Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

Collaboration / Math 2* / Grade 2 (Math Regional Curriculum)

Wednesday, October 31, 2012, 4:03PM

Standard/Module: Proficiency with Operations 2.NBT.9 (Week 15, 9 Weeks)

Stage 1: Desired Results

Standards Focus

- Major (70%) connects with 2.NBT.1-8; 2.OA.1-4; 2MD.5

Gr. 2 Proficiency Map

Standards

NYS: CCLS:Mathematics, NYS: 2nd Grade , Number & Operations in Base Ten
2.NBT Use place value understanding and properties of operations to add and subtract.

- 9. Explain why addition and subtraction strategies work, using place value and the properties of operations.

Enduring Understandings	Essential Questions
1. Numbers can be decomposed to make various combinations that are easier to compute.	1. **Why** can you break apart numbers to help you add or subtract? 2. How can you use what you know to solve more complex problems?

Critical Content

1. Properties of operations.

2. Various strategies for adding and subtracting

3. Connections between the strategies for addition and subtraction and place value (24+38= 24+30+8 = 54+8= 54+6+2= 60+2)

Skills	Vocabulary
1. Various adding and subtraction strategies. 2. Apply the properties of operations. 3. Explain in writing how the addition and subtraction strategies work. 4. Explain orally how the addition and subtraction strategies work.	Tier two: strategies, part, whole Tier three: properties of operations, decompose numbers, compose numbers

Stage 2: Assessment Evidence

Assessments

Add, Subtract, Justify!
Formative: Test: Written

Students add and subtract given problems, and explain their answers using precise language that reflects knowledge of place value and properties of operations.

Stage 3: Learning Plan

Learning Activities	Resources
Students explain using concrete objects, pictures and words (oral or written) **why** addition or subtraction strategies work. The expectation is that students apply their knowledge of place value and the properties of operations in their explanation. Students should have the opportunity to solve problems and then explain why their strategies work. *Example:* "here are 36 birds in the park. 25 more birds arrive. How many birds are there? Solve the problem and show your work." Students could also have experiences examining strategies and explaining why they work. Also include incorrect examples for students to examine. Operations embedded within meaningful context promote development of reasoning and justification. **Example:** One of your classmates solved the problem 56 - 34 = __ by writing "I know that I need to add 2 to the number 4 to get 6. I also know that I need to add 20 to 30 to get 20 to get to 50. So, the answer is 22." Is their strategy correct? Explain why or why not.	www.illuminations.nctm.org www.illustrativemathematics.org

Example: One of your classmates solved the problem 25 + 35 by adding 20 + 30 + 5 + 5. Is their strategy correct? Explain why or why not.	

Differentiation Opportunities

Example

Mason read 473 pages in June. He read 227 pages in July. How many pages did Mason read altogether?

Karla's explanation: 473 + 227 = _____. I added the ones together (3 + 7) and got 10. Then I added the tens together (70 + 20) and got 90. I knew that 400 + 200 was 600. So I added 10 + 90 for 100 and added 100 + 600 and found out that Mason had read 700 pages altogether.

Debbie's explanation: 473 + 227 = _____. I started by adding 200 to 473 and got 673. Then I added 20 to 673 and I got 693 and finally I added 7 to 693 and I knew that Mason had read 700 pages altogether.

Becky's explanation: I used base ten blocks on a base ten mat to help me solve this problem. I added 3 ones (units) plus 7 ones and got 10 ones which made one ten. I moved the 1 ten to the tens place. I then added 7 tens rods plus 2 tens rods plus 1 tens rod and got 10 tens or 100. I moved the 1 hundred to the hundreds place. Then I added 4 hundreds plus 2 hundreds plus 1 hundred and got 7 hundreds or 700. So Mason read 700 books.

Students should be able to connect different representations and explain the connections. Representations can include numbers, words (including mathematical language), pictures,

number lines, and/or physical objects. Students should be able to use any/all of these representations as needed.

An interactive whiteboard or document camera can be used to help students develop and explain their thinking.

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