

## Teaching Unit F (Continued)

### Math Background

#### Capacity

Volume is a measure of the amount of space an object takes up. Capacity is a measure of how much a container can hold. In the customary system, as students see in Lesson 2, the volume of solids is usually measured in units such as cubic yards, cubic inches, and so on. The volume of liquids is measured in gallons, cups, ounces, and so on. We use the volume units to measure capacity as well. One cup of milk will fit into a container with a capacity of one cup.

#### Time

Working with time provides opportunities to review what students have learned about fractions. Months are fractions of a year; days are fractions of a week, a month, or a year. We often talk about fractions of an hour. Many real-world calculations based on time require students to know how to find elapsed time. This type of calculation often requires an understanding of fractions of an hour. For example, if I leave home at 9:15 A.M. and get to my destination at 12:30 P.M., how long did the trip take? An ability to calculate using fractions of an hour will allow students to decide that the trip took  $3\frac{1}{4}$  hours.

#### Temperature

Negative numbers can be challenging for students to relate to the real world. Temperatures below zero provide a natural way to reinforce the meaning of negative numbers. Activities in which students pace out the difference between  $-6$  degrees Fahrenheit and 12 degrees Fahrenheit help students develop proficiency with temperature calculations, but also develop a strong sense of the relationship between negative and positive integers.

#### Estimation

People who do a lot of measuring find that being able to estimate measurements is an important skill. Sometimes it can replace measuring. Often it can be used to check a measurement. Students need to develop strong personal benchmarks to estimate accurately, for example:

- My uncle is about 6 feet tall.
- My cat weighs about 10 pounds.
- Our juice pitcher holds about 12 cups.

The activities in Estimation Day help students to develop these personal benchmarks.