GRADE 8

Domain	Code	Standard Description	Essential Vocabulary
Expressions and Equations	8.EE.1	Develop, know and apply the properties of integer exponents to generate equivalent numeric and algebraic expressions.	integer, algebraic expression
	8.EE.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 small perfect squares and cube roots of small perfect cubes. Classify radicals as rational or irrational.	square root, cube root, radical
	8.EE.5	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.	slope, proportional relationship
	8.EE.6	Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane. 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.	similar triangles, distinct points, derive, intercepting, origin vertical axis
	8.EE.7	Solve linear equations in one variable. a) Give examples of 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). b) Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	equivalent equations, coefficients, expanding expressions, like terms
Functions	8.F.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, and/or by verbal descriptions).	mapping function, vertical line test
	8.F.4	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x,y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	rate of change, linear function

	8.F.5	Describe qualitatively the functional relationship between two quantities by analyzing a graph (may include where the function is increasing or decreasing, linear or nonlinear, etc.). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	functional relationship
Geometry	8.G.5	Use informal arguments to establish facts about: a) the angle sum and exterior angles of triangles b) the angles created when parallel lines are cut by a transversal c) the angle-angle criterion for similarity of triangles	informal arguments, angle sum, exterior angles, transversal
	8.G.7	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real world and mathematical problems in two and three dimensions	Pythagorean theorem
	8.G.9	Know the formulas for the volume of cones, cylinders and spheres. Use the formulas to solve real world and mathematical problems.	cones, cylinders, spheres, volume formulas
The Number System	8.NS.2	Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (such as π^2).	rational, irrational
Statistics and Probability	8.SP.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 association, linear association, and nonlinear association	scatterplot, bivariate measurement, bivariate data, clustering, outliers