Measuring Liquid Volume

Module 2
Session 1

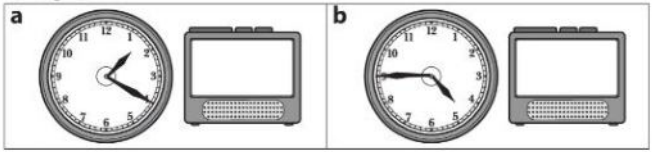
Today’s Activities

- Time checkpoint assessment
- Measuring liquid volume

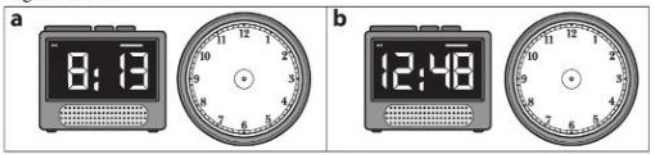
Time Checkpoint

Time Checkpoint

1 What time is it? Fill in the digital clock with the time you see on the analog clock.



2 What time is it? Fill in the analog clock with the time you see on the digital clock.



3 Jane is making cookies. It takes her 5 minutes to get out all the ingredients, 10 minutes to mix them all together, 3 minutes to put cookie dough on the pan, and then 12 minutes to bake the cookies. Use this information to solve both problems below. Show your work using numbers, sketches, or words.

a How long does it take Jane to make the cookies, from start to finish?

b Jane finished making the cookies at 4:30 p.m. What time did she start?

Measuring Liquid Volume

- Today you are going to be measuring liquid volume
  - What do you already know about liquid volume?
  - What kinds of liquids do your families buy at the store? How are some of those liquids packaged?
  - Which holds more… a can of soda or a bottle of water? What about a carton of juice and a jug of milk?
  - Can you name any units of measure for liquid volume?
  - Which would you like for breakfast - a cup of milk, a quart of milk, or a gallon of milk? Why?

Small Group Work

- The class will be divided into groups of three, and given a small and a large measuring cup.
- Find the mark near the top of the small measuring cup that shows 250 milliliters.
- Find the mark near the top of the large measuring cup that shows 1,000 milliliters (1 liter).

Small Group Work Discussions

- How do the two measuring containers compare in size?
- How much bigger is the large measuring cup? How much smaller is the measuring cup?
- How much more will the large measuring cup hold than the small measuring cup? How do you know?
- What do the different markings on the containers indicate about how much they hold?

Small Group Work Measuring

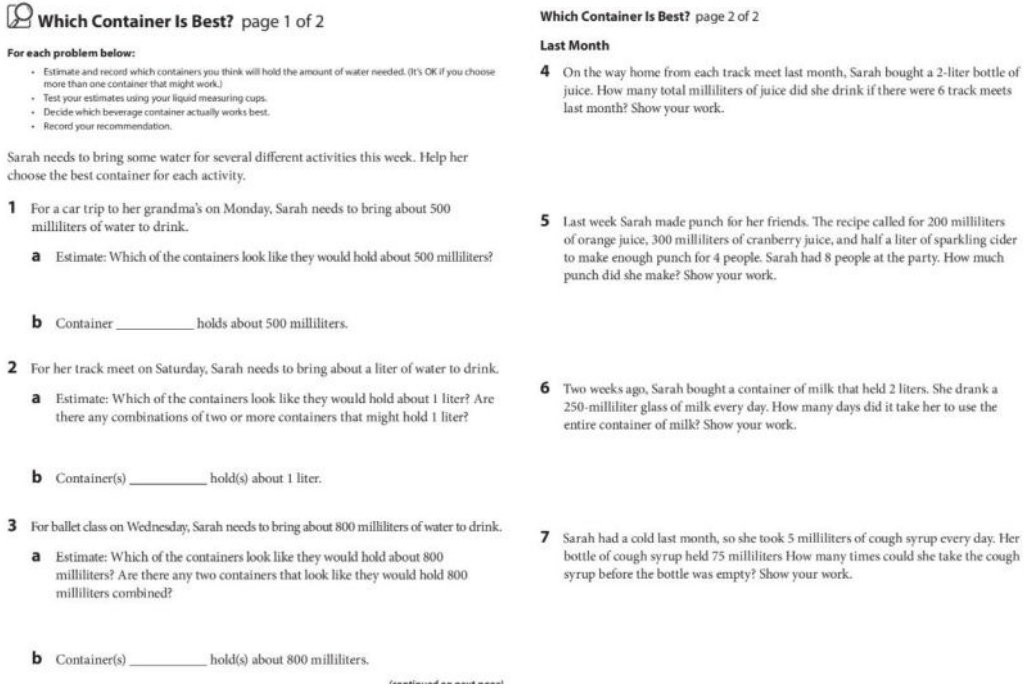
- Each group needs to gather their materials and take them back to their group.
- Fill your small measuring cup with water to the 250 millimeter mark and pour it into the large measuring cup. Repeat this step until the large measuring cup is full to the 1 liter mark. Make sure to keep track of how many pours it takes to do so.
- Next, fill your small measuring cup with 100 milliliters of water, and estimate how many pours this size it will take to fill the large measuring cup.
- Pour the water you just measured from the small to the large measuring cup, and repeat this process until the 1 liter container is full. Make sure to keep track of how many pours it takes to fill the liter container.
- Share your observations with the class.

