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| Define, evaluate, and compare 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. (Function notation is not required in Grade 8.) | **8.F.1.a** I understand that a function is a rule that assigns to each input exactly one output.**8.F.1.b** I understand that the graphical representation of a function consists of the ordered pairs of each input and its corresponding output. **Note:** Function notation is not emphasized in Intermediate 2 |
| **8.F.2** 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.2** I can compare properties, e.g., rate of change, intercepts, intersections, increasing and decreasing, etc., 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 second linear functionrepresented by an algebraic expression, determine which function has the greater rate of change. |
| 8.F.3. 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.3.a** I can understand that the equation defines a linear function, whose graph is a straight line.**8.F.3.b** I can give examples of functions that are not linear. |

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| Use functions to model relationships between quantities. |
| **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.4.a** I can create a linear function which models two ordered pairs, a table, a graph, or a contextual situation by finding the rate of change and the initial value.**8.F.4.b** I can explain the meaning of the rate of change and initial value of a linear function given a contextual situation, its graph or 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. | **8.F.5.a** I can describe the attributes of a graph of a function (increasing or decreasing, linear or nonlinear).**8.F.5.b** I can sketch the graph of a function given the verbal attributes: is increasing or decreasing, linear or nonlinear. |