Algebra I Summative Blueprint (B203707)—Blueprint Summary

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				Algebra Summative Assessment
		Status		Published
		# Standards Assessed		30
		Number of Items per Standard (max)		2
		Number of Items per Standard (min)		1
		Number of Items per Standard (avg)		1.1

Standard	Description	Yr #	Yr %	#	%
Total		32	100%	32	100%
Standard	**Description**	**Yr #**	**Yr %**	**#**	**%**
MA.9-12.N-RN.A	Extend the properties of exponents to rational exponents.				
MA.9-12.N-RN.A.2	Rewrite expressions involving radicals and rational exponents using the properties of exponents.	1	3.1%	1	3.1%
MA.9-12.N-Q.A	Reason quantitatively and use units to solve problems.				
MA.9-12.N-Q.A.1	Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.	1	3.1%	1	3.1%
MA.9-12.N-Q.A.2	Define appropriate quantities for the purpose of descriptive modeling.	1	3.1%	1	3.1%
MA.9-12.N-Q.A.3	Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	1	3.1%	1	3.1%
MA.9-12.A-SSE.A	Interpret the structure of expressions				
MA.9-12.A-APR.A.1	Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.	2	6.3%	2	6.3%
MA.9-12.A-CED.A	Create equations that describe numbers or relationships	1	3.1%	1	3.1%
MA.9-12.A-CED.A.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.	1	3.1%	1	3.1%
MA.9-12.A-REI.A	Understand solving equations as a process of reasoning and explain the reasoning				

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MA.9-12.A-REI.A.1	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	1	3.1%	1	3.1%
MA.9-12.A-REI.B	Solve equations and inequalities in one variable				
MA.9-12.A-REI.B.3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	2	6.3%	2	6.3%
MA.9-12.A-REI.B.4	Solve quadratic equations in one variable.				
MA.9-12.A-REI.B.4.a	Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form.	1	3.1%	1	3.1%
MA.9-12.A-REI.B.4.b	Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b.	1	3.1%	1	3.1%
MA.9-12.A-REI.C	Solve systems of equations				
MA.9-12.A-REI.C.5	Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.	1	3.1%	1	3.1%
MA.9-12.A-REI.C.7	Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically.	1	3.1%	1	3.1%
MA.9-12.A-REI.C.8	Represent a system of linear equations as a single matrix equation in a vector variable.				
MA.9-12.A-REI.D.10	Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).	1	3.1%	1	3.1%
MA.9-12.A-REI.D.12	Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.	1	3.1%	1	3.1%
MA.9-12.F-IF.A	Understand the concept of a function and use function notation				

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MA.9-12.F-IF.A.1	Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then f(x) denotes the output of f corresponding to the input x. The graph of f is the graph of the equation y = f(x).	1	3.1%	1	3.1%
MA.9-12.F-IF.A.2	Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.	1	3.1%	1	3.1%
MA.9-12.F-IF.A.3	Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers.	1	3.1%	1	3.1%
MA.9-12.F-IF.B	Interpret functions that arise in applications in terms of the context				
MA.9-12.F-IF.B.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.	1	3.1%	1	3.1%
MA.9-12.F-IF.B.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.	1	3.1%	1	3.1%
MA.9-12.F-IF.B.6	Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	1	3.1%	1	3.1%
MA.9-12.F-IF.C	Analyze functions using different representations				
MA.9-12.F-IF.C.7.b	Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	1	3.1%	1	3.1%
MA.9-12.F-IF.C.8.a	Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.	1	3.1%	1	3.1%
MA.9-12.F-BF.B.4	Find inverse functions.				
MA.9-12.F-BF.B.4.a	Solve an equation of the form f(x) = c for a simple function f that has an inverse and write an expression for the inverse.	1	3.1%	1	3.1%
MA.9-12.F-LE.A.3	Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.	1	3.1%	1	3.1%

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MA.9-12.F-LE.A.4	For exponential models, express as a logarithm the solution to ab to the ct power = d where a, c, and d are numbers and the base b is 2, 10, or e; evaluate the logarithm using technology.				
MA.9-12.F-LE.B	Interpret expressions for functions in terms of the situation they model				
MA.9-12.F-LE.B.5	Interpret the parameters in a linear or exponential function in terms of a context.	1	3.1%	1	3.1%
MA.9-12.S-ID.B	Summarize, represent, and interpret data on two categorical and quantitative variables				
MA.9-12.S-ID.B.5	Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.	1	3.1%	1	3.1%
MA.9-12.S-ID.B.6	Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.				
MA.9-12.S-ID.B.6.a	Fit a function to the data; use functions fitted to data to solve problems in the context of the data.	1	3.1%	1	3.1%
MA.9-12.S-ID.B.6.b	Informally assess the fit of a function by plotting and analyzing residuals.				
MA.9-12.S-ID.B.6.c	Fit a linear function for a scatter plot that suggests a linear association.	1	3.1%	1	3.1%
MA.9-12.S-ID.C	Interpret linear models	1	3.1%	1	3.1%