Algebra 1 - OAS Standards Aligned to MVP Curriculum

*This document is for MVP *lessons* in the traditional and integrated sequences.
The integrated sequence includes a few additional lessons, and these are marked with an (I*).
Ready, Set, Go Practice Problems may cover additional standards.

OAS-M Red Indicates no corresponding MVP lesson.			Corresponding MVP Lesson(s) Corresponding OK Framework
Number and Operations (N)			
A1.N.1 Extend the understanding of umber and operations to include square roots and cube roots.	**A.1.N.1.1**	Write square roots and cube roots of monomial algebraic expressions in	2.7
	A.1.N.1.2	Add, subtract, multiply, and simplify square roots of monomial algebraic expressions and divide square roots of whole numbers, rationalizing the denominator when necessary.	2.7
Algebraic Reasoning (A)			
A1.A.1 Represent and solve mathematical and real-world problems using linear equations, absolute value equations, and systems of equations; interpret solutions in the original context.	**A1.A.1.1**	Use knowledge of solving equations with rational values to represent and solve mathematical and real-world problems (e.g., angle measures, geometric formulas, science, or statistics) and interpret the solutions in the original context.	1.9, 1.10, 1.11, 4.1, 4.2
	A1.A.1.2	Solve absolute value equations and interpret the solutions in the original context	Unit 1, Big Idea 4
	A1.A.1.3	Analyze and solve real-world and mathematical problems involving systems of linear equations with a maximum of two variables by graphing (may include graphing calculator or other appropriate technology), substitution, and elimination. Interpret the solutions in the original context.	1.4, 5.1, 5.7, 5.8, 5.9, 5.10, 5.11(H), 5.12(H), 7.12
A1.A.2 Represent and solve real-world and mathematical problems using linear inequalities, compound inequalities and systems of linear inequalities; interpret solutions in the original context.	**A1.A.2.1**	Represent relationships in various contexts with linear inequalities; solve the resulting inequalities, graph on a coordinate plane, and interpret the solutions.	1.9, 1.10, 1.11, 4.4, 4.5, 4.6, 5.1, 5.4, 5.5, 5.6
	A1.A.2.2	Represent relationships in various contexts with compound and absolute value inequalities and solve the resulting inequalities by graphing and interpreting the solutions on a number line.	5.2
	A1.A.2.3	Solve systems of linear inequalities with a maximum of two variables; graph and interpret the solutions on a coordinate plane.	5.1, 5.2, 5.4, 5.5, 5.6
	A1.A.3.1	Solve equations involving several variables for one variable in terms of the others	4.2, 4.3, 7.11

A1.A.3 Generate equivalent algebraic expressions and use algebraic properties to evaluate expressions and arithmetic geometric sequences.	**A1.A.3.2**	Simplify polynomial expressions by adding, subtracting, or multiplying	6.6, 7.3, 7.4, 7.5
	A1.A.3.3	Factor common monomial factors from polynomial expressions and factor quadratic expressions with a leading coefficient of 1.	3.5, 3.6, 7.6
	A1.A.3.4	Evaluate linear, absolute value, rational, and radical expressions. Include applying a nonstandard operation such as	Unit 1, Big Idea 1
	A1.A.3.5	Recognize that arithmetic sequences are linear using equations, tables, graphs, and verbal descriptions. Use the pattern, find the next term.	1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1, 2.2, 2.3, 2.8, 3.7
	A1.A.3.6	Recognize that geometric sequences are exponential using equations, tables, graphs and verbal descriptions. Given the formula f(x) = a(r)^x find the next term and define the meaning of ! and ! within the context of the problem.	1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1, 2.2, 2.3, 2.8, 3.7
A1.A.4 Analyze mathematical change involving linear equations in real-world and mathematical problems.	**A1.A.4.1**	Calculate and interpret slope and the x- and y-intercepts of a line using a graph, an equation, two points, or a set of data points to solve real-world and mathematical problems.	3.2
	A1.A.4.2	Solve mathematical and real-world problems involving lines that are parallel, perpendicular, horizontal, or vertical	Unit 4, Big Idea 3
	A1.A.4.3	Express linear equations in slope-intercept, point-slope, and standard forms and convert between these forms. Given sufficient information (slope and y-intercept, slope and one-point on the line, two points on the line, x- and y-intercept, or a set of data points), write the equation of a line.	1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.11, 2.2, 2.8, 2.9, 5.3, 6.6, 7.9
	A1.A.4.4	Translate between a graph and a situation described qualitatively	3.1, 3.2, 3.3, 3.4, 3.5, 3.6, M1.3.8(I*)
Functions (F)			
A1.F.1 Understand functions as descriptions of covariation (how related quantities vary together) in real-world and mathematical problems.	**A1.F.1.1**	Distinguish between relations and functions.	3.7, 6.6, M1.3.8(I*)
	A1.F.1.2	Identify the dependent and independent variables as well as the domain and range given a function, equation, or graph. Identify restrictions on the domain and range in real-world contexts.	2.2, 3.2, 3.3, 3.4, 3.5, 3.6, 7.9, 8.2, 8.3, 8.4
	A1.F.1.3	Write linear functions, using function notation, to model real-world and mathematical situations	1.2, 1.3, 1.5, 1.6, 1.7, 1.8, 2.1, 2.8, 3.4, 6.2, 6.3, 6.4, 6.6, 7.9, 8.3, 8.7

