Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

Collaboration / Math 8* / Grade 8 (Math Regional Curriculum)

Wednesday, October 31, 2012, 2:04PM

Standard/Module: Proficiency with Functions: 8.F.3 (Week 22, 3 Weeks)

Stage 1: Desired Results

Standards Focus

- Major (70%) 8.F.1
  8.F.5

Grade 8 Map

Standards

NYS: CCLS:Mathematics, NYS: 8th Grade , Functions

8.F Define, evaluate, and compare functions.

- 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.

Enduring Understandings	Essential Questions
Interpret the equation y = mx+b as a linear function	What determines if a function is linear or non-linear?

Critical Content

1. Define a linear function in the form y = mx + b
2. Give examples of non-linear function

- Quadratic: $y = x^2$, $y = x^2+5x+10$, $y = x(2+x)$
- Cubic: $y = x^3$

Skills	Vocabulary
1. Generate and plot ordered pairs from an equation. 2. Understand linear slope as a constant rate of change. 3. Distinguish between linear and non-linear functions given their algebraic expression, a table, or a graph. 4. Recognize functions written in the form y = mx + b are linear and that every linear function can be written in the form y = mx + b. 5. State 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 (1, 1), (2, 4) and (3, 9), which are	Tier 2: function, rate of change, slope Tier 3: co-linear, linear, non-linear function, slope intercept form of a line (y = mx + b)

not on a straight line.)	

Stage 2: Assessment Evidence

Assessments

Name that Functions
Formative: Test: Written

Students are shown different representations of functions and they are to identify if it is linear, quadratic, or cubic and justify how they know.

Stage 3: Learning Plan

Learning Activities	Resources
Use "Function Man" on www.harveyshomepage.com	www.harveyshomepage.com
Use the Magic Money Machine	www.illustrativemathematics.org
	www.illuminations.nctm.org
Show examples of different functions and compare their properties to linear functions. Use technology to experiment with what happens when different coefficients are introduced the basic equation.	
Magic Money Machine	

Differentiation Opportunities

Start with the graphs of the functions as they are the most obvious in showing the differences between the functions.

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