



Liter/Litre Measurement Set

The Liter Measurement Set is a great tool for classroom and learning centers. The set of four containers includes one each of 2 liters, 1 liter, 500 milliliters, and 250 milliliters to model common measurements, such as a 2 liter bottle of soda and a 500 ml bottle of water. Each container has incremental markings featuring metric and standard measurements. The set is made of durable plastic and is safe for students to use by themselves.

Caution: Do NOT use these containers to boil water or hold dangerous or toxic chemicals.

 **WARNING:**
CHOKING HAZARD - Small parts.
Not for children under 3 years.

Introduction

Discuss with students the units of metric liquid measurement. Ask students to identify the 250 ml bottle, the half liter bottle, the liter bottle, and the 2 liter bottle. Have students place the bottles in order from greatest to least in volume. Point out abbreviations that are printed on the bottles and allow time for discussion of what the abbreviations stand for, such as ml = milliliters, L = Liters, and oz = ounces. Give students time to use water and the bottles for free exploration.

Note: When reading measurements, be aware of the meniscus, or the curvature of the water's surface. Water "sticks" to the walls of the containers, creating an uneven layer. Therefore, measurements should be taken at the lowest point (see figure to the right). Place the containers on a table and read the meniscus at eye level to get an accurate reading.



Equivalency Challenge

Start with the empty liter set. Using the 1 liter, 500 ml and 250 ml containers, estimate with the class how much of each will fill up the 2 liter container. Then, fill the 2 liter container using one container at a time. Record the results on a graph or chart such as the one shown below. Write the students' estimates on the chart first, and then compare with the exact measurements.

	# needed to fill 2 L	# needed to fill 1 L	# needed to fill 500 ml	# needed to fill 250 ml
2 L		X	X	X
1 L			X	X
500 ml				X
250 ml				

Converting from Standard to Metric

Use the following table to convert liquid measurements from standard to metric or from metric to standard.

To Change...	To...	Multiply by...
Gallons	Liters	3.7854
Quarts	Liters	0.9463
Pints	Liters	0.4732
Liters	Gallons	0.2642
Liters	Quarts	1.0567
Liters	Pints	2.1134

Try some sample problems and then verify your computing by checking the bottles to see that the measurements are correct.

For example:

- If you have 2 quarts of water, how many liters is that?
 $2 \times 0.9463 = 1.89$ liters
- If you have .500 liters of juice, how many pints is that?
 $.500 \times 2.1134 = 1.06$ pints
- If you have 4 liters of soda, how many gallons is that?
 $4 \times 0.2642 = 1.0568$ gallons

Think Quick Questions

Challenge students to find the answers to the questions below. Formulate new questions by keeping the same question format and changing the numbers and quantities.

1. How many ml are equal to 2 L?
2. How many ml are equal to 1 L?
3. Which is more, 16 oz. or 100 ml?
4. Which is less, 4 oz. or 400 ml?
5. If you had a full 1 liter bottle and half of a 500 ml bottle, how much would you have altogether in milliliters?
6. Which bottle or bottles can hold 900 ml of liquid?
7. How many 250 ml water bottles would it take to fill up the 2 L bottle?

Create a Conversion Recipe

Use recipes like the one below to determine volume. Use the containers to help you measure. Make recipes simple or difficult depending on which skills are being taught. Have students create their own recipes using either standard or metric measurements. Wash the containers by hand with warm, soapy water after use.

Sample Recipe: Fruit Punch

2 liters cranberry juice

500 ml pineapple juice

500 ml orange juice

1 liter ginger ale, chilled

Combine the juices in a large container. Refrigerate for several hours and stir in ginger ale just before serving.

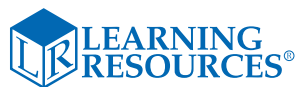
Answer: Makes 4 liters total.

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LER 1206 Liter Set

LER 1207 Gallon Measurement Set

LER 2462 Measuring Jars



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