Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

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

Wednesday, October 31, 2012, 10:59AM

Standard/Module: Proficiency in Measurement & Data 5.MD.1 (Week 1, 26 Weeks)

Stage 1: Desired Results

Standards Focus

- Supporting (20%) Connects to 5.G.2

5th Grade Map.pdf

Standards

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

5.MD Convert like measurement units within a given measurement system.

- 1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

Enduring Understandings

1. Some attributes of objects are measurable and can be quantified using unit amounts.
2. Mathematics content and practices can be applied to solve problems.
3. Some problems can be solved by first finding and solving a sub-problem(s) and then using that answer(s) to solve the original problem.

Essential Questions

1. How can you change from one customary unit of length to another?
2. How do you change from one unit of capacity to another?
3. How can you convert between customary units of weight?
4. How can you convert metric units of length?
5. How do you convert metric units of capacity?
6. How can you convert between metric units of mass?
7. How do you find hidden questions to solve multiple-step problems?

Critical Content

Measurement

– Relationships between measurement units of the same **length** can be expressed as an equation

(e.g., 1 ft = 12 in.; 1m = 100cm).

- Relationships exist that enable you to **convert** between units of length by multiplying or dividing.

– Relationships between measurement units of the same **capacity** can be expressed as ratio

(e.g., 1qt to 2pt or 1qt = 2pt; 1 L to 1,000 mL or 1 L = 1,000 mL).

– Relationships between measurement units of **weight/mass** can be expressed as ration

(e.g., 1 lb to 16 oz or 1 lb = 16 oz; 1 kg to 1,000g or 1 kg = 1,000 g).

Problem Solving
- multi-step

Skills	**Vocabulary**
1. Students will convert from one unit of customary length (inches, feet, yards, and miles) to another. 2. Students will convert from one unit of customary capacity (gallons, quarts, pints, cups, and fluid ounces) to another. 3. Students will convert from one customary unit of weight (ounces, pounds, and tons) to another and apply this skill to compare quantities. 4. Students will convert one metric unit of length (kilometer, meter, centimeter, and millimeter) into another. 5. Students will convert from one metric unit of capacity (liter and milliliter) to another. 6. Students will convert from one metric unit of mass (milligrams, grams, and kilograms) to another. 7. Students will find the hidden question or questions to solve multiple-step problems.	Tier 2- convert, capacity, weight, length, mass, Tier 3- Customary, metric, multiplication, subtraction

Stage 2: Assessment Evidence

Assessments

Converting Measurements
Formative: Test: Written

Students convert given measurements and apply these conversions to real-world problems

Stage 3: Learning Plan

Learning Activities	**Resources**
5.MD.1 calls for students to convert measurements within the same system of measurement in the context of multi-step, real-world problems. Both customary and standard measurement systems are included; students worked with both metric and	Yardsticks(meter sticks) and rulers (marked with customary and metric units) Teaspoons and tablespoons

customary units of length in second grade. In third grade, students work with metric units of mass and liquid volume. In fourth grade, students work with both systems and begin conversions within systems in length, mass and volume. Fifth graders build on their prior knowledge of related measurement units to determine equivalent measurements. Prior to making actual conversions, they examine the units to be converted, determine if the converted amount will be more or less than the original unit, and explain their reasoning. They use several strategies to convert measurements. When converting metric measurement, students apply their understanding of place value and decimals. Fifth grade students should explore how the base-ten system supports conversions within the metric system. **Example:** 100 cm = 1 meter. Students should gain ease in converting units of measures in equivalent forms within the same system. To convert from one unit to another unit, the **relationship** between the units must be known. In order for students to have a better understanding of the relationships between units, they need to use measuring tools in class. The number of units must relate to the size of the unit. For example, students have discovered that there are 12 inches in 1 foot and 3 feet in 1 yard. This understanding is needed to convert inches to yards. Using 12-inch rulers and yardsticks, students can see that three of the 12-inch rulers are equivalent to one yardstick (3 × 12 inches = 36 inches; 36 inches = 1 yard). Using this knowledge, students can decide whether to multiply or divide when making conversions. Once students have an understanding of the relationships between units and how to do conversions, they are ready to solve multi-step problems that require conversions within the same system. Allow students to discuss methods used in solving the problems. Begin with problems that allow for renaming the units to represent the solution before using problems that require renaming to find	Graduated measuring cups (marked with customary and metric units) www.illustrativemathematics.org www.illuminations.nctm.org Nctm.org (Illuminations): - *Discovering Gallon Man*. Students experiment with units of liquid measure used in the customary system of measurement. They practice making volume conversions in the customary system. Nctm.org (Illuminations): – *Do You Measure Up?* Students learn the basics of the metric system. They identify which units of measurement are used to measure specific objects, and they learn to convert between units within the same system.

the solution.	

Differentiation Opportunities

When solving problems that require renaming units, students use their knowledge of renaming the numbers as with whole numbers. Students need to pay attention to the unit of measurement which dictates the renaming and the number to use. The same procedures used in renaming whole numbers should not be taught when solving problems involving measurement conversions. For example, when subtracting 5 inches from 2 feet, students may take one foot from the 2 feet and use it as 10 inches. Since there were no inches with the 2 feet, they put 1 with 0 inches and make it 10 inches.

<< Previous Year

Last Updated: Thursday, October 25, 2012, 12:49PM

Atlas Version 7.2.6
© Rubicon International 2012. All rights reserved