Course: Algebra I

Quarter 2: **Zanesville City**

CLUSTER	STANDARD
Create equations that describe numbers or relationships. A-**CED**.1-4	A-CED.1 Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.
	A-CED.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
	A-CED.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context.
	A-CED.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.
Understand solving equations as a process of reasoning and explain the reasoning. A-**REI**.1	A-REI.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
Solve equations and inequalities in one variable. A-**REI**.3, 4a,4b	A-REI.3 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
Understand the concept of a function and use function notation. F-**IF**.1-3	F-IF.1 Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If *f* is a function and *x* is an element of its domain, then *f*(*x*) denotes the output of *f* corresponding to the input *x*. The graph of *f* is the graph of the equation *y* = *f*(*x*).
	F-IF.2 Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

	F-IF.3 Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers.
Interpret functions that arise in applications in terms of a context. F-**IF**.4-6	F-IF.4 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.**
	F-IF.5 Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.*
	F-IF.6 Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.*
Construct and compare linear, quadratic and exponential models and solve problems. F.**LE**.1a,1b,1c,2,3	F-LE.1a Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.
	F-LE.1b Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.
	F-LE.1c Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.
	F-LE.2 Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).
	F-LE.3 Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.