Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

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

Wednesday, October 31, 2012, 10:26AM

Standard/Module: Proficiency in Measurement/Data - 4.MD.1 (Week 7, 33 Weeks)

Stage 1: Desired Results

Standards Focus

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

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.

- 1. Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.

Enduring Understandings

1. Metric units of length include meter, centimeter, and kilometer.
2. Metric units of mass include gram and kilogram.
3. Metric units of volume include liter and milliliter.
4. Customary units of weight include pound and ounce.
5. Units of time include hour, minute, and second.
6. Within a single system of measurement, measurements in a larger unit can be expressed in terms of a smaller unit.
7. Measurement equivalents can be expressed in a two – column table using conversions.

Essential Questions

1. What is a Metric unit?
2. What is a Customary unit?
3. How can we express measurements in a larger unit in terms of a smaller unit?
4. How do we record measurement equivalents in a two-column table?

Critical Content

1. Meter
2. Centimeter
3. Kilometer
4. Gram
5. Kilogram
6. Pound
7. Ounce
8. Liter

9. Milliliter
10. Hour
11. Minute
12. Second
13. Larger unit
14. Smaller unit
15. Measurement equivalents
16. Two-column table
17. Conversion
18. Metric unit

Skills	Vocabulary
1. Students will recognize the relative sizes of measurement units within one system of units including m, cm, km; g, kg; lb, oz,; l, ml; hr, min, sec. 2. Students will express measurements in a larger unit in terms of a smaller unit within a single system of measurement. 3. Students will record measurement equivalents in a two – column table. 4. Students will recognize metric units as well as customary units.	Tier 2: express Tier 3: relative size, measurement, units, system, larger unit, smaller unit, equivalents, two-column table, meter, centimeter, kilometer, gram, kilogram, pound, ounce, liter, milliliter, hour, minute, second, conversion, metric unit, customary unit

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	www.illustrativemathematics.org www.illuminations.nctm.org *Is a Blue Whale the Biggest Thing There Is?* by Robert Wells

count units of time and write equivalents. Use a two-column chart to document equivalents.	

Differentiation Opportunities

Putting all measurements on one two-column chart might be very confusing for the students, and they should be taught there are different categories of measurement (linear, capacity, mass, time, etc). Students should create separate two-column charts for each category or measurement and attach it to a graphic organizer about a category of measurement. For example, a two-column chart showing equivalencies between linear metric unit measurements and another two-column chart showing equivalence between standard units might go into a Frayer Model or other graphic organizer (a foldable maybe?) that describes what linear measurement is and what it is used for. Students could explore real-world items that would be measured in linear measurements, and identify which unit would be best suited to the item. That would also go into the graphic organizer.

<< Previous Year

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