Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

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

Wednesday, October 31, 2012, 10:44AM

Standard/Module: Proficiency in Measurement/Data - 4.MD.4 (Week 23, 9 Weeks)

Stage 1: Desired Results

Standards Focus

- Supporting (20%) Connects with 4.NF.3d

4th Grade Proficiency Map.pdf

Standards

NYS: CCLS:Mathematics, NYS: 4th Grade , Measurement & Data

4.MD Represent and interpret data.

- 4. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots.

Enduring Understandings

1. A line plot can represent a data set of measurements in fractions of a unit (1/2, ¼, 1/8).
2. Information presented in line plots can be used to solve problems involving the addition and subtraction of fractions based on the data in the line plot.

Essential Questions

1. How do we display a data set of measurements in fractions of a unit?
2. How do we create a line plot?
3. How do we use the information presented on a line plot to solve problems involving the addition and subtraction of fractions?

Critical Content

1. Line plot

- Know steps in creating a line plot using a data set of measures in unit fractions
- Need to be able to use information from line plot to answer problems

2. Problems involving:

- Addition of fractions
- Subtraction of fractions

Skills	Vocabulary
1. Students will generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. 2. Students will display the data by making a line plot , where the horizontal scale is marked off in appropriate units – whole numbers, halves, or quarters. 3. Students will solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators by using visual fraction models and equations to represent the problem.	Tier 2: fraction, addition, subtraction, measurement Tier 3: line plot, display, data, unit

Stage 2: Assessment Evidence

Assessments

Formative: Performance: Skill Demonstration

Students measure objects in their desk to the nearest ½, ¼, or 1/8 inch. They display their data collected on a line plot. They answer how many objects measured ¼ inch? ½ inch? They also answer the question,"If you put all the objects together end to end what would be the total length of **all** the objects?"

Stage 3: Learning Plan

Learning Activities	Resources
This standard provides a context for students to work with fractions by measuring objects to an eighth of an inch. Students are making a line plot of this data and then adding and subtracting fractions based on data in the line plot. Have students create line plots with fractions of a unit (1/2, 1/4 , 1/8) and plot data showing multiple data points for each fraction. <u>Pose questions that students may answer, such as:</u>	**Instructional Resources/Tools** Fraction bars or strips Number Lines www.illustrativemathematics.org www.illuminations.nctm.org

• "How many one-eighths are shown on the line plot?" Expect two one-eighths as the answer. Then ask, "What is the total of these two one-eighths?" Encourage students to count the fractional numbers as they would with whole-number counting, but using the fraction name. • "What is the total number of inches for insects measuring 3/8 inches?" Students can use skip counting with fraction names to find the total, such as, three-eighths, six-eighths, nine-eighths. The last fraction names the total. Students should notice that the denominator did not change when they were saying the fraction name. Have them make a statement about the result of adding fractions with the same denominator. • "What is the total number of insects measuring 1/8 inch or 5/8 inches?" Have students write number sentences to represent the problem and solution such as, 1/8 + 1/8 + 5/8 = 7/8 inches. Use visual fraction strips and fraction bars to represent problems to solve problems involving addition and subtraction of fractions.	

Differentiation Opportunities

Differentiate activities and assignments by interest, ability-level, and hints/prompts.

<< Previous Year

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