Algebra Concepts and Connections Unit 1: Modeling Linear Functions

Overview:

This unit provides the opportunity for students to construct and interpret arithmetic sequences as functions, algebraically and graphically, to model and explain real-life phenomena. Students will use formal notation to represent linear functions and the key characteristics of graphs of linear functions, and informally compare linear and non-linear functions using parent graphs.

Learning Targets

In Unit 1, students will:

- Use mathematically applicable situations algebraically and graphically to build and interpret arithmetic sequences as functions whose domain is a subset of the integers
- Construct and interpret the graph of a linear function that models real-life phenomena
- Represent key characteristics of graphs of a linear function using formal notation
- Relate the domain and range of a linear function to its graph and to the quantitative relationship it describes
- Use formal interval and set notation to describe domain and range of linear functions
- Use function notation to build and evaluate linear functions for inputs in their domains
- Interpret statements that use function notation in terms of a mathematical framework
- Analyze the difference between linear functions and nonlinear functions by informally analyzing the graphs of various parent functions (linear, quadratic, exponential, absolute value, square root, cube root parent curves)

Key Vocabulary: (linked to GA DOE Interactive Glossary)

Arithmetic Sequences	Continuous	Dependent Variable	Discrete
Domain	Function Notation	Independent Variable	Interval Notation
Linear Function	Non-Linear Function	Parent Function	Range
Relation	Set Notation		

Supporting Resources:

http://ctlslearn.cobbk12.org/

https://www.khanacademy.org/math/algebra-basics

https://gavirtual.instructure.com/courses/34327

https://www.ixl.com/math/algebra-1