	A1.F.1.4	Given a graph modeling a real-world situation, read and interpret the linear piecewise function (excluding step functions).	8.1, 8.2, 8.3
A1.F.2 Recognize functions and understand that families of functions are characterized by their rate of change.	**A1.F.2.1**	Distinguish between linear and nonlinear (including exponential) functions arising from real-world and mathematical situations that are represented in tables, graphs, and equations. Understand that linear functions grow by equal intervals and that exponential functions grow by equal factors over equal intervals.	1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1, 2.2, 2.3, 2.8, 2.9, 5.3, 6.6
	A1.F.2.2	Recognize the graph of the functions $f(x) = x$ and $f(x) = \|x\|$ and predict the effects of transformations [$f(x+c)$ and $f(x) + c$, where c is a positive or negative constant] algebraically and graphically using various methods and tools that may include graphing calculators.	Unit 3, Big Idea 4 M1.8.5(I*)
A1.F.3 Represent functions in multiple ways and use the representation to interpret real-world and mathematical problems.	**A1.F.3.1**	Identify and generate equivalent representations of linear equations, graphs, tables, and real-world situations	1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1
	A1.F.3.2	Use function notation; evaluate a function, including nonlinear, at a given point in its domain algebraically and graphically. Interpret the results in terms of real-world and mathematical problems	2.1, 3.3, 3.4, 3.5, 3.6, 8.1
	A1.F.3.3	Add, subtract, and multiply functions using function notation.	Unit 3, Big Idea 2 Unit 3, Big Idea 3
Data & Probability (D)			
A.1.D.1 Display, describe, and compare data. For linear relationships, make predictions and assess the reliability of those predictions.	**A1.D.1.1**	Describe a data set using data displays, describe and compare data sets using summary statistics, including measures of central tendency, location, and spread. Know how to use calculators, spreadsheets, or other appropriate technology to display data and calculate summary statistics.	Unit 2, Big Idea 1 Unit 2, Big Idea 2
	A1.D.1.2	Collect data and use scatterplots to analyze patterns and describe linear relationships between two variables. Using graphing technology, determine regression lines and correlation coefficients; use regression lines to make predictions and correlation coefficients to assess the reliability of those predictions.	9.6, 9.7, 9.9
	A1.D.1.3	Interpret graphs as being discrete or continuous	2.10, 3.2, 3.3

A.1.D.2 Calculate probabilities and apply probability concepts.	**A1.D.2.1**	Select and apply counting procedures, such as the multiplication and addition principles and tree diagrams, to determine the size of a sample space (the number of possible outcomes) and to calculate probabilities.	Unit 6, Big Idea 1
	A1.D.2.2	Describe the concepts of intersections, unions, and complements using Venn diagrams to evaluate probabilities. Understand the relationships between these concepts and the words AND, OR, and NOT.	Unit 6, Big Idea 1
	A1.D.2.3	Calculate experimental probabilities by performing simulations or experiments involving a probability model and using relative frequencies of outcomes.	Unit 6, Big Idea 3
	A1.D.2.4	Apply probability concepts to real-world situations to make informed decisions.	Unit 6, Big Idea 2