

CHAPTER

23

Measure Capacity

Chapter Outcomes:

- Solve problems involving capacity.



You may not even know it, but you use capacity every day! It's all around you - in the glass of juice you pour, the box you put your toys in, even in your bowl of cereal! You decide to pour a glass of juice. You take a glass and the pack of juice. You begin to pour - when something else catches your attention. You keep pouring and pouring until...splash! Juice is all over the counter! What happened? You have exceeded the capacity of the glass.

Getting Ready for Chapter 23

Choose the most appropriate unit from the box that can be used for measuring the capacity of the following containers.

litres millilitres

1.

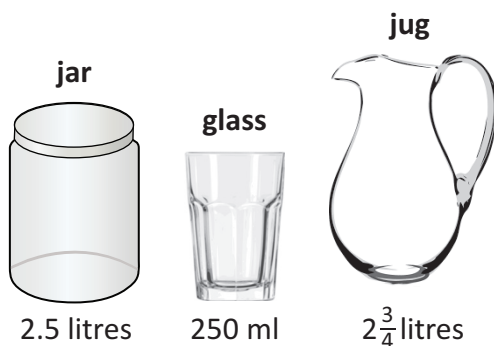


2.



3. Convert 3 litres to millilitres.

4. Arrange the containers from greatest capacity to least capacity.



5. Approximate the amount of liquid in the bottle to the nearest litre.



1 450 ml

Estimate Capacity

Teaching Point 1:

How do you estimate the capacity of containers?

Capacity is the amount a container will hold.

1 millilitre



1 litre



$\frac{1}{2}$ litre or 500 ml



$\frac{1}{4}$ litre or 250 ml



The containers above are benchmark items. You can use benchmark items to estimate capacity.

Estimate the capacity of the jug below.



Step 1: Choose the most appropriate unit.

A millilitre is a very small amount. The best unit would be the litre.

Step 2: Estimate.

Imagine how many litre cartons it would take to fill the jug.

Step 3: Measure.

Fill a litre container and pour it into the jug. Do this until the jug is full and count how many litre containers were used.

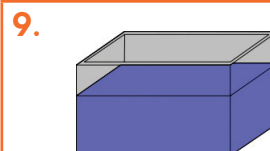
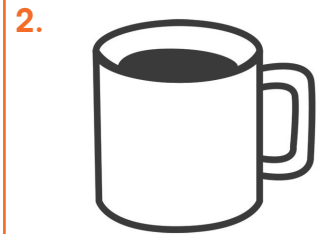
Activity 1:

Which is the best unit for measuring the capacity of each container?

1. one dose of medicine millilitres litres	2. water in a swimming pool millilitres litres
3. a small water bottle millilitres litres	4. glass of water millilitres litres
5. water in a baby's bathtub millilitres litres	6. a cereal bowl millilitres litres
7. water from the shower millilitres litres	8. a large pan millilitres litres

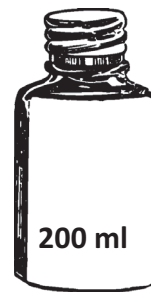
Activity 2:

Use real objects. Estimate the capacity of each by comparing it with a benchmark item.



Solve Problems in Capacity

1. How many $\frac{1}{2}$ litre bottles can be filled from a container holding 5 litres?
2. 5.6 litres of lime juice is used to fill up some glasses, each with a capacity of $\frac{1}{4}$ litre. What is the maximum number of glasses that can be filled?
3. A water truck holds 270 litres of water. The water is pumped equally into tanks at 15 homes. How many litres of water did each home receive?
4. Mother fills some glasses with all the milk from a 1 litre carton. The capacity of each glass is 250 ml. How many glasses does she fill?
5. A bucket holds 16 litres of water. The water is used to completely fill some $\frac{1}{2}$ litre bottles.
 - a) How many bottles were filled?
 - b) 6 bottles of water were used for drinking. How much water is left?
6. A bottle contains 5 litres of oil when full. A cook uses 750 millilitres of the oil to make roti. How much oil was left in the bottle?
7. Mr. Thomas uses 5 litres of pineapple juice and 2 litres of orange juice to make a fruit punch. How many 250 ml servings of punch will Mr. Thomas make?
8. The diagram on the right shows a medicine bottle containing 200 millilitres (ml) of medicine.



1 dose = 10 ml

Mark took two doses per day for 5 days. Each dose is 10 ml.

- a) If the medicine spoon has a capacity of 5 ml, how many spoonfuls of medicine will he take over the 5 days?
- b) How many millilitres of medicine will remain in the bottle?

Chapter Review

Answer the questions.

1. Which unit would you use to measure each container's capacity? Write millilitre or litre.

a)



b)



2. Brian filled the two containers, as shown below, with water. One container held 2 litres and the other container held 250 millilitres.



Which container held 250 millilitres?

3. Two containers are shown below. Which container holds more?



4. Arrange the following capacities in ascending order.

0.35 litre, $\frac{1}{4}$ litre, 1 500 millilitre

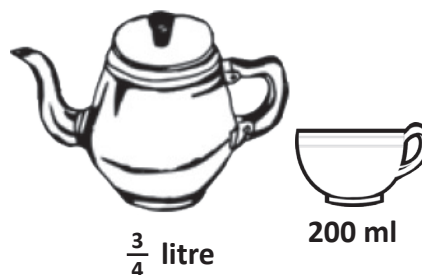
5. Choose the better estimate for the container below.



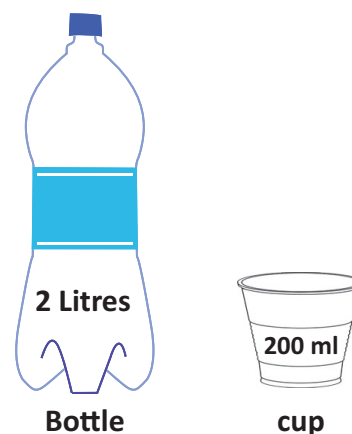
5 ml 1 litre

6. How many 250 ml glasses of water will it take to fill a 1 litre jug?

7. A full teapot holds $\frac{3}{4}$ litre of tea. Mother pours the tea to fill teacups that have a capacity of 150 ml.



- a) How many teacups can she fill?
b) How much tea will be left?
8. The bottle in the diagram below holds 2 litres when full. The cup holds 200 ml when full.



- a) Jada pours 4 cups of water into the bottle. What fraction of the capacity of the bottle is filled?
b) How many MORE cups of water is needed to fill the bottle?
9. Shania uses 5 ml of lotion a day. How long will it take her to use a $\frac{3}{4}$ Litre bottle of lotion?