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Arkansas Mathematics Curriculum Framework 2016
Grade 8

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for K-8 learners with unparalleled precision

Prepared by Savvas Learning Company, formerly Pearson K12 Learning

Arkansas Standards Codes	Arkansas Mathematics Curriculum Framework 2016 Grade 8	SuccessMaker Item Description	Item ID
AR.Math.Content.8.NS	The Number System		
AR.Math.Content.8.NS.A	Know that there are numbers that are not rational, and approximate them by rational numbers.		
AR.Math.Content.8.NS.A.1	Know that numbers that are not rational are called irrational.		
AR.Math.Content.8.NS.A.1.b	Write a fraction a/b as a repeating decimal.	Fractions and Decimals Targeted Lesson 29: Equivalent Decimals and Fractions	
		Ratios and Equations Targeted Lesson 16: Relating Percents, Decimals, and Fractions	
		Complete the equivalence table by expressing a fraction as a decimal number and a percent (round answer to the nearest hundredth).	SMMA_LO_01822
		Determine the fraction and decimal that represent a model (base-ten blocks, tenths, 0.1 to 0.9).	SMMA_LO_00185
		Identify the division problem that can be used to rewrite a fraction as a decimal.	SMMA_LO_00257
AR.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).	Drag rational and irrational values to their correct positions on a number line.	SMMA_LO_02141

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AR.Math.Content.8.EE	Expressions and Equations		
AR.Math.Content.8.EE.A	Work with radicals and integer exponents.		
AR.Math.Content.8.EE.A.1	Know and apply the properties of integer exponents to generate equivalent numerical expressions using product, quotient, power to a power, or expanded form.	Identify a number not equivalent to four others.	SMMA_LO_01116
AR.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.	Write very small numbers in scientific notation.	SMMA_LO_02070
		Student do operations on scientific notation to compare the speed of planes.	SMMA_LO_02515
		Write very large numbers in scientific notation.	SMMA_LO_02071
AR.Math.Content.8.EE.A.4a	Perform operations with numbers expressed in scientific notation, including problems where both standard form and scientific notation are used.	Student do operations on scientific notation to compare the speed of planes.	SMMA_LO_02515
AR.Math.Content.8.EE.A.4b	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).	Write very small numbers in scientific notation.	SMMA_LO_02070
		Write very large numbers in scientific notation.	SMMA_LO_02071

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AR.Math.Content.8.EE.B	Understand the connections between proportional relationships, lines, and linear equations.		
AR.Math.Content.8.EE.B.5a	Graph proportional relationships, interpreting the unit rate as the slope of the graph.	Students write, graph, and compare two linear functions in order to find the best price for football jerseys.	SMMA_LO_02516
		Graph proportional relationships and interpret the unit rate as the slope of the graph.	SMMA_LO_02073
		Ratios and Equations Targeted Lesson 13: Identifying Proportional Relationships	
		Ratios and Equations Targeted Lesson 14: Graphing Proportional Relationships	
AR.Math.Content.8.EE.B.5b	Compare two different proportional relationships represented in different ways (graphs, tables, equations).	Students write, graph, and compare two linear functions in order to find the best price for football jerseys.	SMMA_LO_02516
		Graph proportional relationships and interpret the unit rate as the slope of the graph.	SMMA_LO_02073
		Students use proportions to calculate their weight on Mars.	SMMA_LO_02513
		Ratios and Equations Targeted Lesson 13: Identifying Proportional Relationships	
		Ratios and Equations Targeted Lesson 14: Graphing Proportional Relationships	

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AR.Math.Content.8.EE.B.6a	Using a non-vertical or non-horizontal line, show why the slope m is the same between any two distinct points by creating similar triangles.	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
AR.Math.Content.8.EE.C	Analyze and solve linear equations and pairs of simultaneous linear equations.		
AR.Math.Content.8.EE.C.7	Solve linear equations in one variable. Note: Students should solve equations with variables on both sides.		
AR.Math.Content.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.	Solve for a or c in (a/b - c/b = d/b (minuends 2/3 to 11/12).	SMMA_LO_00360
		Solve a two-step equation (decimals).	SMMA_LO_01851
		Solve a one-step equation (subtraction).	SMMA_LO_01688
		Solve a two-step multiplication and addition problem in context.	SMMA_LO_01633
		Solve for a, b, or c in a + b + c = d (sums 10 to 19).	SMMA_LO_00335
		Solve for c in a - b = c (minuends 20 to 99, subtrahends 1 to 9, no regrouping).	SMMA_LO_00338
		Solve for a, b, c, or d in a/b ÷ c/d = e/f.	SMMA_LO_00377
		Solve for a or c in a/b + c/b = d/b (sums 2/3 to 11/12).	SMMA_LO_00356
		Solve a one-step equation with decimals in context (addition and subtraction).	SMMA_LO_01799