Small Group Work Measuring Continued

- When the teacher has held an empty water bottle up for reference, with your group fill your measuring cup(s) with the amount of water you think it will take to fill the bottle almost to the top.
    - Think in terms of the bottles of water, juice, or pop you could get at the store.
    - Are those bottles filled to the very top? Why or why not?
- Each group will pour the water they just measured into their own water bottle.
    - Share your observations
    - About how many milliliters did the bottle hold? How do you know?
    - How does the amount of water in the bottle compare to the large measuring cup? To the small measuring cup?
    - If you had a container that only held 50 milliliters, how many pours would it take to fill the water bottle?

Which Container is Best? Student Book pages 115 and 116

- Each group has their own containers to use. Each container is marked with a letter which will be used to record your estimates.
- Only the problems on the first page require the measuring materials.
- Focus on completing problems 1, 2, and 3.
- After you finish page 115, return your measuring containers and materials before completing page 116.



Which Container Is Best? page 1 of 2

For each problem below:

- Estimate and record which containers you think will hold the amount of water needed. (It's OK if you choose more than one container that might work.)
- Test your estimates using your liquid measuring cups.
- Decide which beverage container actually works best.
- Record your recommendation.

Sarah needs to bring some water for several different activities this week. Help her choose the best container for each activity.

1 For a car trip to her grandma's on Monday, Sarah needs to bring about 500 milliliters of water to drink.

a Estimate: Which of the containers look like they would hold about 500 milliliters?

b Container _____ holds about 500 milliliters.

2 For her track meet on Saturday, Sarah needs to bring about a liter of water to drink.

a Estimate: Which of the containers look like they would hold about 1 liter? Are there any combinations of two or more containers that might hold 1 liter?

b Container(s) _____ hold(s) about 1 liter.

3 For ballet class on Wednesday, Sarah needs to bring about 800 milliliters of water to drink.

a Estimate: Which of the containers look like they would hold about 800 milliliters? Are there any two containers that look like they would hold 800 milliliters combined?

b Container(s) _____ hold(s) about 800 milliliters.

Which Container Is Best? page 2 of 2

Last Month

4 On the way home from each track meet last month, Sarah bought a 2-liter bottle of juice. How many total milliliters of juice did she drink if there were 6 track meets last month? Show your work.

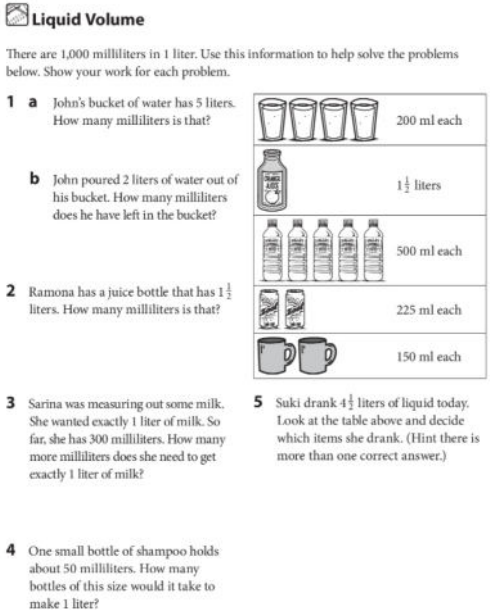
5 Last week Sarah made punch for her friends. The recipe called for 200 milliliters of orange juice, 300 milliliters of cranberry juice, and half a liter of sparkling cider to make enough punch for 4 people. Sarah had 8 people at the party. How much punch did she make? Show your work.

6 Two weeks ago, Sarah bought a container of milk that held 2 liters. She drank a 250-milliliter glass of milk every day. How many days did it take her to use the entire container of milk? Show your work.

7 Sarah had a cold last month, so she took 5 milliliters of cough syrup every day. Her bottle of cough syrup held 75 milliliters How many times could she take the cough syrup before the bottle was empty? Show your work.

Optional

Complete Liquid Volume on page 117 in your student book.



Liquid Volume

There are 1,000 milliliters in 1 liter. Use this information to help solve the problems below. Show your work for each problem.

1 a John's bucket of water has 5 liters. How many milliliters is that?

b John poured 2 liters of water out of his bucket. How many milliliters does he have left in the bucket?

2 Ramona has a juice bottle that has $1\frac{1}{2}$ liters. How many milliliters is that?

3 Sarina was measuring out some milk. She wanted exactly 1 liter of milk. So far, she has 300 milliliters. How many more milliliters does she need to get exactly 1 liter of milk?

4 One small bottle of shampoo holds about 50 milliliters. How many bottles of this size would it take to make 1 liter?

	200 ml each
	$1\frac{1}{2}$ liters
	500 ml each
	225 ml each
	150 ml each

5 Suki drank $4\frac{1}{2}$ liters of liquid today. Look at the table above and decide which items she drank. (Hint there is more than one correct answer.)