

Algebra 1

State Standard Number	State Standard Area/Description	Unit Name	Course Topic Description
	Expressions and Operations		
A.1	The student will represent verbal quantitative situations algebraically and evaluate these expressions for given replacement values of the variables.	Variables and Expressions Real Numbers Equations	Section 1 Dispersed throughout Section 1 Parts 1,2
A.2	The student will perform operations on polynomials, including		
A.2.a	applying the laws of exponents to perform operations on expressions;	Variables and Expressions	Section 4 Parts 1,4,5,6
A.2.b	adding, subtracting, multiplying, and dividing polynomials; and	Polynomials Rational Expressions	Section 1 Part 3 Section 2 Part 2 Section 3 Section 2 Part 4
A.2.c	factoring completely first- and second-degree binomials and trinomials in one or two variables. Graphing calculators will be used as a tool for factoring and for confirming algebraic factorizations.	Polynomials	Section 4 Section 5 Section 6
A.3	The student will express the square roots and cube roots of whole numbers and the square root of a monomial algebraic expression in simplest radical form.	Variables and Expressions Quadratics and Radicals	Section 4 Part 2 Section 3
	Equations and Inequalities		
A.4	Graphing calculators will be used both as a primary tool in solving problems and to verify algebraic solutions. The student will solve multistep linear and quadratic equations in two variables, including		
A.4.a	solving literal equations (formulas) for a given variable;	Equations	Section 4

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A.4.b	justifying steps used in simplifying expressions and solving equations, using field properties and axioms of equality that are valid for the set of real numbers and its subsets;	Variables and Expressions Real Numbers Equations	Section 2 Section 3 Part 2 Section 5 Section 1 Part 3
A.4.c	solving quadratic equations algebraically and graphically;	Polynomials Quadratics and Radicals	Section 4 Part 4 Section 5 Part 2 Section 6 Section 1 Section 2
A.4.d	solving multistep linear equations algebraically and graphically;	Equations	Section 1 Parts 4,5 Section 2
A.4.e	solving systems of two linear equations in two variables algebraically and graphically; and	Solving Systems	Entire Unit
A.4.f	solving real-world problems involving equations and systems of equations.	Equations Solving Systems	Section 1 Parts 4,5,6 Section 2 Section 3 Section 5 Section 1 Part 4 Section 2 Part 4
A.5	The student will solve multistep linear inequalities in two variables, including		
A.5.a	solving multistep linear inequalities algebraically and graphically;	Inequalities Solving Systems	Section 1 Sections 2 Part 1
A.5.b	justifying steps used in solving inequalities, using axioms of inequality and properties of order that are valid for the set of real numbers and its subsets;	Inequalities	Sections 1,2
A.5.c	solving real-world problems involving inequalities; and	Inequalities	Dispersed Throughout
A.5.d	solving systems of inequalities.	Solving Systems	Section 3 Parts 2,3
A.6	The student will graph linear equations and linear inequalities in two variables, including	Functions and Linear Equations Inequalities	Entire Unit Section 4

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A.6.a	determining the slope of a line when given an equation of the line, the graph of the line, or two points on the line. Slope will be described as rate of change and will be positive, negative, zero, or undefined; and	Functions and Linear Equations	Section 2 Parts 4,5 Section 3 Part 2
A.6.b	writing the equation of a line when given the graph of the line, two points on the line, or the slope and a point on the line.	Functions and Linear Equations	Section 2 Section 3 Part 3 Section 4 Parts 4,5,6
	Functions		
A.7	The student will investigate and analyze function (linear and quadratic) families and their characteristics both algebraically and graphically, including		
A.7.a	determining whether a relation is a function;	Functions and Linear Equations	Section 4 Part 1
A.7.b	domain and range;	Functions and Linear Equations	Section 1 Part 2
A.7.c	zeros of a function;		
A.7.d	x- and y-intercepts;	Functions and Linear Equations	Section 2 Part 3
A.7.e	finding the values of a function for elements in its domain; and	Functions and Linear Equations	Section 1 Part 4
A.7.f	making connections between and among multiple representations of functions including concrete, verbal, numeric, graphic, and algebraic.	Functions and Linear Equations	Section 1 Part 4 Section 1 Section 2 Section 3
A.8	The student, given a situation in a real-world context, will analyze a relation to determine whether a direct or inverse variation exists, and represent a direct variation algebraically and graphically and an inverse variation algebraically.	Functions and Linear Equations Rational Expressions	Section 4 Part 3 Section 1
	Statistics		

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A.9	The student, given a set of data, will interpret variation in real-world contexts and calculate and interpret mean absolute deviation, standard deviation, and z-scores.		
A.10	The student will compare and contrast multiple univariate data sets, using box-and-whisker plots.	Solving Systems	Section 5 Part 5
A.11	The student will collect and analyze data, determine the equation of the curve of best fit in order to make predictions, and solve real-world problems, using mathematical models. Mathematical models will include linear and quadratic functions.	Functions and Linear Equations	Section 5