Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

Collaboration / Math 6* / Grade 6 (Math Regional Curriculum)

Wednesday, October 31, 2012, 12:04PM

Standard/Module: Proficiency with Expressions and Equations 6.EE.9 (Week 12, 5 Weeks)

Stage 1: Desired Results

Standards Focus

- Major (70%) 6.G.3, 6.RP.3, 6.NS.8

6th Grade CCS Map.pdf

Standards

NYS: CCLS:Mathematics, NYS: 6th Grade , Expressions & Equations

6.EE Represent and analyze quantitative relationships between dependent and independent variables.

- 9. Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.

Enduring Understandings	Essential Questions
1. Dependent variables depend on independent variables. 2. A change in the independent variable creates a change in the dependent variable. 3. A change in the dependent variable creates a change in the independent variable.	1. In a linear equation, the independent variable may change, but still produces a straight line. Why is the graph representation a straight line? 2. How does a change in an independent variable impact the dependent variable

Critical Content

1. Variables

   a. independent variables

   b. dependent variables

   c. relationship between independent and

dependent variables

2. Linear

3. Coordinate Plane

a. axes (x, y)

b. ordered pair

c. input/output

4. Real world problem or real word application

5. Equations

6. Tables and graphs

Skills	**Vocabulary**
1. Use variables to represent two quantities in a real-world problem that change in relationship to one another. 2. Write an equation to express a relationship between a dependent variable and independent variable 3. Recognize when quantitative relationships between independent and dependent variables are linear. 4. Create a table graph to represent a variable 5. Identify the independent and dependent variable.	Tier 2 expression factor variable term evaluate simplify sum difference product quotient formula substitution balance rational

	set constraint condition infinite relationship Tier 3 equivalent expressions like terms inequality equation inverse operation reciprocal nonnegative ordered pair independent variable dependent variable table graph

Stage 2: Assessment Evidence

Assessments

Formative: Other: Quiz

Students will be asked 3 questions like the sample below:

Susan started with $1 in her savings. She plans to add $4 per week to her savings. Use an equation, table and graph to demonstrate the relationship between the number of weeks that pass and the amount in her savings account.

Stage 3: Learning Plan	
Learning Activities	**Resources**
Students can use many forms to represent relationships between quantities. Multiple representations include describing the relationship using language, a table, an equation, or a graph. Translating between multiple representations helps students understand that each form represents the same relationship and provides a different perspective on the function.	http://engageny.org/common-core/ http://illustrativemathematics.org/
Provide multiple situations for the student to analyze and determine what unknown is dependent on the other components. For example, how far I travel is dependent on the time and rate that I am traveling.	www.livebinders.com/play/play/52180 http://illuminations.nctm.org/
The use of technology, including computer apps, CBLs, and other hand-held technology allows the collection of real-time data or the use of actual data to create tables and charts. It is valuable for students to realize that although real-world data often is not linear, a line sometimes can model the data .	http://www.mathsisfun.com/geometry/polyhedron.html http://www.korthalsaltes.com/

Differentiation Opportunities

Teachers should have students put the problem in their own words. Once they understand the problem they should then write an equation, create a table of values for the equation, and then graph the equation.

There should be much modeling and guided practice with tiered questions.

Students should be given many opportunities to work with another student to help brainstorm strategies to aid them in understanding the question and develop their equation. Creating a table and graph will also be challenging. Teachers need to provide simplistic steps in coming up with a table of values and graphing their equation. A graphing calculator may help students with the graphing of their equations and the interpretation of the problem as well.

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