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		Solve for a or b in a x b = x (products 2 x 20 to 12 x 90, multiples of 10).	SMMA_LO_00366
		Solve for a in a/b = c.	SMMA_LO_01798
		Solve for c in a - b = c (differences 1 to 9).	SMMA_LO_00329
		Represent solutions for one-variable, one-step equations and inequalities on a number line.	SMMA_LO_00357
		Solve for a or b in a + b = c (sums 0 to 9).	SMMA_LO_00330
		Solve a two-step addition problem to find a person-s age in 5 to 20 years from now.	SMMA_LO_01631
		Solve for a or b in a + b = c (sums 10 to 18).	SMMA_LO_00332
		Solve for a or b in a x b = c (products 6 x 2 to 9 x 12).	SMMA_LO_00357
		Solve for a in a + b = c or a - b = c in steps (whole number sums and differences 2 to 20).	SMMA_LO_00379
		Solve a two-step equation (integers).	SMMA_LO_01846
		Solve for a or b in a x b = c (products from 0.2 x 0.6 to 0.9 x 0.9).	SMMA_LO_00369
		Solve for a or b in a ÷ b = c (combinations 0.6 ÷ 0.6 to 0.9 ÷ 0.9).	SMMA_LO_00370
		Solve for a or b in a - b = c (decimals to tenths, regrouping).	SMMA_LO_00368
		Solve a one-step equation (multiplication and division, integers).	SMMA_LO_01800
		Complete the steps to solve for x in a - x = b.	SMMA_LO_00396
		Solve for a or b in a - b = c (decimals to hundredths, regrouping).	SMMA_LO_00374
		Solve for c in a - b = c (differences 1 to 9).	SMMA_LO_00324

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		Solve for a in ba/c = d by multiplying by the reciprocal.	SMMA_LO_01795
		Solve for a or b in a ÷ b = c.	SMMA_LO_00352
		Solve for x in ax = c in steps (products 4 x 4 to 9 x 10).	SMMA_LO_00380
		Solve for a or b in a + b = c (sums 12 to 98).	SMMA_LO_00341
		Solve a one-step equation (integers, multiplication and division).	SMMA_LO_01845
		Solve a two-step equation (fractions, multiplication).	SMMA_LO_01850
		Solve one-step equations (addition and subtraction, fractions).	SMMA_LO_01796
		Complete the steps to solve for a in a ÷ b = c (combinations 4 x 4 to 9 x 10).	SMMA_LO_00381
		Solve for a or b in a x b = c (products from 0.02 x 0.13 to 0.09 x 0.19).	SMMA_LO_00376
		Solve for a in a + b = c (a is from -20 to -1).	SMMA_LO_00388
		Solve for a in a - b = c (differences from -19 to 11).	SMMA_LO_00389
		Solve for x in ax + b = c.	SMMA_LO_00384
		Solve for a or b in a - b = c differences 0 to 9).	SMMA_LO_00331
		Solve a one-step equation (two-digit integers, addition and subtraction).	SMMA_LO_01844
		Solve for a or b in a x b = x (products 2 x 10 to 12 x 12).	SMMA_LO_00363
		Solve for a, b, or c in a/b ÷ c = d/e (combinations to 12 ÷ 12).	SMMA_LO_00375

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		Solve for a or b in a - b = c (minuends 21 to 99, subtrahends 1 to 9, no regrouping).	SMMA_LO_00347
		Rewrite an expression from context by factoring and combining like terms.	SMMA_LO_02150
		Solve for a or b in a ÷ b = c (combinations 6 ÷ 10 to 9 ÷ 12).	SMMA_LO_00361
		Generate and solve an equation with variables on both sides of the equal sign in a real-world context.	SMMA_LO_02145
		Solve for a or b in a + b = c (decimals to hundredths).	SMMA_LO_00373
		Solve for x in -x = a (numbers from -99 to 99).	SMMA_LO_00395
		Solve for a in ba/c = d by multiplying by the reciprocal.	SMMA_LO_00382
		Solve a one-step equation (addition and subtraction, one-digit integers).	SMMA_LO_01801
		Solve for a or b in a + b = c (sums 101 to 199, no regrouping).	SMMA_LO_00345
		Solve for a or b in a + b = c (decimals to tenths, no regrouping).	SMMA_LO_00367
		Solve for a or b in a + b = c (sums 10 to 108).	SMMA_LO_00336
		Solve for a or b in a x b = c (products 1 x 2 to 5 x 9).	SMMA_LO_00351
		Solve for c in a - b = c (minuends 20 to 99, regrouping).	SMMA_LO_00342
		Solve for a or b in a ÷ b = c .	SMMA_LO_00354
		Solve for c in a - b = c (minuends 20 to 99, two-digit subtrahends, no regrouping).	SMMA_LO_00340

