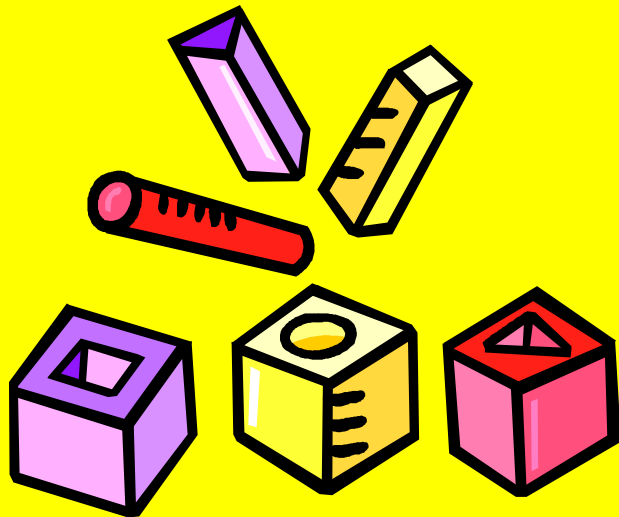


Metric Mania



Lesson 3: Volume

English vs. Metric Units

Which is larger?

A. 1 liter or 1 gallon

B. 1 liter or 1 quart

C. 1 milliliter or 1 fluid ounce



1 fl oz = 29.573 ml

1 12-oz can of soda
would equal
approximately 355 ml.

1 gallon = 3.79 liters



It would take approximately $3 \frac{3}{4}$
1-liter bottles to equal a gallon.

1 quart = 0.946 liters



KL**L**

Metric Units

CL**mL**

Volume is the amount of space an object takes up.

The base unit of volume in the metric system is the **liter** and is represented by **L** or **l**.

Standard: 1 liter is equal to one cubic **decimeter**

Metric Units

1 liter (L) = 1000 milliliters (mL)

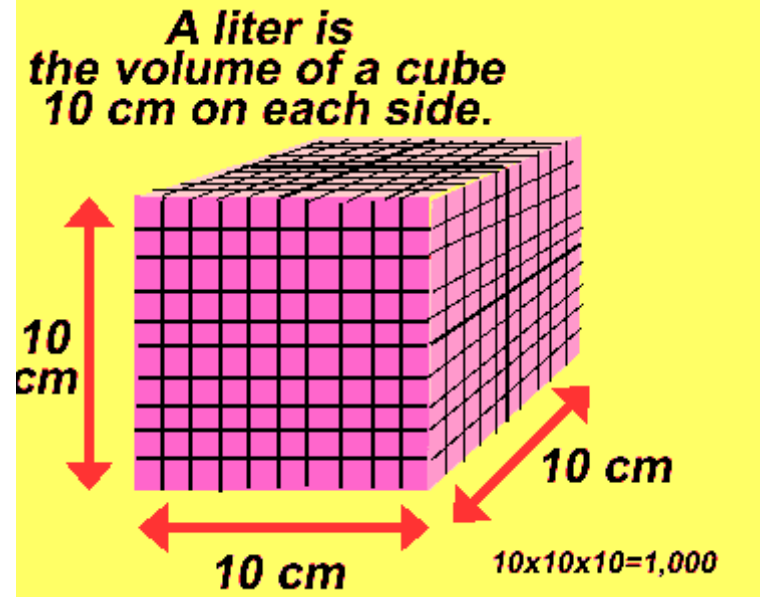
1 milliliter (mL) = 1 cm³ (or cc) = 1 gram*

Which is larger?

