Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

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

Wednesday, October 31, 2012, 4:04PM

Standard/Module: Proficiency with Operations 2.OA.4 (Week 24, 9 Weeks)

Stage 1: Desired Results

Standards Focus

- Major (70%) connects with 2.OA.1,2,3; 2.NBT.2,5,6,7,8,9; 2.G.2

Gr. 2 Proficiency Map

Standards

NYS: CCLS:Mathematics, NYS: 2nd Grade , Operations & Algebraic Thinking
2.OA Work with equal groups of objects to gain foundations for multiplication.

- 4. Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

Enduring Understandings	Essential Questions
1. A collection of objects can be one thing or one group. 2. Objects can be organized into groups and arrays. 3. An array involves joining equal groups and is one way to represent multiplication 4. An array can be expressed with a mathematical equation.	1. Why do we put items in an array? 2. How can we find the total number of items in a group? 3. How can we use math facts to help us create an array?

Critical Content

1. A group contains a given number of objects.

2. A rectangular array is an arrangement of objects in horizontal rows and vertical columns.

3. Arrays can be made out of any number of objects that can be put into rows and columns. (up to 5 rows and up to 5 columns)

4. All rows contain the same number of items and all columns contain an equal number of items.

5. Using repeated addition, adding the number of items in each row, will result in finding the number of items in the group. (4+4+4=12)

Skills	Vocabulary
1. Ability to identify what are rows, columns and groups	Tier two: rows, columns, groups

2. Create equal groups/sets 3. Create an array with up to 5 rows and up to 5 columns. 4. Write an addition equation using equal addends that expresses an array	Tier three: array, equation, addends, equal, repeated addition, multiplication, use group and set interchangeably

Stage 2: Assessment Evidence

Assessments

Building and Writing Arrays
Formative: Test: Written

Students work with square tiles to build arrays of numbers that are given to them and determine two different repeated addition equation for each array. Students justify their answers with precise mathematical vocabulary.

Stage 3: Learning Plan

Learning Activities	Resources
Learning activities for this will be similar to 2.OA.3. Students use rectangular arrays to work with repeated addition. This is a building block for multiplication in 3rd Grade. Students should explore this concept with concrete objects (e.g., counters, bears, square tiles, etc.) as well as pictorial representations on grid paper or other drawings. Based on the commutative property of addition, students can add either the rows or the columns and still arrive at the same solution. Students may arrange any set of objects into a rectangular array. Objects can be cubes, buttons, counters, etc. Objects do not have to be square to make an array.	www.iluminations.nctm.org www.illustrativemathematics.org

Geoboards can also be used to demonstrate rectangular arrays. Students then write equations that represent the total as the sum of equal addends as shown below.	

Differentiation Opportunities

Working in groups allows for natural differentiation through student discussions.

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