This lesson will help you teach the Metric System

Subjects: Math, Science

Grades: 4, 5, 6

Title – Metrics   
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Primary Subject – Math   
Secondary Subjects – Science   
Grade Level – 4th to 6th

**Objective:**

To familiarize intermediate grades 4-6 with the metric system.

**Materials Needed:**

Tools of measurement (one for each group of 4 students):   
Tape measures   
Rulers (metric and standard)   
Measuring cups   
Balance scales   
Small manipulatives (paper clips, bingo chips, etc.)   
Large & small beakers or cylinders marked with metric units of measurements   
Assorted sized cups   
Meter sticks

**Strategy:**

Begin by having the class split into small groups of four students. Make sure that each group has a set containing the “tools of measurement” listed above. All of the sets will contain the same items except one assessment item. Next, invite one person from each group (or the entire class, if you prefer) to   
come to a main desk or centrally located table. Simply ask them to measure the items on the table. Do not specify whether they’re to use the metric or standard (U.S.) form of measurement.

Have the rest of the class measure various items in the classroom (i.e. desks, chairs, etc.) including parts of their own bodies (i.e. head, arms, wrist, etc.) while waiting.

After a short time, discuss the ways students used the tools of measurement, and how they measured; pointing out the different ways of measuring. For example, a marble could be measured in inches, millimeters, or weighed in ounces or grams. Also discuss the problems they might have incurred determining a fraction of an inch. Talk about the “base 10″ system the metric system uses in the terms   
mentioned in the performance assessment below. After making comparisons of the two systems of measuring, launch into your study of the metric system by explaining the prefixes associated with the word METER, and then let them open their bags of small manipulatives and begin using the METRIC SYSTEM ONLY to discover the ease of using this way of measuring. Explain how the meter stick   
works while having them measure desk, chairs, blackboards, etc. Explain how the scales are used when weighing smaller objects such as paper clips, bingo chips, etc. Show the ways of using liquid measurements by using the assorted containers to pour liquids (such as water or colored water) into the beakers or cylinders marked with metric units.

**Performance Assessment:**

Your assessment should be brief and in the form of a quiz on the following vocabulary:

LENGTH WEIGHT CAPACITY   
Kilo + meter = kilometer or 1000 Meters Kilograms Kiloliters   
\*Hecto + meter = Hectometer or 100 Meters \* Hectograms Hectoliters   
\*Deka + meter = Dekameter or 10 Meters \* Dekagrams Liter   
\*Deci + meter = Decimeter or .1 (1/10) Meter \* Decigrams Deciliters   
Centi + meter = centimeter or .01 (1/100) Meters \* Centigrams Centiliters   
Milli + meter = Millimeter .001(1/1000) Meters Milligrams Milliliters

\* Not as commonly used

Ask them to find the one item you placed in their bags that is a particular size or weight. You will know, because you have placed the pre-measured item in the bag. For example, if a penny weighs 3g, groups 1 & 4 will have only 1 penny in their bags. While groups 2 & 3 will have only 1 marble that weighs 3g. Your   
“hands-on” assessment question will be, “Find the item in your bag that weighs 3g.”