Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

Collaboration / Math 5* / Grade 5 (Math Regional Curriculum)

Wednesday, October 31, 2012, 11:19AM

Standard/Module: Proficiency in Measurement & Data 5.MD.2 (Week 21, 6 Weeks)

Stage 1: Desired Results

Standards Focus

- Supporting (20%) Connects to 5.G.1

5th Grade Map.pdf

Standards

NYS: CCLS:Mathematics, NYS: 5th Grade , Measurement & Data

5.MD Represent and interpret data.

- 2. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots.

Enduring Understandings

1. Some questions can be answered by collecting and analyzing data, and the question to be answered determines the data that needs to be collected and how best to collect it. Data can be represented visually using tables, charts, and graphs. The type of data determines the best choice of visual representation.
2. Each type of graph is most appropriate for certain kinds of data. A line plot organizes data on a number line and is useful for showing visually how a set of data is distributed
3. Some questions can be answered using a survey. An appropriately selected sample can be used to make predictions about a population. Sample size is one factor that determines how close data from the sample will mirror the population.

Essential Questions

1. How can you organize data in a line plot?
2. How can you display the data collected in a survey?
3. How can you organize and represent measurement data?
4. How can you solve problems involving measurement data?

Critical Content

Data Collection and Representation

-Line plot

-Frequency Table

-Survey

-graphing

Skills	Vocabulary
1. Students will draw line plots, interpret points, and recognize outliers. 2. Students will collect data and record data in frequency tables and line plots. 3. Students will interpret results from line plots and frequency tables. 4. Students will make a line plot from data in a frequency table. 5. Students will use information in a line plot to solve problems involving the data.	Tier 2- analyze, sample, survey, collect, record, interpret Tier 3- Data, frequency table, line plot, outliers

Stage 2: Assessment Evidence

Assessments

Line Plots With Fractions
Formative: Test: Written

Students construct line plots from given data involving fractions and solve problems that relate to the data shown in the line plot.

Stage 3: Learning Plan

Learning Activities	Resources
This standard provides a context for students to work with fractions by measuring objects to one-eighth of a unit. This includes length, mass, and liquid volume. Students are making a line plot of this data and then adding and subtracting fractions based on data in the line plot. **Example**: Students measured objects in their desk to the nearest ½, ¼, or 1/8 of an inch then displayed data collected on a line plot. How many object measured ¼? ½? If you put all the objects together end to end what would be the total length of all the objects?	www.illustrativemathematics.org www.illuminations.nctm.org Nctm.org (Illuminations): Fractions in Every Day Life - This activity enables students to apply their knowledge about fractions to a real-life situation. It also provides a good way for teachers to assess students' working knowledge of fraction multiplication and division. Students should have prior knowledge of adding, subtracting, multiplying, and dividing fractions before participating in this activity. This will help students to think about how they use fractions in their lives, sometimes without even realizing it. The basic idea behind this activity is to use a recipe and alter it to serve larger or smaller portions.

Example: Ten beakers, measured in liters, are filled with a liquid. A line plot shows the amount of liquid in liters in 10 beakers. If the liquid is redistributed equally, how much liquid would each beaker have? (This amount is the mean.) Students apply their understanding of operations with fractions. They use either addition and/or multiplication to determine the total number of liters in the beakers. Then the sum of the liters is shared evenly among the ten beakers. Using a line plot to solve problems involving operations with unit fractions now includes multiplication and division. Revisit using a number line to solve multiplication and division problems with whole numbers. In addition to knowing how to use a number line to solve problems, students also need to know which operation to use to solve problems.	

Differentiation Opportunities

Use the tables for common addition and subtraction, and multiplication and division situations (Table 1 and Table 2 in the Common Core State Standards for Mathematics) as a guide to the types of problems students need to solve without specifying the type of problem. Allow students to share methods used to solve the problems. Also have students create problems to show their understanding of the meaning of each operation.

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