

Publisher: Kinetic Books®
 Program Title: *Algebra I*
 Components:
 Grade Level(s): middle and high school

OHIO STANDARDS MAP
(Algebra I)

Standard No.	Standard Language	Publisher Citations	
	ALGEBRA I	Primary Citations	Supporting Citations
8.1	Relate the various representations of a relationship; i.e., relate a table to graph, description and symbolic form.	6.02 6.06	6.13 to 6.14 6.33
8.2	Generalize patterns and sequences by describing how to find the n th term.	1.02	
8.3	Identify functions as linear or nonlinear based on information given in a table, graph or equation.	5.15 6.07 to 6.09 6.15 to 6.18 13.0 to 13.1 13.39 to 13.42	5.50 to 5.51 5.65 6.20 to 6.21 6.33 13.43 to 13.44
8.4	Extend the uses of variables to include covariants where y depends on x .	1.02 to 1.03	1.01 1.10 to 1.11
	Use physical models to add and subtract monomials and polynomials, and to multiply a polynomial by a monomial.	10.25	10.14 to 10.24 10.26 to 10.28 10.85
8.6	Describe the relationship between the graph of a line and its equation, including being able to explain the meaning of slope as a constant rate of change and y -intercept in real-world problems.	5.13 to 5.17 5.23 to 5.24 5.27 to 5.31 5.35 to 5.36 5.50 5.55	5.18 5.21 to 5.22 5.25 to 5.26 5.32 5.51 to 5.54 5.56 to 5.57 5.65
8.7	Use symbolic algebra (equations	1.01 to 13.63	

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	and inequalities), graphs and tables to represent situations and solve problems.		
8.8	Write, simplify and evaluate algebraic expressions (including formulas) to generalize situations and solve problems.	1.02 to 1.06 1.12 to 1.14 1.17 to 1.19 1.23 to 1.24	1.07 to 1.08 1.10 to 1.11 1.15 to 1.16 1.20 to 1.22 1.39
8.9	Solve linear equations and inequalities graphically, symbolically and using technology.	3.03 3.06 to 3.10 3.14 to 3.17 3.21 to 3.22 3.30 to 3.31 3.34 to 3.35 3.41 3.45 to 3.47	3.04 3.11 to 3.12 3.18 to 3.20 3.23 to 3.25 3.32 to 3.33 3.36 to 3.39 3.48 to 3.50 3.55 3.61 8.08 8.11 to 8.12 8.21 to 8.22 8.33 to 8.34 8.38 to 8.40
8.10	Solve 2 by 2 systems of linear equations graphically and by simple substitution.	7.05 to 7.07 7.10 7.22 to 7.28	7.08 to 7.09 7.29 to 7.31 7.47
8.11	Interpret the meaning of the solution of a 2 by 2 system of equations; i.e., point, line, no solution.	7.07	7.08 to 7.09 7.47
8.12	Solve simple quadratic equations graphically; e.g., $y = x^2 - 16$.	13.48 to 13.50	13.51 to 13.54 13.61
8.13	Compute and interpret slope, midpoint and distance given a set of ordered pairs.	5.23 to 5.24 5.27 to 5.28 5.30 to 5.50	5.25 to 5.26 5.37 5.39 to 5.40 5.51 to 5.57

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			5.65
8.14	Differentiate and explain types of changes in mathematical relationships, such as linear vs. nonlinear, continuous vs. noncontinuous, direct variation vs. inverse variation.	5.15 5.20 6.08 to 6.09 6.11 6.15 to 6.18 6.23 to 6.27 6.30 13.01	5.65 6.13 to 6.14 6.20 to 6.21 6.31 to 6.33 13.63
8.15	Describe and compare how changes in an equation affects the related graphs; e.g., for a linear equation changing the coefficient of x affects the slope and changing the constant affects the intercepts.	5.27 to 5.30 5.50 5.52 13.46 13.48	5.51 5.65 13.53 to 13.54 13.63
8.16	Use graphing calculators or computers to analyze change; e.g., interest compounded over time as a nonlinear growth pattern.	5.28 5.51 5.53 5.56 13.47	5.39 to 5.40 5.57 5.65 13.63
9.1	Define function with ordered pairs in which each domain element is assigned exactly one range element.	6.02 6.04 6.06 to 6.10	6.01 6.33
9.2	Generalize patterns using functions or relationships (linear, quadratic and exponential), and freely translate among tabular, graphical and symbolic representations.	3.0 to 3.60 5.13 to 5.57 6.01 to 6.30 9.01 13.0 to 13.50	3.61 5.63 6.31 to 6.33 9.39 13.61 to 13.63
9.3	Describe problem situations (linear, quadratic and exponential) by using tabular, graphical and symbolic representations.	3.34 to 3.35 3.38 3.40 to 3.41 3.45 to 3.48	3.36 to 3.37 3.39 3.42 to 3.44 3.49 to 3.50

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		3.51 to 3.54 5.14 5.35 to 5.36 13.08 to 13.10	3.55 3.61 5.65 13.11 to 13.12 13.19 to 13.20 13.63
9.4	Demonstrate the relationship among zeros of a function, roots of equations, and solutions of equations graphically and in words.	13.48 to 13.50	13.53 to 13.54 13.63
9.5	Describe and compare characteristics of the following families of functions: linear, quadratic and exponential functions; e.g., general shape, number of roots, domain, range, rate of change, maximum or minimum.	5.15 5.20 5.23 to 5.24 5.50 6.08 to 6.10 13.47 to 13.51	5.21 to 5.22 5.25 to 5.26 5.51 to 5.57 5.65 6.33 13.63
9.6	Write and use equivalent forms of equations and inequalities in problem situations; e.g., changing a linear equation to the slope-intercept form.	5.44 12.59 12.64	5.65 12.67 to 12.69
9.7	Use formulas to solve problems involving exponential growth and decay.	N/A	
9.8	Find linear equations that represent lines that pass through a given set of ordered pairs, and find linear equations that represent lines parallel or perpendicular to a given line through a specific point.	5.34 5.45 to 5.46	5.42 to 5.44 5.47 to 5.48 5.65
9.9	Solve and interpret the meaning of	7.01 to 7.31	7.47

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	2 by 2 systems of linear equations graphically, by substitution and by elimination, with and without technology.		
9.10	Solve quadratic equations with real roots by factoring, graphing, using the quadratic formula and with technology.	13.03 to 13.10 13.27 to 13.36 13.48 to 13.52	13.01 to 13.02 13.11 to 13.12 13.37 to 13.38 13.53 to 13.54 13.63
9.11	Add, subtract, multiply and divide monomials and polynomials (division of polynomials by monomials only).	10.14 to 10.17 10.20 to 10.25 10.29 to 10.32 10.35 to 10.37	9.01 to 9.23 10.18 to 10.19 10.26 to 10.28 10.33 to 10.34 10.41 to 10.42 10.85
9.12	Simplify rational expressions by eliminating common factors and applying properties of integer exponents.	11.02 to 11.05	11.01 11.06 11.08 to 11.09 11.51
9.13	Model and solve problems involving direct and inverse variation using proportional reasoning.	6.15 to 6.18	6.20 to 6.21 6.33
9.14	Describe the relationship between slope and the graph of a direct variation and inverse variation.	6.15 to 6.18	6.20 to 6.21 6.33
9.15	Describe how a change in the value of a constant in a linear or quadratic equation affects the related graphs.	5.29 13.46 to 13.48	5.65 13.63