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Nevada Academic Content Standards, Grade 8 Alignments to SuccessMaker

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Nevada Academic Content Standards in Mathematics Standards Code	Nevada Academic Content Standards in Mathematics, Grade 8	SuccessMaker Item Description	Item ID
CCSS.Math.Content.8.NS	The Number System		
CCSS.Math.Content.8.NS.A	Know that there are numbers that are not rational, and approximate them by rational numbers.		
CCSS.Math.Content.8.NS.A.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 (e.g., π^2). Example: For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.	Drag rational and irrational values to their correct positions on a number line.	SMMA_LO_02141
CCSS.Math.Content.8.EE	Expressions and Equations		
CCSS.Math.Content.8.EE.A	Work with radicals and integer exponents.		
CCSS.Math.Content.8.EE.A.1	Know and apply the properties of integer exponents to generate equivalent numerical expressions. Example: For example, $3^2 \times (3^{-5}) = (3^{-3}) = 1/3^3 = 1/27$.	Given the scientific notation, determine the standard notation of a number (the power of 10 has an exponent of 1 to 6).	SMMA_LO_01121
CCSS.Math.Content.8.EE.A.3	Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. Example: For 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.	Write very small numbers in scientific notation.	SMMA_LO_02070
		Write very large numbers in scientific notation.	SMMA_LO_02071

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CCSS.Math.Content.8.EE.A.4	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use 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.	Find the missing exponent for a number written in scientific notation (the exponent is 1 to 6).	SMMA_LO_01122
		Given the scientific notation, determine the standard notation of a number (the power of 10 has an exponent of 1 to 6).	SMMA_LO_01121
CCSS.Math.Content.8.EE.B	Understand the connections between proportional relationships, lines, and linear equations.		
CCSS.Math.Content.8.EE.B.5	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. Example: For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.	Graph proportional relationships and interpret the unit rate as the slope of the graph.	SMMA_LO_02073
CCSS.Math.Content.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 b.	Derive the equation y = mx for a line through the origin, and y = mx + b for a line intercepting the vertical axis at b.	SMMA_LO_02076
		Use similar triangles to explain why the slope m is the same between any two distinct points on a nonvertical line in the coordinate plane.	SMMA_LO_02075

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CCSS.Math.Content.8.EE.C	Analyze and solve linear equations and pairs of simultaneous linear equations.		
CCSS.Math.Content.8.EE.C.7	Solve linear equations in one variable.		
CCSS.Math.Content.8.EE.C.7a	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).	Transform a given multi-step equation into a simpler form.	SMMA_LO_02079
CCSS.Math.Content.8.EE.C.7b	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	Generate and solve an equation with variables on both sides of the equal sign in a real-world context.	SMMA_LO_02145
		Solve a two-step equation (fractions, multiplication).	SMMA_LO_01850
		Solve a two-step addition problem to find a person-s age in 5 to 20 years from now.	SMMA_LO_01631
		Solve a one-step equation (fractions, multiplication and division).	SMMA_LO_01847
		Solve a two-step equation (integers).	SMMA_LO_01846
		Solve for a two-step equation in context.	SMMA_LO_01638
		Find three consecutive integers when given their sum.	SMMA_LO_01639
		Solve a two-step multiplication and addition problem in context.	SMMA_LO_01633
CCSS.Math.Content.8.EE.C.8	Analyze and solve pairs of simultaneous linear equations.		

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CCSS.Math.Content.8.EE.C.8a	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.	Identify the solution to a system of linear equations by locating the point of intersection on its graph.	SMMA_LO_02080
		Model a real-world problem with a system of linear equations. Then solve it by locating the intersection point of the graphs of the two equations.	SMMA_LO_02134
CCSS.Math.Content.8.EE.C.8b	Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. Example: For example, $3x + 2y = 5$ and $3x + 2y = 6$ have no solution because $3x + 2y$ cannot simultaneously be 5 and 6.	If a system of linear equations has 0 or infinitely many solutions, solve it by inspection. If it has 1 solution, solve it either algebraically or by graphing.	SMMA_LO_02133
CCSS.Math.Content.8.EE.C.8c	Solve real-world and mathematical problems leading to two linear equations in two variables. Example: For 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.	Identify the solution to a system of linear equations by locating the point of intersection on its graph.	SMMA_LO_02080
		Model a real-world problem with a system of linear equations. Then solve it by locating the intersection point of the graphs of the two equations.	SMMA_LO_02134
CCSS.Math.Content.8.F	Functions		
CCSS.Math.Content.8.F.A	Define, evaluate, and compare functions.		

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CCSS.Math.Content.8.F.A.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). Example: For 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.	Identify the rate of change and the y-intercept of two linear functions, one represented in a verbal description, and one represented either graphically or algebraically.	SMMA_LO_02102
CCSS.Math.Content.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. Example: 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.	Derive the equation y = mx for a line through the origin, and y = mx + b for a line intercepting the vertical axis at b.	SMMA_LO_02076
CCSS.Math.Content.8.F.B	Use functions to model relationships between quantities.		
CCSS.Math.Content.8.F.B.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.	Identify the rate of change and the y-intercept of two linear functions, one represented in a verbal description, and one represented either graphically or algebraically.	SMMA_LO_02102

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CCSS.Math.Content.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.	Identify the function that is represented by a table of values (linear and nonlinear).	SMMA_LO_01883
		Determine if a table values represents a linear or nonlinear function.	SMMA_LO_01834
		Identify if an equation is a linear or nonlinear function.	SMMA_LO_01833
		Identify whether graphs are linear or nonlinear.	SMMA_LO_01832
CCSS.Math.Content.8.G	Geometry		
CCSS.Math.Content.8.G.A	Understand congruence and similarity using physical models, transparencies, or geometry software.		
CCSS.Math.Content.8.G.A.3	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	Determine the algebraic expression used to find the coordinates of the image of a figure under a dilation with the origin as the center of dilation.	SMMA_LO_02142
CCSS.Math.Content.8.G.A.4	Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	Identify the figure that is not similar to the others. (simple shapes, counterexample)	SMMA_LO_00649

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CCSS.Math.Content.8.G.A.5	Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. Example: For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.	In a figure in which parallel lines are cut by a transversal, identify the transformations that would line one angle up with another angle. Then, describe the relationship between the two angles.	SMMA_LO_02129
		Arrange statements to write a proof of a fact about either the angle sum or the exterior angle of a triangle.	SMMA_LO_02126
CCSS.Math.Content.8.G.B	Understand and apply the Pythagorean Theorem.		
CCSS.Math.Content.8.G.B.6	Explain a proof of the Pythagorean Theorem and its converse.	Explain a proof of the converse of the Pythagorean Theorem.	SMMA_LO_02132
		Explain a proof of the Pythagorean Theorem.	SMMA_LO_02131
CCSS.Math.Content.8.G.B.8	Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	Given two points on a coordinate grid, draw a right triangle whose hypotenuse connects the two points. Then use the Pythagorean Theorem to find the distance between the two points.	SMMA_LO_02100
CCSS.Math.Content.8.G.C	Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.		
CCSS.Math.Content.8.G.C.9	Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	Use a formula to find the volume of a cylinder.	SMMA_LO_00839
		Use a formula to find the volume of a cone or a sphere.	SMMA_LO_00844