Unit 2a-Use Functions to Model Relationships

Content Area:MathematicsCourse(s):Math 8 Gen EdTime Period:Marking Period 2Length:WK1-4 Envisions Mathematics Topic 3Status:Published

Essential Questions

• How can you use functions to model linear relationships?

Big Ideas

- Define, evaluate, and compare functions.
- Use functions to model relationships between quantities.

CSDT Technology Connection

8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose

CSDT Technology Connection

8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose

Enduring Understandings

Functions

8.F.1 Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.

Clarification: Function notation is not required in Grade 8.

8.F.2[M] Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented

by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.

8.F.3[M] Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function A = s2 giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.

8.F.4 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.

8.F.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

Mathematical Practices Focus

- 1. Make sense of problems and persevere in solving them. Lesson 4, 5, 6, and page 185
- 2. Reason abstractly and quantitatively. Lesson 1, 3, 4, 5, 6, and page 185
- 3. Construct viable arguments and critique the reasoning of others. Lesson 1, 2, 4, 5, and page 185
- 4. Model with mathematics. Lesson 1, 2, 3, 4, 6, and page 185
- 5. Use appropriate tools strategically. Lesson 2, and page 185
- 7. Look for and make use of structure. Lesson 1, 3, 5, 6, and page 185
- 8. Look for and express regularity in repeated reasoning. Lesson 1, 2, 4, 6, and page 185