

Topic 14 / Overview ▼

TOPIC 14

Solve Time, Capacity, and Mass Problems



OVERVIEW

Topic 14 focuses on extending students' understanding of time and solving problems involving estimation and measurement of time intervals, liquid volume (capacity), and mass.

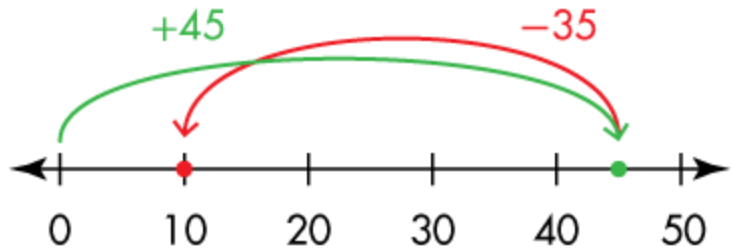
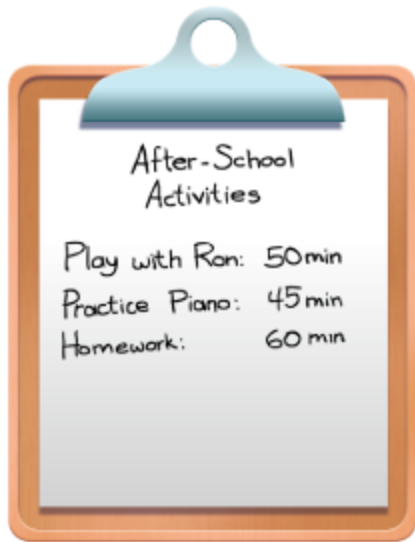
TIME

To tell time on an analog clock, your child needs to understand the meaning of the numbers and tick marks on a clock. To solve problems involving elapsed time, your child should understand the relationship between hours and minutes, the difference between A.M. and P.M., and that time intervals can be added or subtracted to solve problems.

WORD PROBLEMS WITH ELAPSED TIME

Elapsed Time Your child will solve word problems involving addition and subtraction to measure quantities of time. To solve this problem, your child might use a number line to show time intervals:

Joaquin made a list of the time he should spend on different activities. Joaquin has practiced playing the piano 35 minutes so far. How much longer does he need to practice?



$$45 - 35 = 10$$

Joaquin has to practice for 10 more minutes.

LIQUID VOLUME AND MASS

Liquid Volume Your child will learn to estimate and measure the liquid volume of containers in terms of liters. Liquid volume is the amount a container can hold. Finding capacity using a marked 1-liter container reinforces your child's sense of the size of a liter and how the capacity of other containers compares to a liter.

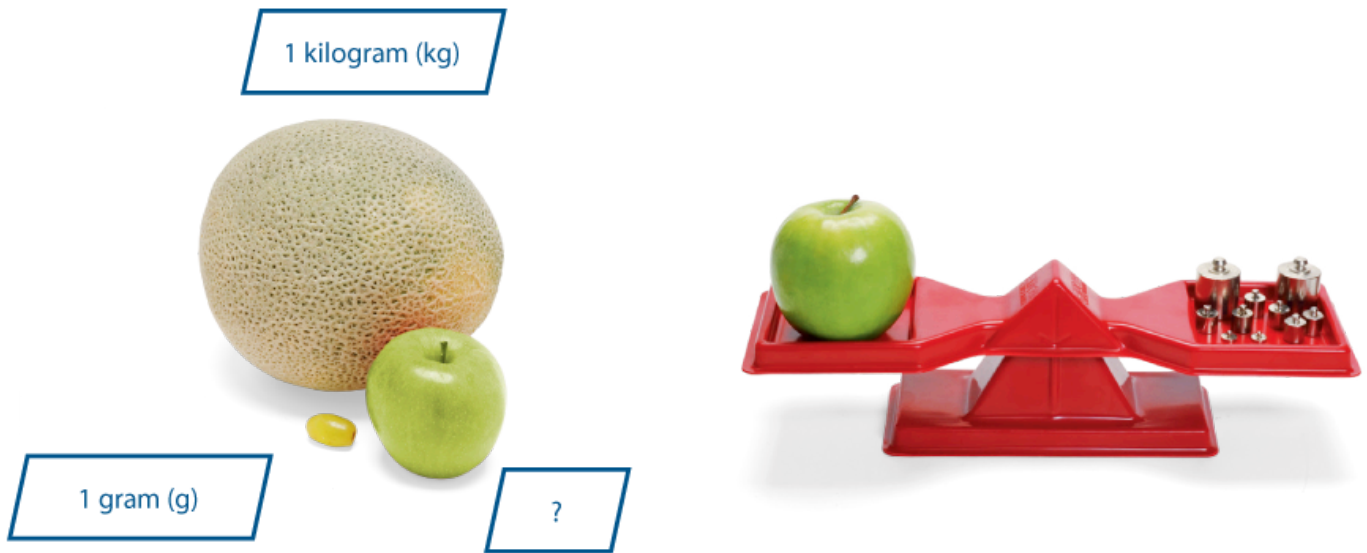


This water bottle holds about 1 liter.



$\frac{1}{4}$ L or 2 L

Mass Your child will choose appropriate units and tools to estimate and measure mass in grams and kilograms. Mass is the amount of matter in an object. Knowing that this melon has a mass of about 1 kilogram and the grape has a mass of about 1 gram, your child might estimate that the apple has a mass of about 250 kilograms.



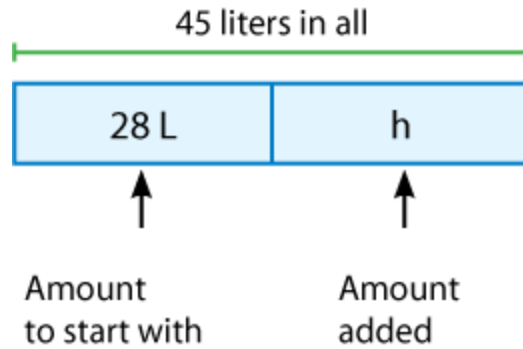
Using a pan balance and gram and kilogram weights shows that the apple has a mass of 262 grams.

MEASUREMENT IN WORD PROBLEMS

Your child will solve word problems involving measurement. These problems can be represented with bar diagrams and equations.

Here is an example:

In a juice factory, one 50-liter container had 28 liters of juice in it. An hour later, it had 45 liters of juice. How many liters of juice were added?



$$28 + h = 45$$

$$45 - 28 = h$$

Subtract to solve the problem.

$$45 - 28 = 17$$

17 liters of juice were added to the container.

CONNECT THE MATH

You can connect the math in this topic to everyday experiences. Have your child identify the hour on a clock and explain whether the hour is A.M. or P.M. Explore liquid volume in the kitchen with measuring cups and bowls. Finally, have your child estimate the mass of an object and determine whether it should be measured in kilograms or grams.

TOPIC 14 LESSONS

- Lesson 14-1** [Time to the Minute](#)
- Lesson 14-2** [Units of Time: Measure Elapsed Time](#)
- Lesson 14-3** [Units of Time: Solve Word Problems](#)
- Lesson 14-4** [Estimate Liquid Volume](#)
- Lesson 14-5** [Measure Liquid Volume](#)
- Lesson 14-6** [Estimate Mass](#)
- Lesson 14-7** [Measure Mass](#)

Lesson 14-8

Solve Word Problems Involving Mass and Liquid Volume

Lesson 14-9

PROBLEM SOLVING

Reasoning