

DUSD Essential Standards for Math Eighth Grade

Arizona 8th Grade Math Standards

*Fluency Standard

Expressions & Equations 29-33%	8.EE.A.1	Understand and apply the properties of integer exponents to generate equivalent numerical expressions.
	8.EE.B.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 $(0, b)$.
	8.EE.C.7*	Fluently solve linear equations and inequalities in one variable. a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solution. 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 and inequalities with rational number coefficients, including solutions that require expanding expressions using the distributive property and collecting like terms.
	8.EE.C.8	Analyze and solve pairs of simultaneous linear equations. a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations including cases of no solution and infinite number of solutions. Solve simple cases by inspection. c. Solve mathematical problems and problems in real-world context leading to two linear equations in two variables.
Functions 21-25%	8.F.A.1	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. (Function notation is not required in Grade 8.)
	8.F.A.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. For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points $(1,1)$, $(2,4)$, and $(3,9)$ which are not on a straight line.
	8.F.B.4	Given a description of a situation, generate 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 a graph. Track how the values of the two quantities change together. Interpret the rate of change and initial value of a linear function in terms of the situation it models, its graph, or its table of values.
	8.F.B.5	Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.
Geometry 17-21%	8.G.A.2	Understand that a two-dimensional figure is congruent to another if one can be obtained from the other by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that demonstrates congruence.
	8.G.A.3	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
	8.G.A.4	Understand that a two-dimensional figure is similar to another if, and only if, one can be obtained from the other by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that demonstrates similarity.
Statistics and Probability 19-27%	8.SP.B.5	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. a. Understand that the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. b. Represent sample spaces for compound events using organized lists, tables, tree diagrams and other methods. Identify the outcomes in the sample space which compose the event. c. Design and use a simulation to generate frequencies for compound events.