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		Solve for a or b in a ÷ b = c (combinations 6 ÷ 20 to 9 ÷ 90, multiples of 10).	SMMA_LO_00365
		Solve for a or c in a/b + c/b = d/b (improper fractions, sums 4/3 to 35/12).	SMMA_LO_00364
		Ratios and Equations Targeted Lesson 27: Writing and Solving Equations from Situations	
		Solve a one-step equation (fractions, multiplication and division).	SMMA_LO_01847
		Solve for a or b in a - b = c (minuends 20 to 99, no regrouping).	SMMA_LO_00343
		Solve for a, b, c, or d in a/b x c/d = e/f (combinations to 12 x 12).	SMMA_LO_00372
		Solve for a, b, or c in a ÷ b/c = d/e (combinations to 12 ÷ 12).	SMMA_LO_00371
		Solve for x in ax = b (products from -(4 x 4) to -(9 x 9)).	SMMA_LO_00390
		Solve for a two-step equation in context.	SMMA_LO_01638
		Solve for a in a/b = c (products from -(4 x 4) to -(9 x 9)).	SMMA_LO_00391
		Solve for a or b in a ÷ b = c (up to 4-digit decimals).	SMMA_LO_00378
		Solve a one-step equation in context (subtraction, two-digit whole numbers).	SMMA_LO_01744
		Solve a one-step equation in context (division, two-digit whole numbers).	SMMA_LO_01747
		Solve for a or c in a/b - c/b = d/b (improper fractions, minuends 4/3 to 35/12).	SMMA_LO_00362

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		Solve for a or b in a - b = c (differences 0 to 18).	SMMA_LO_00333
AR.Math.Content.8.EE.C.8	Analyze and solve pairs of simultaneous linear equations.		
AR.Math.Content.8.EE.C.8.a	Find solutions to a system of two linear equations in two variables so they correspond to points of intersection of their graphs.	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
		Identify the solution to a system of linear equations by locating the point of intersection on its graph.	SMMA_LO_02080
AR.Math.Content.8.EE.C.8.b	Solve systems of equations in two variables algebraically using simple substitution and by inspection (e.g., 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
AR.Math.Content.8.EE.C.8.c	Solve real-world mathematical problems by utilizing and creating two linear equations in two variables.	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
AR.Math.Content.8.F	Functions		
AR.Math.Content.8.F.A	Define, evaluate, and compare functions.		
AR.Math.Content.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. Note: Function notation is not required for Grade 8.	Determine the output of one-function machine, given an input and sample inputs and outputs (combinations 2 x 2 to 9 x 9).	SMMA_LO_00358

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		Given a set of graphs of relations, identify which graphs represent functions.	SMMA_LO_01835
		Generate a table of values given a two-step rule.	SMMA_LO_01756
		Complete a table given a two-step rule (whole numbers).	SMMA_LO_01751
		Complete an input/output table given a two-step rule; then plot the ordered pairs on coordinate grid.	SMMA_LO_01758
		Identify the multiplication or division rule of the function.	SMMA_LO_01684
		Identify the one-step rule in the relation or function (addition and subtraction).	SMMA_LO_01722
		Complete an input/output table given a one-step rule; then plot the ordered pairs on a coordinate grid.	SMMA_LO_01757
		Identify the addition or subtraction rule of the function.	SMMA_LO_01682
		Identify the one-step rule in the relation or function (multiplication and division).	SMMA_LO_01723
		Complete a table given a two-step rule (single-digit whole numbers).	SMMA_LO_01750
		Generate a table of values given a one-step rule.	SMMA_LO_01755
		Given a graph of a relation, identify two ordered pairs on the graph that show the relation is not a function.	SMMA_LO_01812

