Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

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

Wednesday, October 31, 2012, 10:43AM

Standard/Module: Proficiency in Fractions - 4.NF.4 (Week 23, 9 Weeks)

Stage 1: Desired Results

Standards Focus

- Major (70%) Connects with 4.NF.3 and 4.MD.4

4th Grade Proficiency Map.pdf

Standards

NYS: CCLS:Mathematics, NYS: 4th Grade , Number & Operations—Fractions

4.NF Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

- 4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.
- 4a. Understand a fraction a/b as a multiple of 1/b.
- 4b. Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number.
- 4c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.

Enduring Understandings

1. A fraction a/b is a multiple of 1/b.
2. You can multiply a fraction by a whole number by using visual fraction models and knowing that n x (a/b) = (n x a)/b.
3. Word problems involving multiplication of a fraction by a whole number can be solved by using visual fraction models and equations to represent each problem.

Essential Questions

1. How do we multiply a fraction by a whole number?
2. How do we use visual fraction models to help us solve word problems involving multiplication of a fraction by a whole number?
3. How do we write an equation to represent a word problem that involves multiplication of a fraction by a whole number?

Critical Content

1. Multiplication

- review multiples
- review fraction vs. whole number
- apply multiple concept with fractions

2. Word Problems

- translation/interpretation of problem
- Visual fraction model

- Equation

Skills	Vocabulary
1. Students will apply and extend previous understandings of multiplication to multiply a fraction by a whole number. 2. Students will understand that a fraction a/b is a multiple of 1/b. For example, 5/4 equals 5 x 1/4. 3. Students will apply the understanding that a multiple of a/b is a multiple of 1/b to multiply a fraction by a whole number. For example, 3 x 2/5 can be expressed as 6 x 1/5 with a product of 6/5. (n x (a/b)) = (n x a)/b. 4. Students will solve word problems involving multiplication of a fraction by a whole number by using visual fraction models and equations to represent the problem.	Tier 2: multiplication, fraction, whole number, word problem Tier 3: multiple, visual fraction model, equation

Stage 2: Assessment Evidence

Assessments

Formative: Other: Quiz

Students will be given 10 word problems involving multiplication of a fraction by a whole number. Students will be asked to solve the word problem by using visual fraction models and equations.

Stage 3: Learning Plan

Learning Activities	Resources
Students need many opportunities to work with problems in context to understand the connections between models and corresponding equations. Contexts involving a whole number times a fraction lend	www.illustrativemathematics.org www.illuminations.nctm.org

themselves to modeling and examining patterns. This standard builds on students' work of adding fractions and extending that work into multiplication.	

Differentiation Opportunities

Station activity with tiered level stations.

Appropriate hints or promting on assignments.

Guided practice using white boards

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