Functions

Grade 8 Math Grade 8 Math
Start Date: November 11, 2013
End Date : December 06, 2013

Unit Overview	Content Elaborations	Unit Resources
Students will be able to: Understand the basic definition of a function. Compare two functions using graphs, equations, tables and verbal models. Interpret the slope intercept equation as a linear function and determine the difference between graphs which are function and non-functions. Construct a model of a linear function which describes the realtionship between two values by using tables and graphs.	**Grasping the concept of a function and using functions to describe quantitative relationships.** 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. 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.* 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 $A = s^2$ 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.* 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	Holt Pre-Algebra: 12-4 12-5 12-6 12-7 12-8* --Assessments-- Smart Board lessons Common Core Model Curriculum Study Island

	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. 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.	
Unit Vocabulary Functions Input Output domain range function notation linear function exponential function exponential growth/decay quadratic function parabola	Enduring Understandings (Big Ideas) Define, evaluate, and compare functions. Use functions to model relationships between quantities.	Connections This Cluster is connected to the Grade 8 Critical Area of Focus #2, Grasping the concept of a function and using functions to describe quantitative relationships.

Standards

CC_Common Core State Standards - Mathematics (2010) - Grade 8

Domain 8.F Functions

Cluster Statement Define, evaluate, and compare functions.

Standard 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.

Standard 8.F.2 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).

Standard 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.

Cluster Statement Use functions to model relationships between quantities.

Standard 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.
Standard 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.

Student Assessment	Unit Refection

Functions

Content	**Skills**	**Assessment**
A. Functions	A. Functions 1. Identifying 2. Defining 3. Representing 4. Evaluating 5. Graphing Linear/Nonlinear 6. Exponential/Quadratic	Assessment- Daily work/Independent practice- Student Observation-