

## Curriculum Guide: Algebra 2018-2019

Sequence Order	Guide ID	Description
1	ALG-56	Order of operations.
2	ALG-55	Translate verbal phrases and write algebraic expressions.
3	ALG-72	Translate verbal sentences into algebraic equations.
4	ALG-52	Properties: additive identity, additive inverse, associative, commutative, distributive, multiplicative identity, multiplicative inverse, substitution.
5	ALG-10	Perform operations on algebraic expressions and informally justify the procedures chosen.
6	ALG-23	Articulate and apply algebraic properties in symbolic manipulation.
7	ALG-1	Demonstrate an understanding of the subsets, elements, properties, and operations of the real number system.
8	ALG-3	Articulate, model, and apply the concept of inverse (e.g., opposites, reciprocals, and powers and roots).
9	ALG-4	Describe, model, and apply inverse operations.
10	ALG-6	Connect physical, graphical, verbal, and symbolic representations of absolute value.
11	ALG-20	Apply the concept of variable in simplifying algebraic expressions, solving equations, and solving inequalities.
12	ALG-16	Communicate the meaning of variables in algebraic expressions, equations, and inequalities.
13	ALG-14	Use estimation to make predictions and test reasonableness of results.
14	ALG-39	Solving equations with variables on both sides.
15	ALG-57	Solve multi-step equations.
16	ALG-61	Add and subtract polynomials.
17	ALG-53	Simplify polynomials by combining like terms.
18	ALG-59	Multiply polynomials.
19	ALG-74	Solve formulas for specified variables.
20	ALG-60	Solve word problems involving distance, wind/water, coins, mixture and consecutive integers.
21	ALG-13	Demonstrate an understanding of unit rates and other derived and indirect measurements (e.g., velocity, miles per hour, revolutions per minute, cost per unit).
22	ALG-5	Apply number theory concepts (e.g. primes, factors, divisibility and multiples in mathematical problem solving).
23	ALG-37	Simplify monomials.
24	ALG-65	Divide monomials and polynomials.
25	ALG-67	Factor polynomials using 4 types: common factor, difference between two perfect squares, trinomials that factors as a binomial square and regrouping.
26	ALG-63	Solve equations by factoring.
27	ALG-42	Solve rational equations.
28	ALG-31	Apply geometric properties, formulas, and relationships to solve real-world problems.
29	ALG-35	Analyze mathematical patterns related to algebra and geometry in real-world problem solving.
30	ALG-11	Use concepts of length, area, and volume to estimate and solve real-world problems.
31	ALG-41	Add and subtract rational expressions.
32	ALG-38	Multiplication and division of rational expressions.
33	ALG-70	Add, subtract, multiply and divide rational numbers.
34	ALG-9	Communicate the concepts and strategies being used in estimation, measurement, and computation.

**Curriculum Guide: Algebra  
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35	ALG-15	Solve problems in number theory, geometry, probability and statistics, and measurement and estimation using algebraic thinking and symbolism.
36	ALG-66	Simplify zero exponents.
37	ALG-54	Simplify negative exponents.
38	ALG-75	Use a coordinate plane to graph ordered pairs.
39	ALG-92	Find x- and y- intercepts of a linear equation.
40	ALG-76	Graph linear equations including horizontal lines and vertical lines.
41	ALG-77	Find the slope of a line using two points.
42	ALG-81	Transform a linear equation into standard form.
43	ALG-79	Use slope and any point on the line to write an equation.
44	ALG-80	Write equation of a line given two points on the line.
45	ALG-43	Write standard and slope-intercept form of linear equations.
46	ALG-44	Write linear equations concerning parallel and perpendicular lines.
47	ALG-17	Identify and represent a variety of functions.
48	ALG-90	Represent functions as ordered pairs.
49	ALG-91	Determine if an equation is a function.
50	ALG-24	Identify relationships which can and which cannot be represented by a function.
51	ALG-25	Describe the domain and range of functions and articulate restrictions imposed either by the operations or by the real-life situations which the functions represent.
52	ALG-36	Use algebraic thinking to generalize a pattern by expressing the pattern in functional notation.
53	ALG-22	Model real-world phenomena using functions and graphs.
54	ALG-26	Describe the transformation of the graph that occurs when coefficients and/or constants of the corresponding linear equations are changed.
55	ALG-28	Make predictions for a linear data set using a line of best fit.
56	ALG-7	Use real numbers to represent real-world applications (e.g. slope, rate of change, and proportionality).
57	ALG-18	Apply the concept of rate of change to slope.
58	ALG-19	Interpret results of algebraic procedures.
59	ALG-94	Solve systems of linear equations using graphing, substitution, and linear combination methods and apply to word problems.
60	ALG-21	Interpret graphs that depict real-world phenomena.
61	ALG-78	Solve and graph the solution of absolute value equations.
62	ALG-83	Solve and graph compound inequalities.
63	ALG-82	Solve and graph linear inequalities in one and two variables.
64	ALG-2	Demonstrate an understanding of the relative size of rational and irrational numbers.
65	ALG-8	Select and apply an appropriate method (i.e. mental arithmetic, paper and pencil, or technology) for computing with real numbers, and evaluate the reasonableness of results.
66	ALG-45	Simplify radicals.
67	ALG-46	Add and multiply radicals.
68	ALG-47	Divide radicals.

**Curriculum Guide: Algebra  
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69	ALG-33	Apply right triangle relationships including the Pythagorean Theorem and the distance formula.
70	ALG-48	Solve radical equations.
71	ALG-49	Solve quadratic equations using the quadratic formula and factoring.
72	ALG-50	Solve quadratic equations by completing the binomial square.
73	ALG-68	Solve quadratic word problems.
74	ALG-84	Graft linear equations using point-shape, y-intercept and standard form.