Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

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

Wednesday, October 31, 2012, 1:43PM

Standard/Module: Proficiency with Functions: 8.EE.5 (Week 10, 22 Weeks)

Stage 1: Desired Results

Standards Focus

- Major (70%) 8.EE.1
  8.EE.2
  8.EE.6
  8.F.1

Grade 8 Map

Standards

NYS: CCLS:Mathematics, NYS: 8th Grade , Expressions & Equations

8.EE Understand the connections between proportional relationships, lines, and linear equations.

- 5. Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.

Enduring Understandings	Essential Questions
Graph, interpret, and compare proportional relationships representing in different ways.	1. Why are graphs helpful? 2. What is the difference between the graph of a proportional relationship and a non-proportional relationship?

Critical Content

1. Proportional relationship

- In tables
- In equations
- In contextual situations

2. Unit rate

3. Slope of the graph

Skills	Vocabulary
1. Determine the slope between two points. -change in y compared to change in x (using	Tier 2: graph, proportion, relationships, table

graph or slope formula) 2. Graph a proportional relationship given a table, equation or contextual situation. 3. Recognize unit rate as slope and interpret the meaning of the slope in context (positive, negative, zero, and undefined slopes). 4. Recognize that proportional relationships include the point (0, 0). 5. Compare different representations of two proportional relationships represented as contextual situations, graphs, or equations.	Tier 3: proportional relationships, rate of change, slope, *m* (slope), unit rate

Stage 2: Assessment Evidence

Assessments

D = RT, graphically and algebraically
Formative: Performance: Authentic Task

Use the learning activities as a form of assessment.

Stage 3: Learning Plan

Learning Activities	Resources
Have students take a look at or write at least 2 related d = rt problems where one element is changed in the second problem, which prompts a change in at least one of the other variables, and graph the results. Students could construct a t-chart and plot the points on a graph, analyzing which variable (d, r, or t) represents x and which represents y. Students should write an equation to represent the d = rt and compare which problem/equation/graph shows greater speed and justify the results.	www.illuminations.nctm.org www.illustrativemathematics.org

Differentiation Opportunities

Give students d = rt problems if they struggle to write their own.

Have students write stories where d = rt is used at least twice in the story. This will help them to think about how d = rt is used in the real world, the broad use of it. Brainstorm as a class where you could go, modes of transportation, and how fast you might get there using the mode. Play around by putting

in values for each variable and talk about how it affects the 3rd variable. For example:

"We are going to New York City which is about 360 miles away. If we drive in a car, it will take about 6 hours to get there. How fast will we be traveling?"

"We are going to New York City and traveling in a car at 70 miles per hour. If New York City is 360 miles away, how long will it take us to get there?

"We are going to New York City and we will be in the car for about 5.5 hours, traveling at a rate of 70 miles per hour. How many miles away is New York City?"

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Last Updated: Wednesday, October 24, 2012, 1:29PM

Atlas Version 7.2.6
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