Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

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

Monday, October 15, 2012, 2:03PM

Standard/Module: Proficiency with Operations 2.NBT.5 (Week 1, 2 Weeks)

Stage 1: Desired Results

Standards Focus

- Major (70%) connects with 2.NBT.2,5-9; 2.OA.1-4; 2.MD.5,6

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.

- 5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

Enduring Understandings

1. Operations create relationships between numbers.
2. Computation involves taking apart and combining numbers using a variety of approaches.
3. Addition combines two or more numbers to create more.
4. Changing the order of the addends does not change the sum.
5. Grouping of addends does not change the sum.
6. Subtraction takes away a part from the whole.
7. There is a direct relationship between addition and subtraction.
8. Computation involves taking apart and combining numbers using a variety of approaches.

Essential Questions

1. Why does the order of the numbers matter when subtracting?
2. What are 2 strategies that can be used to add and/or subtract numbers quickly?
3. How do fact families help you compute?
4. What is subtraction?
5. What is addition?

Critical Content

1. Add numbers within 100.
2. Subtract numbers within 100.
3. Regroup numbers to demonstrate that the value of the number does not change but the place values of the digits within that number change. eg. when regrouping in the problem 324-116, 324 becomes 300=10=14 in order to regroup.

4. Memorizing and applying strategies to compute numbers. eg. doubles, doubles plus one, near doubles, look for groups of 10

5. Addition and Subtraction are related: related facts- fact families

6. Regroup numbers to demonstrate that the value of the number does not change but the place values of the digits within that number change.

eg. when regrouping in the problem 324-116, 324 becomes 300=10=14 in order to regroup.

Skills	**Vocabulary**
1. Fluently add and subtract within 100 using strategies based on place depending on the task. 2. Fluently add and subtract within 100 using strategies based on properties of operations (commutative, associative) depending on the task. 3. Fluently add and subtract within 100 using strategies based on the relationship between addition and subtraction (fact families) depending on the task.	Tier two: together, operations, take apart, sentence, join, order, group, strategies Tier three: add, addition sentence, equals, more, plus, sum, whole, doubles, near doubles, addend, number sentence subtract, subtraction, minus, difference,fact families, commutative, associative properties

Stage 2: Assessment Evidence

<u>Assessments</u>

AIMS Web M-CBM
Formative: Performance: Skill Demonstration

timed computation

Stage 3: Learning Plan

Learning Activities	**Resources**
Example: 67 + 25 = __ *<u>Place Value Strategy:</u>* I broke both 67 and 25 into tens and ones. 6 tens plus 2	k-5mathteachingresources.com www.illustrativemathematics.org www.illuminations.nctm.org

tens equals 8 tens. Then I added the ones. 7 ones plus 5 ones equals 12 ones. I then combined my tens and ones. 8 tens plus 12 ones <u>*Counting On and Decomposing*</u> a Number Leading to a Ten: I wanted to start with 67 and then break 25 apart. I started with 67 and counted on to my next ten. 67 plus 3 gets me to 70. I then added 2 more to get to 72. I then added my 20 and got to 92. <u>*Commutative Property:*</u> I broke 67 and 25 into tens and ones so I had to add 60+7+20+5. I added 60 and 20 first to get 80. Then I added 7 to get 87. Then I added 5 more. My answer is 92. Adding and subtracting fluently refers to knowledge of procedures, knowledge of when and how to use them appropriately, and skill in performing them	

flexibly, accurately, and efficiently. Students should have experiences solving problems written both horizontally and vertically. They need to communicate their thinking and be able to justify their strategies both verbally and with paper and pencil. **Addition strategies based on place value for 48 + 37 may include:** -Adding by place value: 40 + 30 = 70 and 8 + 7 = 15 and 70 + 15 = 85. -Incremental adding (breaking one number into tens and ones); 48 + 10 = 58, 58 + 10 = 68, 68 + 10 = 78, 78 + 7 = 85 -Compensation (making a friendly number): 48 + 2 = 50, 37 – 2 = 35, 50 + 35 = 85 **Subtraction strategies based on place value for 81 - 37 may include:** -Adding up (from smaller number to larger number): 37 + 3 = 40, 40 + 40 = 80, 80 + 1 = 81, and 3 + 40 + 1 = 44. -Incremental subtracting: 81 -10 = 71, 71 – 10 = 61, 61 – 10 = 51, 51 – 7 = 44 -Subtracting by place value: 81 – 30 = 51, 51 – 7 = 44	

Properties that students should know and use are: Commutative property of addition (Example: 3 + 5 = 5 + 3) Associative property of addition (Example: (2 + 7) + 3 = 2 + (7+3)) Identity property of 0 (Example: 8 + 0 = 8) Students in second grade need to communicate their understanding of why some properties work for some operations and not for others. Commutative Property: In first grade, students investigated whether the commutative property works with subtraction. The intent was for students to recognize that taking 5 from 8 is not the same as taking 8 from 5. Students should also understand that they will be working with numbers in later grades that will allow them to subtract greater numbers from smaller numbers. This exploration of the commutative property continues in second grade. Associative Property: It is difficult for students to recognize that the associative property does not work for subtraction at this grade level because it is a challenge to determine all the possibilities.	

Differentiation Opportunities

Students may think that the 4 in 46 represents 4, not 40. Students need many experiences representing two-and three-digit numbers with manipulatives that group (base ten blocks) and those that do NOT group, such as counters, etc. When adding two-digit numbers, some students might start with the digits in the ones place and record the entire sum. Then they add the digits in the tens place and record this sum. Assess students' understanding of *a ten* and provide more experiences modeling addition with grouped and pregrouped base-ten materials as mentioned above.

When subtracting two-digit numbers, students might start with the digits in the ones place and subtract the smaller digit from the greater digit. Then they move to the tens and the hundreds places and subtract the smaller digits from the greater digits. Assess students' understanding of *a ten*

and provide more experiences modeling subtraction with grouped and pregrouped base-ten materials.

<< Previous Year

Last Updated: Thursday, September 27, 2012, 10:31AM

Atlas Version 7.2.6
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