Algebra 1

The following learning targets represent the major concepts studied and assessed in this course.

Semester 1

Unit A
Data Analysis

A1 Analyze and interpret dot plots, histograms & boxplots, including shape, outliers, center, spread (SOCS).

Unit B
Real Numbers and Connections to Algebra

B1 Identify numbers in the real number system (rational, irrational, integer, whole number, radical, terminating and repeating decimals, etc.).
B2 Solve equations (including x^2), recognize equivalent forms, and determine the number of solutions.
B3 Solve inequalities, recognize equivalent forms, and graph their solutions.
B4 Write a linear equation or inequality and use it to solve problems in context.
B5 Solve literal equations for a specified variable.

Unit C
Linear Functions and Equations

C1 Identify and compare key features of linear functions within and between all forms: graph, table, and equation.
C2 Graph a linear equation/inequality, and determine the points that are in the solution set of a function, and evaluate functions for inputs in their domain.
C3 Write equations of linear functions given a graph, table, word problem, or key features of that function.
C4 Interpret the parameters of a linear function in context and analyze the effect of translations and scale changes on linear functions.

Unit D
Build Linear Functions and Models

D1 Find the line of best fit and the correlation coefficient, r, of a data set, interpret each.
D2 Write arithmetic sequences in recursive and explicit form.
D3 Identify domain and range and use it to create piecewise functions, including in context.

Semester 2

Unit E
Linear Systems

E1 Find and interpret the solution to a system of equations by graphing, table, or guess and check.
E2 Find and interpret the solution to a system of equations algebraically.
E3 Write and solve systems of equations in context and interpret the solution.
E4 Represent a system of linear inequalities graphically, including in context.

Unit F
Exponential Functions and Equations

F1 Write equations of exponential functions, given a graph, table, word problem, or key features of that function.
F2 Graph an exponential function, determine the points that are in the solution set of an exponential function, and evaluate exponential functions for inputs in their domain.
F3 Identify key features of exponential functions, interpret parameter changes and analyze the effect of translations and scale changes on exponential functions.
F4 I can recognize linear and exponential functions from a table, graph, equation, in context, and compare their rates of change for a given interval.
F5 I can write geometric sequences in recursive and explicit form.

Algebra 1

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Unit G ***Polynomial Operations and Models***	**G1** Identify parts of an expression using polynomial terminology (constant, term, degree, leading coefficient, coefficient, monomial, binomial, trinomial). **G2** Multiply polynomials, including in context. **G3** Add and subtract polynomials, including in context. **G4** Simplify expressions involving radicals and rational exponents.
Unit H ***Quadratic Functions and Equations***	**H1** Graph a quadratic function in standard form and identify its key features. **H2** Divide a polynomial by a monomial and rewrite a polynomial in factored form, including in context. **H3** Solve a quadratic equation using an appropriate method (factor, complete the square, square root method, quadratic formula, graph), including in context.
Unit I ***Functions and Models***	**I1** Graph and rewrite a quadratic function in equivalent forms and identify its key features (vertex, standard, and intercept/factored forms). **I2** Compare linear, exponential, and quadratic functions, and compare their rates of change for a given interval. **I3** Solve a system of equations involving linear and quadratic functions algebraically and/or graphically, including in context.
Unit A ***Data Analysis***	**A2** Summarize bivariate categorical data in two-way frequency tables.