either rational or irrational.	Why use exponents?	6.8.5.4 model and apply the rules of exponents.
		6.8.5.5 multiply and divide by powers of ten.
	How are roots and powers related?	6.8.5.2 describe the relationship between roots and powers.
		6.8.5.3 calculate powers and square roots of numbers.
		6.8.7.1 estimate powers and square roots to solve problems.
		2.8.2.1 use the Pythagorean Theorem to solve problems by determining length of the missing side of a right triangle.
	What kinds of numbers make up the set of real numbers?	6.8.7.3 select and apply mathematical properties to solve problems with real numbers.
	How do operations with rational numbers compare to operations with integers?	6.8.5.1 add, subtract, multiply, and divide with rational numbers.
		6.8.1.1 determine which representation of a rational number is appropriate for a given situation.
Proportional situations involve multiplicative relationships.	What kinds of questions can be answered using proportional reasoning?	6.8.7.2 apply the concepts of ratios, rates, unit rates, and percents to real-world problems, including rate of increase/decrease, discount, commission, sales tax, and simple interest.
		3.8.4.1 use proportions, rates, and scale drawings to solve problems.

Enduring Understandings	Essential Questions	Indicators
Graphical representations and statistical measures influence interpretations and predictions about data.	How can the results of a statistical investigation be used to support an argument?	4.8.1.1 design, conduct, analyze, and communicate the results of a statistical experiment.
		4.8.2.1 organize and display data, with and without technology, using a variety of displays.
		4.8.3.1 analyze and interpret distributions of data by using a number of different methods.
		4.8.4.1 analyze the relationship between mean, median, mode, and range of a data set.
		4.8.5.1 evaluate arguments that are based on data analysis for accuracy and validity.
The interaction of events affects probability.	How do compound events affect probability?	5.8.1.1 distinguish between permutations and combinations.
		5.8.1.2 apply the Fundamental Counting Principle to solve problems.
		5.8.2.1 find the probability of an event that does not have equally likely outcomes.
		5.8.2.2 find the probability of dependent and independent events using various methods, including constructing a sample space.
		5.8.3.1 predict the probability of compound events based on the outcomes of an actual event or a simulation.

Enduring Understandings	Essential Questions	Indicators
Patterns and relationships can be represented graphically, numerically, symbolically, and verbally.	Why are equations and inequalities useful?	6.8.6.1 explain and apply number relationships using the mathematical properties of operations, including the distributive property and the additive and multiplicative inverses.
		1.8.2.1 combine like terms in variable expressions.
		1.8.3.1 solve linear equations and inequalities in one variable using mathematical properties.
	Why are patterns and relationships represented in multiple ways?	1.8.1.2 determine whether functions are discrete or continuous.
		1.8.4.1 represent quantitative relationships graphically and interpret the meaning of a specific part of a graph in the situation represented by the graph.
		1.8.1.1 use written, oral, and symbolic language to identify and describe patterns, sequences, and functions.
Linear relationships are characterized by a constant rate of change.	What makes a relationship linear?	1.8.5.1 verify that points lie on a line, given an equation of the line.
		1.8.3.2 solve problems involving direct and inverse variation.
		1.8.3.3 determine the rate of change (slope) of a linear function when represented graphically, numerically, or algebraically.
	Why are linear functions useful?	1.8.5.2 graph linear equations on a coordinate plane.
		4.8.3.3 fit a line to a set of data and make a prediction about the data.
		4.8.3.2 make predictions about a set of data given the line of best fit.

Enduring Understandings	Essential Questions	Indicators
Constructions are based on properties of the geometric figures.	How are geometric properties used to construct geometric figures?	2.8.3.1 use a compass and straightedge to construct triangles and rectangles.
Geometric figures can change size and/or position while maintaining proportional attributes.	How is proportionality of geometric figures used to solve problems?	2.8.4.1 graph plane figures that are similar to a given figure (dilations).
		2.8.5.1 apply the properties of equality and proportionality to solve problems involving congruent and similar figures.
Relationships exist among the angles, sides, lengths, perimeters, areas, and volumes of geometric figures.	How are interior angles, exterior angles and number of sides of a polygon related?	2.8.2.2 find measures of interior and exterior angles of a triangle.
		2.8.1.1 determine the sum of the measures of interior angles of polygons by partitioning into triangles.
Selection of standard measurement tools and units depend on the real world situation.	How are one, two and three-dimensional measures related?	2.8.1.2 apply the properties of two- and three-dimensional figures to solve problems.
		3.8.3.1 determine relationships among length, area, and volume and describe how a change in one measure affects the others.
		3.8.2.1 estimate conversions between units of the same measurement system to solve problems.