A. 1 liter or 1500 milliliters

B. 200 milliliters or 1.2 liters

C. 12 cm³ or 1.2 milliliters*



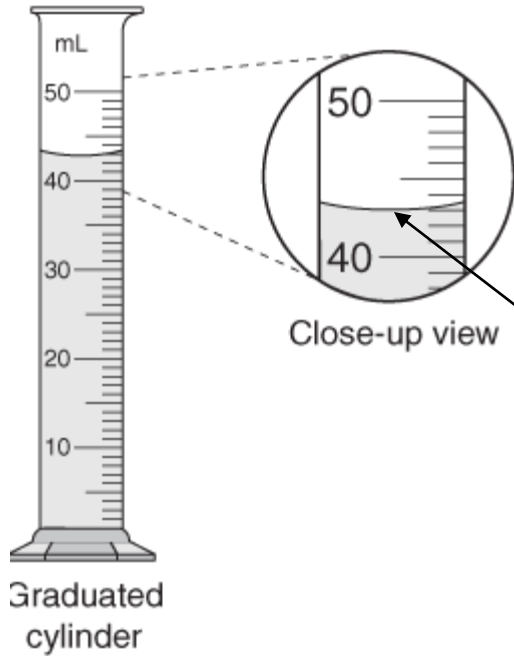
Click the image to watch a short video about volume.



* When referring to water

Liter Image: <http://www.dmtturner.org/Teacher/Pictures/liter.gif>

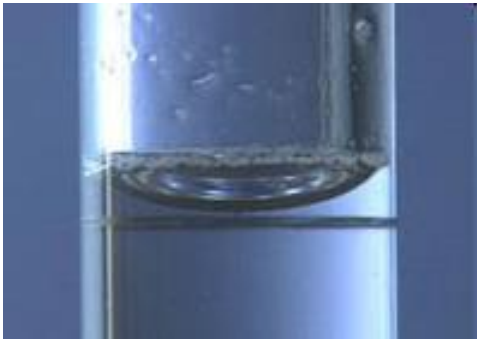
Measuring Volume



We will be using **graduated cylinders** to find the volume of liquids and other objects.

Read the measurement based on the bottom of the **meniscus** or curve. When using a real cylinder, make sure you are eye-level with the level of the water.

What is the volume of water in the cylinder? _____ mL

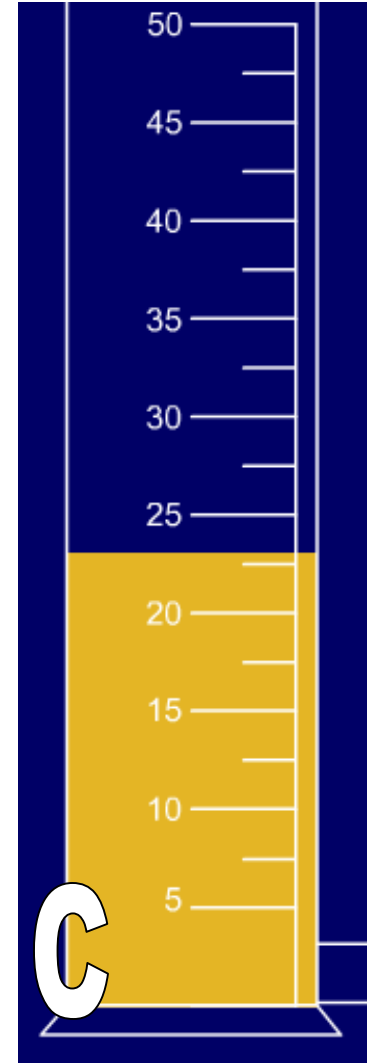
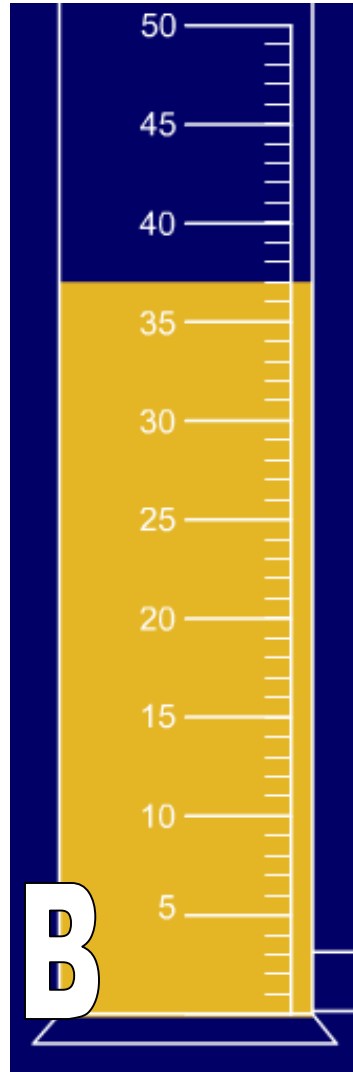
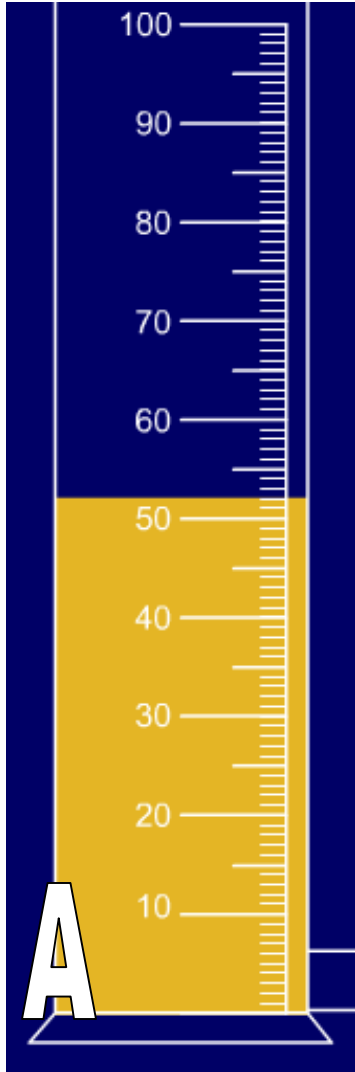


