Unit 2a-Use Functions to Model Relationships

Content Area: **Mathematics**
Course(s): **Math 8 Gen Ed**
Time Period: **Marking Period 2**
Length: **WK1-4 Envisions Mathematics Topic 3**
Status: **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

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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