

Teaching Unit G (Continued)

Math Background

Linear Measurement

In earlier units, children developed their linear measurement skills working with centimeter rulers. In this unit, children revisit non-standard linear units and then create and use an inch ruler and a yardstick. Activities include selecting the most appropriate customary units, rounding measures to the nearest chosen unit, and converting between units.

Mass, Capacity, and Time

In the first lesson of this unit, children explore non-standard methods of measuring mass, capacity, and time. Activities include ordering objects from least to greatest mass by estimating with hands, creating a homemade balance scale, arranging containers from least to greatest capacity using estimation and then checking the order using water, measuring capacity of containers using small objects, and discussing methods of measuring time without modern clocks. In the Measurement Day lesson, children have opportunities to look at the relationship between customary units of capacity, find referents for customary and metric mass and customary weight, select the correct customary or metric tool to make a measurement, make a sand timer, and estimate the length of 1 minute.

Weight Versus Mass

Weight is the measure of the gravitational force by which an object is attracted to Earth. The weight of an object changes with its distance from Earth's center; this is why an astronaut seems "weightless" in outer space. Mass is the measure of the amount of matter in an object; it does not change with the object's position.

Both the customary and the metric systems have units of weight and units of mass. However, the most commonly used measurement units in the customary system (ounces and pounds) are units of weight and the most commonly used measurement units in the metric system (milligrams, grams, and kilograms) are units of mass. While it is important to use these terms correctly (a ball weighs 4 ounces or a nickel has a mass of 5 grams), do not expect young children to grasp the difference between mass and weight.

Temperature

In the Measurement Day Lesson, children have opportunities to estimate and measure in Fahrenheit and to make a table of the week's daily high and low temperatures.

