Algebra I

State Standard Number	State Standard Area/Description	Unit Name	Course Topic Description
A1.1 Solving Problems	A1.1.A Select and justify functions and equations to model and solve problems.	Polynomials	
	A1.1.B Solve problems that can be represented by linear functions, equations, and inequalities.	Functions and Linear Equations	
	A1.1.C Solve problems that can be represented by a system of two linear equations or inequalities.	Solving Systems	
	A1.1.D Solve problems that can be represented by quadratic functions and equations.	Quadratics and Radicals	
	A1.1.E Solve problems that can be represented by exponential functions and equations.	Exponentials	
A1.2 Numbers, expressions, and operations	A1.2.A Know the relationship between real numbers and the number line, and compare and order real numbers with and without the number line.	Number and Expressions	
	A1.2.B Recognize the multiple uses of variables, determine all possible values of variables that satisfy prescribed conditions, and evaluate algebraic expressions that involve variables.	Number and Expressions	
	A1.2.C Interpret and use integer exponents and square and cube roots, and apply the laws and properties of exponents to simplify and evaluate exponential expressions.	Numbers and Expressions	
	A1.2.D Determine whether approximations or exact values of real numbers are appropriate, depending on the context, and justify the selection.	Real Numbers	
	A1.2.E Use algebraic properties to factor and combine like terms in polynomials.	Polynomials	
	A1.2.F Add, subtract, multiply, and divide polynomials.	Polynomials	
A1.3 Characteristics and behaviors of functions	A1.3.A Determine whether a relationship is a function and identify the domain, range, roots, and independent and dependent variables.	Functions and Linear Equations	
	A1.3.B Represent a function with a symbolic expression, as a graph, in a table, and using words, and make connections among these representations.	Functions and Linear Equations	
	A1.3.C Evaluate f(x) at a (i.e., f(a)) and solve for x in the equation f(x) = b.	Functions and Linear Equations	
A1.4 Linear functions, equations, and inequalities	A1.4.A Write and solve linear equations and inequalities in one variable.	Functions and Linear Equations Inequalitites	
	A1.4.B Write and graph an equation for a line given the slope and the yintercept, the slope and a point on the line, or two points on the line, and translate between forms of linear equations.	Functions and Linear Equations	
	A1.4.C Identify and interpret the slope and intercepts of a linear function, including equations for parallel and	Functions and Linear Equations	

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	perpendicular lines.		
	A1.4.D Write and solve systems of two linear equations and inequalities in two variables.	Solving Systems	
	A1.4.E Describe how changes in the parameters of linear functions and functions containing an absolute value of a linear expression affect their graphs and the relationships they represent.		
A1.5 Quadratic functions and equations	A1.5.A Represent a quadratic function with a symbolic expression, as a graph, in a table, and with a description, and make connections among the representations.	Quadratics and Radicals	
	A1.5.B Sketch the graph of a quadratic function, describe the effects that changes in the parameters have on the graph, and interpret the x-intercepts as solutions to a quadratic equation.	Quadratics and Radicals	
	A1.5.C Solve quadratic equations that can be factored as (ax + b)(cx + d) where a, b, c, and d are integers.	Quadratics and Radicals	
	A1.5.D Solve quadratic equations that have real roots by completing the square and by using the quadratic formula.	Quadratics and Radicals	
A1.6 Data and distributions	A1.6.A Use and evaluate the accuracy of summary statistics to describe and compare data sets.		
	A1.6.B Make valid inferences and draw conclusions based on data.		
	A1.6.C Describe how linear transformations affect the center and spread of univariate data.		
	A1.6.D Find the equation of a linear function that best fits bivariate data that are linearly related, interpret the slope and y-intercept of the line, and use the equation to make predictions.	Functions and Linear Equations	
	A1.6.E Describe the correlation of data in scatterplots in terms of strong or weak and positive or negative.	Functions and Linear Equations	
A1.7 Additional Key Content	A1.7.A Sketch the graph for an exponential function of the form y = abn where n is an integer, describe the effects that changes in the parameters a and b have on the graph, and answer questions that arise in situations modeled by exponential functions.	Exponentials	
	A1.7.B Find and approximate solutions to exponential equations.	Exponentials	
	A1.7.C Express arithmetic and geometric sequences in both explicit and recursive forms, translate between the two forms, explain how rate of change is represented in each form, and use the forms to find specific terms in the sequence.	Functions and Linear Equations Exponentials	
	A1.7.D Solve an equation involving several variables by expressing one variable in terms of the others.	Equations	
A1.8 Reasoning, problem solving, and	A1.8.A Analyze a problem situation and represent it mathematically.	Equations	

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communication			
	A1.8.B Select and apply strategies to solve problems.	Polynomials	
		Quadratics and Radicals	
	A1.8.C Evaluate a solution for reasonableness, verify its accuracy, and interpret the solution in the context of the original problem.	Quadratics and Radicals	
	A1.8.D Generalize a solution strategy for a single problem to a class of related problems, and apply a strategy for a class of related problems to solve specific problems.	Quadratics and Radicals	
	A1.8.E Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.	All Lessons	
	A1.8.F Summarize mathematical ideas with precision and efficiency for a given audience and purpose.	All Lessons	
	A1.8.G Synthesize information to draw conclusions, and evaluate the arguments and conclusions of others.	Number and Expressions	
		Functions and Linear Equations	
		Solving Systems	
		Rational Expressions	
	A1.8.H Use inductive reasoning about algebra and the properties of numbers to make conjectures, and use deductive reasoning to prove or disprove conjectures.	Number and Expressions	