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		Given a list of ordered pairs of a relation, identify two ordered pairs that show the relation is not a function.	SMMA_LO_01811
AR.Math.Content.8.F.A.2	Compare properties (e.g., y-intercept/initial value, slope/rate of change) of two functions each represented in a different way (e.g., algebraically, graphically, numerically in tables, or by verbal descriptions).	Identify the rate of change and the y-intercept of two linear functions, one represented graphically, and one represented either algebraically or in a table.	SMMA_LO_02101
		Identify the rate of change and the y-intercept of two linear functions, one represented in a table, and one represented either algebraically or in a verbal description.	SMMA_LO_02103
		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
AR.Math.Content.8.F.A.3	Identify the unique characteristics of functions (e.g., linear, quadratic, and exponential) by comparing their graphs, equations, and input/output tables.	Students write, graph, and compare two linear functions in order to find the best price for football jerseys.	SMMA_LO_02516
AR.Math.Content.8.F.B	Use functions to model relationships between quantities.		
AR.Math.Content.8.F.B.4	Construct a function to model a linear relationship between two quantities.		
AR.Math.Content.8.F.B.4.a	Determine the rate of change and initial value of the function from		

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AR.Math.Content.8.F.B.4.a.1	a verbal description of a relationship	Identify the rate of change and the y-intercept of two linear functions, one represented in a table, and one represented either algebraically or in a verbal description.	SMMA_LO_02103
		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
AR.Math.Content.8.F.B.4.a.3	a table	Identify the rate of change and the y-intercept of two linear functions, one represented graphically, and one represented either algebraically or in a table.	SMMA_LO_02101
		Identify the rate of change and the y-intercept of two linear functions, one represented in a table, and one represented either algebraically or in a verbal description.	SMMA_LO_02103
		Students use linear functions to solve a problem surrounding manufacturing stock decay.	SMMA_LO_02517
AR.Math.Content.8.F.B.4.a.4	a graph	Identify the rate of change and the y-intercept of two linear functions, one represented graphically, and one represented either algebraically or in a table.	SMMA_LO_02101

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		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
AR.Math.Content.8.F.B.4.b	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.	Determine the slope and intercept of a linear equation in context.	SMMA_LO_02180
		Students use linear functions to solve a problem surrounding manufacturing stock decay.	SMMA_LO_02517
AR.Math.Content.8.G	Geometry		
AR.Math.Content.8.G.A	Understand congruence and similarity using physical models, transparencies, or geometry software.		
AR.Math.Content.8.G.A.2a	Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations	Identify matching congruent figures under rotation and/or reflection.	SMMA_LO_00557
AR.Math.Content.8.G.A.3	Given a two-dimensional figure on a coordinate plane, identify and describe the effect (rule or new coordinates) of a transformation (dilation, translation, rotation, and reflection).		
AR.Math.Content.8.G.A.3.a	Image to pre-image	Determine the missing coordinate of a vertex of a triangle in a transformation.	SMMA_LO_01736
AR.Math.Content.8.G.A.3.b	Pre-image to image	Determine the missing coordinate of a vertex of a triangle in a transformation.	SMMA_LO_01736

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AR.Math.Content.8.G.A.5	Use informal arguments to establish facts about:		
AR.Math.Content.8.G.A.5.a	The angle sum and exterior angle of triangles.	Arrange statements to write a proof of a fact about either the angle sum or the exterior angle of a triangle.	SMMA_LO_02126
		Use a protractor to measure an angle in a triangle or quadrilateral; then find the sum of all the angles in the figure.	SMMA_LO_00650
AR.Math.Content.8.G.A.5.b	The angles created when parallel lines are cut by a transversal.	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
AR.Math.Content.8.G.B	Understand and apply the Pythagorean Theorem.		
AR.Math.Content.8.G.B.6	Model or explain an informal 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
AR.Math.Content.8.G.B.7	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	Find the measurement of the hypotenuse using the Pythagorean theorem. (2D)	SMMA_LO_01854
AR.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
		Find the measurement of the hypotenuse using the Pythagorean theorem. (2D)	SMMA_LO_01854

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AR.Math.Content.8.G.C	Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.		
AR.Math.Content.8.G.C.9	Develop and 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 cone or a sphere.	SMMA_LO_00844
		Use a formula to find the volume of a cylinder.	SMMA_LO_00839
AR.Math.Content.8.SP	Statistics and Probability		
AR.Math.Content.8.SP.A	Investigate patterns of association in bivariate data.		
AR.Math.Content.8.SP.A.2	Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	Students use linear functions to solve a problem surrounding manufacturing stock decay.	SMMA_LO_02517
AR.Math.Content.8.SP.A.3	Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercepts.	Determine the slope and intercept of a linear equation in context.	SMMA_LO_02180
		Determine the line of best fit for data in a scatter plot.	SMMA_LO_02179