Common Core Standard	Eligible Content
CC.2.1.8.E.1 Distinguish between rational and irrational numbers using their properties.	**Eligible Content - A1.1.1.1.1 Compare and/or order any real numbers. Note: Rational and irrational may be mixed.** **Eligible Content - A1.1.1.1.2 Simplify square roots (e.g., √24 = 2√6).** **Eligible Content - M08.A-N.1.1.1 Determine whether a number is rational or irrational. For rational numbers, show that the decimal expansion terminates or repeats (limit repeating decimals to thousandths).** **Eligible Content - M08.A-N.1.1.2 Convert a terminating or repeating decimal to a rational number (limit repeating decimals to thousandths).**
CC.2.1.8.E.4 Estimate irrational numbers by comparing them to rational numbers.	**Eligible Content - A1.1.1.1.1 Compare and/or order any real numbers. Note: Rational and irrational may be mixed.** **Eligible Content - M08.A-N.1.1.3 Estimate the value of irrational numbers without a calculator (limit whole number radicand to less than 144). Example: √5 is between 2 and 3 but closer to 2.** **Eligible Content - M08.A-N.1.1.4 Use rational approximations of irrational numbers to compare and order irrational numbers.** **Eligible Content - M08.A-N.1.1.5 Locate/identify rational and irrational numbers at their approximate locations on a number line.**
CC.2.2.8.B.1 Apply concepts of radicals and integer exponents to generate equivalent expressions.	**Eligible Content - A1.1.1.3.1 Simplify/evaluate expressions involving properties/laws of exponents, roots, and/or absolute values to solve problems. Note: Exponents should be integers from –10 to 10.** **Eligible Content - M08.B-E.1.1.1 Apply one or more properties of integer exponents to generate equivalent numerical expressions without a calculator (with final answers expressed in exponential form with positive exponents). Properties will be provided. Example: 3^12 x 3^-15 = 3^-3 = 1/(3^3)** **Eligible Content - M08.B-E.1.1.2 Use square root and cube root symbols to represent solutions to equations of the form x^2 = p and x^3 = p, where p is a positive rational number. Evaluate square roots of perfect squares (up to and including 12^2) and cube roots of perfect cubes (up to and including 5^3) without a calculator. Example: If x^2 = 25 then x = ±√25.** **Eligible Content - M08.B-E.1.1.3 Estimate very large or very small quantities by using numbers expressed in the form of a single digit times an integer power of 10 and express how many times larger or smaller one number is than another. Example: Estimate the population of the United States as 3 × 10^8 and the**

	population of the world as 7 × 10^9 and determine that the world population is more than 20 times larger than the United States' population. **Eligible Content - M08.B-E.1.1.4 Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Express answers in scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology (e.g., interpret 4.7EE9 displayed on a calculator as 4.7 × 10^9).**
CC.2.2.8.B.2 Understand the connections between proportional relationships, lines, and linear equations.	**Eligible Content - A1.2.1.2.2 Translate from one representation of a linear function to another (i.e., graph, table, and equation).** **Eligible Content - M08.B-E.2.1.1 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. Example: Compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.** **Eligible Content - M08.B-E.2.1.2 Use similar right triangles to show and explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane.** **Eligible Content - M08.B-E.2.1.3 Derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.**
CC.2.2.8.B.3 Analyze and solve linear equations and pairs of simultaneous linear equations.	**Eligible Content - A1.1.2.1.1 Write, solve, and/or apply a linear equation (including problem situations).** **Eligible Content - A1.1.2.2.1 Write and/or solve a system of linear equations (including problem situations) using graphing, substitution, and/or elimination. Note: Limit systems to two linear equations.** **Eligible Content - A1.1.2.2.2 Interpret solutions to problems in the context of the problem situation. Note: Limit systems to two linear equations.** **Eligible Content - M08.B-E.3.1.1 Write and identify linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).** **Eligible Content - M08.B-E.3.1.2 Solve linear equations that have**

	rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. **Eligible Content - M08.B-E.3.1.3 Interpret solutions to a system of two linear equations in two variables as points of intersection of their graphs because points of intersection satisfy both equations simultaneously.** **Eligible Content - M08.B-E.3.1.4 Solve systems of two linear equations in two variables algebraically and estimate solutions by graphing the equations. Solve simple cases by inspection. Example: 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.** **Eligible Content - M08.B-E.3.1.5 Solve real-world and mathematical problems leading to two linear equations in two variables. Example: Given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.**
CC.2.2.8.C.1 Define, evaluate, and compare functions.	**Eligible Content - A1.1.2.1.1 Write, solve, and/or apply a linear equation (including problem situations).** **Eligible Content - A1.2.1.1.2 Determine whether a relation is a function, given a set of points or a graph.** **Eligible Content - A1.2.1.2.1 Create, interpret, and/or use the equation, graph, or table of a linear function.** **Eligible Content - A1.2.1.2.2 Translate from one representation of a linear function to another (i.e., graph, table, and equation).** **Eligible Content - M08.B-F.1.1.1 Determine whether a relation is a function.** **Eligible Content - M08.B-F.1.1.2 Compare properties of two functions, each represented in a different way (i.e., algebraically, graphically, numerically in tables, or by verbal descriptions). Example: Given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.** **Eligible Content - M08.B-F.1.1.3 Interpret the equation y = mx + b as defining a linear function whose graph is a straight line; give examples of functions that are not linear.**
CC.2.2.8.C.2 Use concepts of functions to model relationships between quantities.	**Eligible Content - A1.1.2.1.3 Interpret solutions to problems in the context of the problem situation. Note: Linear equations only.** **Eligible Content - A1.2.1.1.1 Analyze a set of data for the**

	existence of a pattern and represent the pattern algebraically and/or graphically. **Eligible Content - A1.2.1.2.2 Translate from one representation of a linear function to another (i.e., graph, table, and equation).** **Eligible Content - A1.2.2.1.3** **Write or identify a linear equation when given** • **the graph of the line** • **2 points on the line, or** • **the slope and a point on a line,** **(Linear equation may be in point-slope, standard and/or slope-intercept form).** **Eligible Content - A1.2.2.1.4 Determine the slope and/or y-intercept represented by a linear equation or graph.**
CC.2.3.8.A.1 Apply the concepts of volume of cylinders, cones, and spheres to solve real-world and mathematical problems.	**Eligible Content - G.2.3.1.2 Calculate the volume of prisms, cylinders, cones, pyramids, and/or spheres. Formulas are provided on a reference sheet.** **Eligible Content - M08.C-G.3.1.1 Apply formulas for the volumes of cones, cylinders, and spheres to solve real-world and mathematical problems. Formulas will be provided.**
CC.2.3.8.A.2 Understand and apply congruence, similarity transformation using various tools.	**Eligible Content - G.1.2.1.1 Identify and/or use properties of triangles.** **Eligible Content - G.1.2.1.4 Identify and/or use properties of regular polygons.** **Eligible Content - G.2.2.1.1 Use properties of angles formed by intersecting lines to find the measures of missing angles.** **Eligible Content - M08.C-G.1.1.1 Identify and apply properties of rotations, reflections, and translations. Example: Angle measures are preserved in rotations, reflections, and translations.** **Eligible Content - M08.C-G.1.1.2 Given two congruent figures, describe a sequence of transformations that exhibits the congruence between them.** **Eligible Content - M08.C-G.1.1.3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.** **Eligible Content - M08.C-G.1.1.4 Given two similar two-**

	dimensional figures, describe a sequence of transformations that exhibits the similarity between them.
CC.2.3.8.A.3 Understand and apply the Pythagorean Theorem to solve problems.	**Eligible Content - G.2.1.1.1 Use the Pythagorean theorem to write and/or solve problems involving right triangles.** **Eligible Content - G.2.1.2.1 Calculate the distance and/or midpoint between two points on a number line or on a coordinate plane.** **Eligible Content - M08.C-G.2.1.1 Apply the converse of the Pythagorean theorem to show a triangle is a right triangle.** **Eligible Content - M08.C-G.2.1.2 Apply the Pythagorean theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. (Figures provided for problems in three dimensions will be consistent with Eligible Content in grade 8 and below.)** **Eligible Content - M08.C-G.2.1.3 Apply the Pythagorean theorem to find the distance between two points in a coordinate system.**
CC.2.4.8.B.1 Analyze and/or interpret bivariate data displayed in multiple representations.	**Eligible Content - A1.2.2.2.1 Draw, identify, find, and/or write an equation for a line of best fit for a scatter plot.** **Eligible Content - M08.D-S.1.1.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative correlation, linear association, and nonlinear association.** **Eligible Content - M08.D-S.1.1.2 For scatter plots that suggest a linear association, identify a line of best fit by judging the closeness of the data points to the line.** **Eligible Content - M08.D-S.1.1.3 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. Example: In a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.**

CC.2.4.8.B.2 Understand that patterns of association can be seen in bivariate data utilizing frequencies.	**Eligible Content - M08.D-S.1.2.1 Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible associations between the two variables. Example: Given data on whether students have a curfew on school nights and whether they have assigned chores at home, is there evidence that those who have a curfew also tend to have chores?**