Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

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

Wednesday, October 31, 2012, 11:42AM

Standard/Module: Proficiency with Rational Numbers 6.NS.2 (Week 3, 4 Weeks)

Stage 1: Desired Results

Standards Focus

- Additional (10%) 6.EE.2, 6.EE.7, 6.RP.3

6th Grade CCS Map.pdf

Standards

NYS: CCLS:Mathematics, NYS: 6th Grade , The Number System

6.NS Compute fluently with multi-digit numbers and find common factors and multiples.

- 2. Fluently divide multi-digit numbers using the standard algorithm.

Enduring Understandings	Essential Questions
1. Conceptual understanding of division as: a. repeated subtraction for conceptual understanding of division b. division is breaking a number into equal groups 2. Knowledge of the standard algorithm for division	1. How can you use multiplication to check your division? 2. How can you use estimation to check that your quotient is reasonable? 3. Why is it essential to use the standard algorithm for division quickly and accurately? 4. When would you use the standard algorithm?

Critical Content

1. Basic Facts

a. Mastered addition, subtraction,

multiplication, division

2. Vocabulary

a. Dividend, Divisor, Quotient

3. From various forms (word problem, fraction form, etc.) students can use the standard algorithm to divide

multi-digit whole numbers

4. Use estimation to check their quotient is reasonable.

Skills	**Vocabulary**
1. Subtraction 2. Multiplication 3. Use the standard algorithm with single digit division 4. Understanding of the process of the standard algorithm (guess and check, estimation, basic division and multiplication facts, etc.)	Tier 2: -divide -standard -dividend -division notation (/ , ÷) -divisor -quotient -remainder Tier 3: -algorithm

Stage 2: Assessment Evidence

Assessments

Skill based
Formative: Performance: Skill Demonstration

248 divided by 18.

Problem Task
Formative: Performance: Skill Demonstration

I spent $504 on 28 tickets for a rock concert. How much did I spend on each ticket?

Stage 3: Learning Plan

Learning Activities	Resources
<u>Rolling Decimals</u> Materials number cube Step 1 Roll a number cube five times. Write one three-digit number and one two-digit number using the digits you rolled. Use a decimal point in one or both numbers. For example, you might write 23.6 and 0.12. Step 2 Write an addition, subtraction, multiplication, and **division** sentence using the two numbers, such as 23.6 /0.12, 23.6 / 0.12, 23.6 / 0.12, and 23.6 / 0.12. Estimate the answers to each of the problems. For example, you might round 23.6 to 24 and 0.12 to 0.1 and then perform the operations. Use a calculator or paper and pencil to find the value of each problem. Compare the results with your estimations. Step 3 Take turns making up numbers and estimating the results of different operations, play a game together. Choose an estimation goal, such as 100 or 25.5. Challenge your child to write an addition, subtraction, multiplication, or division sentence with two and three-digit decimals that will result in a number as close to the estimate as possible.	http://engageny.org/common-core/ http://illustrativemathematics.org/ www.livebinders.com/play/play/52180 http://illuminations.nctm.org/ http://www.mathsisfun.com/geometry/polyhedron.html
1. Think Aloud: Do the problem with a partner while explaining and telling what you are thinking and doing. 2. Have students identify in a problem set when they would use mental math and when they would use the standard algorithm. 3. Connect students' existing strategies for division with the standard algorithm. 4. As a starter activity, use division	http://www.korthalsaltes.com/

problems that can reasonably be solved by using mental math (e.g., 105/25), estimation (e.g., 150 ÷ 12, 227 ÷ 30), and reasoning (e.g., when I think of 105 divided by 25, I think of 4 sets of 25 with 5 left over, the 5 left over is 5/25 which is 1/5, so the answer is 4 1/5). Model for the students your thinking as you work through the problem. (Note: This strategy would not apply to complex division problems for which the algorithm is most appropriate [e.g., 4567 ÷ 192]).	http://nlvm.usu.edu/en/nav/frames_asid_197_g_2_t_1.html?open=activities&from=search.html?qt=division

Differentiation Opportunities

Provide the steps of how to divide or provide an example on homework assignments for extra support.

Scaffold problems during lessons and reinforcement activities.

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