

Algebra 1

State Standard Number	State Standard Area/Description	Unit Name	Course Topic Description
AI.1	The student will use expressions and equations to model number relationships.		
AI.1.1	Equations and Formulas		
AI.1.1.a	Translate word phrases and sentences into expressions and equations and vice versa.	Numbers and Expressions	Evaluating Expressions
AI.1.1.b	Solve literal equations involving several variables for one variable in terms of the others.	Equations	Formulas and Absolute Value
AI.1.1.c	Use the formulas from measurable attributes of geometric models (perimeter, circumference, area and volume), science, and statistics to solve problems within an algebraic context.	Rational Expressions	Inverse Variation
AI.1.1.d	Solve two-step and three-step problems using concepts such as rules of exponents, rate, distance, ratio and proportion, and percent.	Equations	Proportions and Percent
AI.1.2	Expressions		
AI.1.2.a	Simplify and evaluate linear, absolute value, rational and radical expressions.	Numbers and Expressions Real Numbers Equations	Exponents and Roots Rational Numbers Formulas and Absolute Value
AI.1.2.b	Simplify polynomials by adding, subtracting or multiplying.	Polynomials	Add and Subtract Polynomials
AI.1.2.c	Factor polynomial expressions.	Polynomials	Factors

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AI.2	The student will use relations and functions to model number relationships.		
AI.2.1	Relations and Functions		
AI.2.1.a	Distinguish between linear and nonlinear data.	Functions and Linear Equations	Linear Equations Data
AI.2.1.b	Distinguish between relations and functions.	Functions and Linear Equations	Linear Equations
AI.2.1.c	Identify dependent and independent variables, domain and range.	Functions and Linear Equations	The Coordinate Plane and Relations
AI.2.1.d	Evaluate a function using tables, equations or graphs.	Functions and Linear Equations	Linear Equations
AI.2.2	Linear Equations and Graphs		

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Al.2.2.a	Solve linear equations by graphing or using properties of equality.	Functions and Linear Equations	Linear Equations
Al.2.2.b	Recognize the parent graph of the functions $y = k$, $y = x$, $y = x $, and predict the effects of transformations on the parent graph.		
Al.2.2.c	Slope		
Al.2.2.c.I	Calculate the slope of a line using a graph, an equation, two points or a set of data points.	Functions and Linear Equations	Linear Equations
Al.2.2.c.II	Use the slope to differentiate between lines that are parallel, perpendicular, horizontal, or vertical.	Functions and Linear Equations	Linear Equations
Al.2.2.c.III	Interpret the slope and intercepts within the context of everyday life (e.g., telephone charges based on base rate [y-intercept] plus rate per minute [slope]).	Functions and Linear Equations	Linear Equations
Al.2.2.d	Develop the equation of a line and graph linear relationships given the following: slope and y-intercept, slope and one point on the line, two points on the line, x-intercept and y-intercept, a set of data points.	Functions and Linear Equations	Linear Equations
Al.2.2.e	Match equations to a graph, table, or situation and vice versa.	Functions and Linear Equations	Linear Equations

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Al.2.3	Linear Inequalities and Graphs		
Al.2.3.a	Solve linear inequalities by graphing or using properties of inequalities.	Inequalities	Simple Inequalities
Al.2.3.b	Match inequalities (with 1 or 2 variables) to a graph, table, or situation and vice versa.	Inequalities	Simple Inequalities
Al.2.4	Solve a system of linear equations by graphing, substitution or elimination.	Solving Systems	Solving Systems
Al.2.5	Nonlinear Functions		
Al.2.5.a	Match exponential and quadratic functions to a table, graph or situation and vice versa.	Quadratics and Radicals	Quadratic Functions
Al.2.5.b	Solve quadratic equations by graphing, factoring, or using the quadratic formula.	Quadratics and Radicals	Solving Quadratic Equations
Al.3	The student will use data analysis, probability and statistics to formulate and justify predictions from a set of data.		

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Al.3.1	Data Analysis		
Al.3.1.a	Translate from one representation of data to another and understand that the data can be represented using a variety of tables, graphs, or symbols and that different modes of representation often convey different messages.	Systems of Equations	Statistics
Al.3.1.b	Make valid inferences, predictions, and/or arguments based on data from graphs, tables, and charts.	Functions and Linear Equations Systems of Equations	Data Statistics
Al.3.1.c	Solve two-step and three-step problems using concepts such as probability and measures of central tendency.	Systems of Equations	Statistics
Al.3.2	Collect data involving two variables and display on a scatter plot; interpret results using a linear model/equation and identify whether the model/equation is a line best fit for the data.	Functions and Linear Equations	Data