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Tennessee Mathematics Standards 2016, Grade 8 Alignments to SuccessMaker

Providing rigorous intervention
for K-8 learners with unparalleled precision

Tennessee Mathematics Standards Code	Tennessee Mathematics Standards 2016, Grade 8	SuccessMaker Item Description	Item ID
8.NS	The Number System		
8.NS.A	Know that there are numbers that are not rational, and approximate them by rational numbers.		
8.NS.A.2	Use rational approximations of irrational numbers to compare the size of irrational numbers locating them approximately on a number line diagram. Estimate the value of irrational expressions such as π^2.	Drag rational and irrational values to their correct positions on a number line.	SMMA_LO_02141
8.EE	Expressions and Equations		
8.EE.A	Work with radicals and integer exponents.		
8.EE.A.1	Know and apply the properties of integer exponents to generate equivalent numerical expressions.	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
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.	Write very small numbers in scientific notation.	SMMA_LO_02070
		Write very large numbers in scientific notation.	SMMA_LO_02071
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
8.EE.B	Understand the connections between proportional relationships, lines, and linear equations.		
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.	Graph proportional relationships and interpret the unit rate as the slope of the graph.	SMMA_LO_02073
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; know and 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
8.EE.C	Analyze and solve linear equations and systems of two linear equations.		
8.EE.C.7	Solve linear equations in one variable.		
8.EE.C.7.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).	Transform a given multi-step equation into a simpler form.	SMMA_LO_02079

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		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
8.EE.C.7.b	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
8.EE.C.8	Analyze and solve systems of two linear equations.		
8.EE.C.8.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.	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
8.EE.C.8.b	Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection.	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
8.EE.C.8.c	Solve real-world and mathematical problems leading to two linear equations in two variables.	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
8.F	Functions		
8.F.A	Define, evaluate, and compare functions.		
8.F.A.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	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
8.F.A.3	Know and 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.	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
8.F.B	Use functions to model relationships between quantities.		

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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
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
8.G	Geometry		
8.G.A	Understand and describe the effects of transformations on two-dimensional figures and use informal arguments to establish facts about angles.		
8.G.A.2	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
8.G.A.3	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.	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
8.G.B	Understand and apply the Pythagorean Theorem.		
8.G.B.4	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
8.G.B.5	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.		
8.G.B.6	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
8.G.C	Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.		
8.G.C.7	Know and understand 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

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8.SP	Statistics and Probability		
8.SP.B	Investigate chance processes and develop, use, and evaluate probability models		
8.SP.B.4	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. Represent sample spaces for compound events using methods such as organized lists, tables, and tree diagrams. For an event described in everyday language (e.g., 'rolling double sixes'), identify the outcomes in the sample space which compose the event.	Identify the probability of two independent outcomes, and then determine the probability of the combination of the two outcomes occurring simultaneously.	SMMA_LO_01224