Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

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

Wednesday, October 31, 2012, 10:27AM

Standard/Module: Proficiency in Measurement/Data - 4.MD.2 (Week 7, 33 Weeks)

Stage 1: Desired Results

Standards Focus

- Supporting (20%) Connects with 4.MD.1 and 4.MD.3

4th Grade Proficiency Map.pdf

Standards

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

4.MD Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

- 2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

Enduring Understandings	Essential Questions
1. Using the four operations solve word problems involving distances, intervals of time, liquid volume, masses of objects, and money. 2. Using the four operations solve word problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. 3. Measurement quantities can be represented using diagrams such as number line diagrams that feature a measurement scale.	1. How do we solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money? 2. How do we represent measurement quantities using diagrams?

Critical Content

1. Four operations
2. Problem solving
3. Distance units of measurement
4. Liquid volume units of measurement
5. Units of mass
6. Intervals of time
7. Number line
8. Measurement scale
9. Money

10. Simple fractions
11. Decimals

Skills	Vocabulary
1. Students will use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money. 2. Students will represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	Tier 2: word problems, money, fraction, decimal, diagram Tier 3: operations, solve, distances, intervals of time, liquid volumes, masses, simple fraction, larger unit, smaller unit, number line, measurement scales

Stage 2: Assessment Evidence

Assessments

Measuring Around Us
Formative: Performance: Skill Demonstration

Students decide what measurement would be appropriate for a given item and then carry out the measurement of the item. If possible, students would have to say how many of that item would it take to get to the next unit. For example, a bookshelf is about one meter wide. I would have to put 1000 bookshelves side by side to make a kilometer of bookshelves.

Stage 3: Learning Plan

Learning Activities	Resources
It is important for students to see these measurements as much as possible. Given classroom constraints, it isn't always feasible to show students a physical, real-world example of these measurements. One way to foster an understanding of these units is to talk about how one might travel a distance for linear measurements, put items on a scale to show g vs. kg, and show a liter versus a mL and ask students to estimate how many eye droppers (mL) go into a liter bottle of soda. Students can use an analog clock face to count units of time and write equivalents. Use a two-column chart to document equivalents.	www.illustrativemathematics.org www.illuminations.nctm.org Yardsticks(meter sticks) and rulers (marked with customary and metric units) Teaspoons and tablespoons Graduated measuring cups (marked with customary and metric units)

In order for students to have a better understanding of the relationships between units, they need to use measuring devices in class.	*Is a Blue Whale the Biggest Thing There Is?* by Robert Wells

Differentiation Opportunities

Students may use a two-column chart to convert from larger to smaller units and record equivalent measurements. They make statements such as, if one foot is 12 inches, then 3 feet has to be 36 inches because there are 3 groups of 12.

Present word problems as a source of students' understanding of the relationships among inches, feet and yards.

Present problems that involve multiplication of a fraction by a whole number (denominators are 2, 3, 4, 5 6, 8, 10, 12 and 100). Scaffold the difficulty level. Problems involving addition and subtraction of fractions should have the same denominators.

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