What causes the meniscus?

A concave meniscus occurs when the molecules of the liquid attract those of the container. The glass attracts the water on the sides.

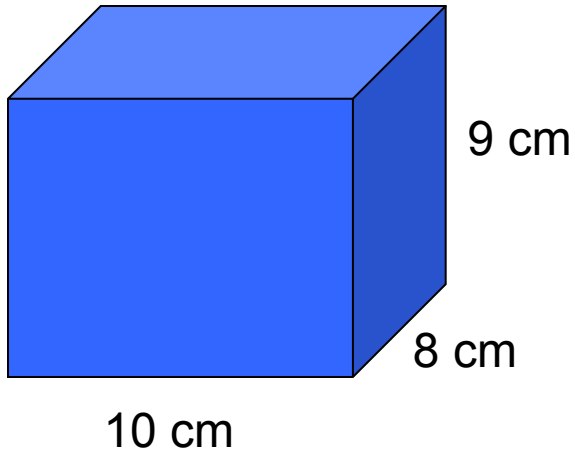
Measuring Liquid Volume

What is the volume of water in each cylinder?



Pay attention to the scales for each cylinder.

Measuring Solid Volume



We can measure the volume of regular object using the formula **length x width x height**.

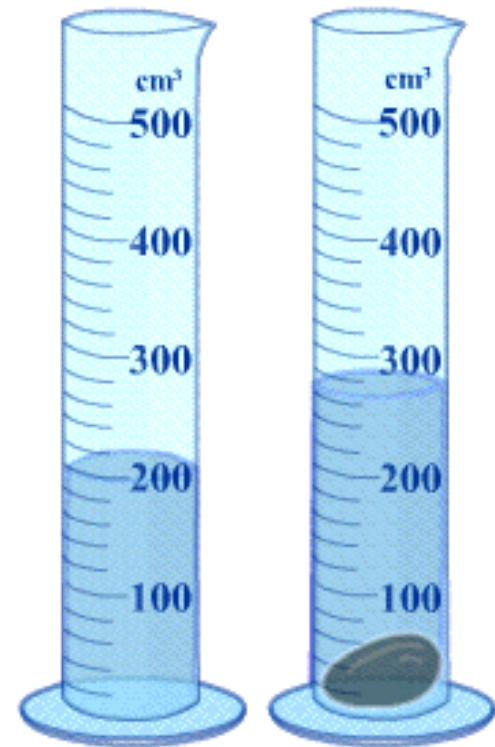
$$\underline{\quad} \times \underline{\quad} \times \underline{\quad} = \underline{\quad}$$

We can measure the volume of irregular object using **water displacement**.

Amount of H₂O with object = _____

About of H₂O without object = _____

Difference = Volume = _____



[Click here for an online activity about volume.](#)
Choose Lessons → Volume & Displacement