Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

Collaboration / Math 4* / Grade 4 (Math Regional Curriculum)

Wednesday, October 31, 2012, 10:29AM

Standard/Module: Proficiency in Operations & Alg. Thinking - 4.OA.2 (Week 9, 31 Weeks)

Stage 1: Desired Results

Standards Focus

- Major (70%) Connects to 4.OA.1 and 4.OA.3

4th Grade Proficiency Map.pdf

Standards

NYS: CCLS:Mathematics, NYS: 4th Grade , Operations & Algebraic Thinking
4.OA Use the four operations with whole numbers to solve problems.

- 2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

Enduring Understandings	Essential Questions
1. Problem solving involves drawing and writing equations with a symbol for the unknown number. 2. Multiplication is related to addition. 3. Symbols are used to represent an unknown number in an equation. 4. Additive comparisons focus on the difference between two quantities. 5. Multiplicative comparisons focus on comparing two quantities by showing that one	1. How can we use drawings and equations to solve word problems? 2. How is multiplication related to addition? 3. What is the difference between additive and multiplicative comparisons?

quantity is a specified number of times larger or smaller than the other.	

Critical Content

Word Problems

- Translation of words to equations
- Key Words that translate to math symbols (is, of, product,etc.)
- Steps to solve equations
- Checking solution by checking "into the words" of the word problem

Multiplicative Comparison using:

- Drawings
- Equations
- Difference between multiplicative and additive comparison

Skills	**Vocabulary**
1.) Students will translate words into math symbols. 2.) Students will use a symbol to represent the unknown number. 3.) Students will multiply or divide to solve word	Tier 2: multiply, divide, solve Tier 3: symbol, unknown, multiplicative comparison, additive comparison, equation

problems by using drawings and equations. 4.) Students will understand the relationship between multiplication and addition.	

Stage 2: Assessment Evidence

Assessments

Formative: Other: Quiz

Students will be given 5 comparative situations and they will translate each situation into an equation with an unknown and solve.

Stage 3: Learning Plan

Learning Activities	Resources
Students need experiences that allow them to connect mathematical statements and number sentences or equations. This allows for an effective transition to formal algebraic concepts. They need to represent an unknown number in a word problem with a symbol. Word problems which require multiplication or division are solved by using drawings and equations. Present multistep word problems with whole numbers and whole-number answers using the four operations. Students should know which operations are needed to solve the problem. Drawing pictures or using models will help students understand what the problem is asking. They should check the reasonableness of their answer using mental computation and estimation strategies.	Examples of multistep word problems can be accessed from the released questions on the NAEP (National Assessment of Educational Progress) Assessment at http://nces.ed.gov/nationsreportcard/itmrlsx/search.aspx. National Assessment of Educational Progress (NAEP) Assessments - http://nces.ed.gov/nationsreportcard/itmrlsx/search.aspx. www.illustrativemathematics.org www.illuminations.nctm.org

Students need to solve word problems involving multiplicative comparison (product unknown, partition unknown) using multiplication or division. They should use drawings or equations with a symbol for the unknown number to represent the problem. Students need to be able to distinguish whether a word problem involves multiplicative comparison or additive comparison (solved when adding and subtracting in Grades 1 and 2).	

Differentiation Opportunities

Model problems with manipulatives to reinforce the conceptual understanding.

Scaffold problems from easy to more difficult.

Create a station activity based on interest and ability level where perhaps some of the stations would give more or less support depending upon how the activity is arranged. For example, some of the stations can have written prompts or manipulatives that may guide some of the students.

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