

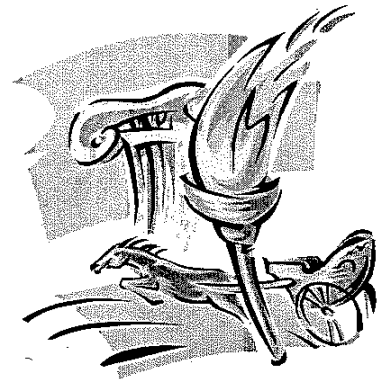
Mini Metric Olympics

Description: Students work in groups of 5 or 6 on activities that will familiarize them with metric units. They estimate and measure in a Metric Olympics setting. It is recommended that students practice these skills beforehand.

Age Group: Upper elementary.

Time Required: 15-20 minutes.

Key Questions: Why do we sometimes use an estimate before measuring? How can our group make reasonably accurate estimations?



Content Expectations Addressed: Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.

Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.

Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful analysis of evidence that guides decision-making and the application of science through history and within society.

All objects and substances have physical properties that can be measured.

Teacher Background: Another name for the metric system of measurement is SI. The letters SI stand for “international system” in French. The SI or metric system is now the standard measurement system for most fields of science and is used in almost all of the countries in the world. The centimeter is the standard unit for measuring length in the SI system of measurement. There are about 2 1/2 centimeters in an inch. The milliliter is the standard unit for measuring volume in the SI system of measurement. There is a direct relationship between the size of the centimeter and that of the milliliter. One cubic centimeter is equal to one milliliter. The gram is the standard unit for measuring mass in the SI system of measurement. The mass of one cubic centimeter of water is one gram. So it can be seen that all the units in SI are related to each other. Additionally, the multiples and fractions of the units are based on tens and powers of ten, making it convenient to convert from one unit to another.

Discovering STEM Program

Science Process Skills: Estimating, predicting and recording.

Materials:

Task cards	Pencils
Score sheets	Cotton Balls
Bucket of water	Mables
Empty bucket	Balance Scale
Centimeter graph paper	Paper Straws
Measuring tape	Paper Plates
Masking tape	Sponge
Sponge	

Procedure: Students participate in six events at six different stations that are set up in the room. Each station has a task card with instructions and also has the needed materials. Each person is assigned to a certain event to start with. The students read the instructions aloud. Each student records a prediction about the event. Each person then has one turn to perform in the event. Then he or she measures and records the results to the nearest whole unit. The difference between the guess or estimate and the actual measured result is determined and recorded. Students move from station to station with a signal from the person in charge.

Resources:

Pluckrose, Henry, Math Counts Weight Children's Press, 1995

Pluckrose, Henry, Math Counts Length Children's Press, 1995

Pluckrose, Henry. Math Counts Capacity Children's Press, 1995

Measuring and Sorting A first grade unit/kit supporting the Battle Creek Area Common Core Science Curriculum