

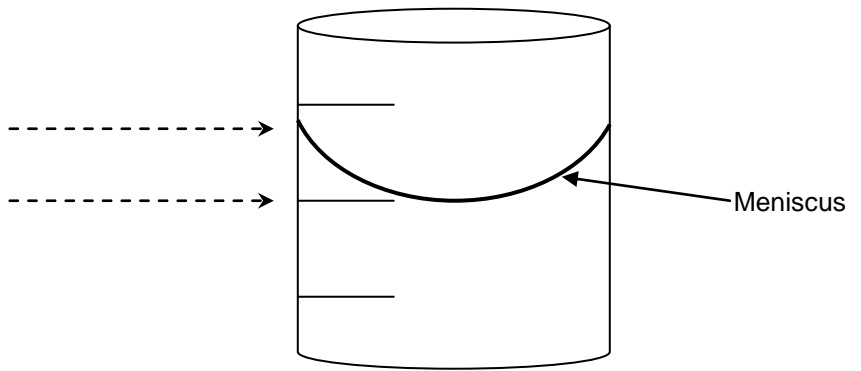
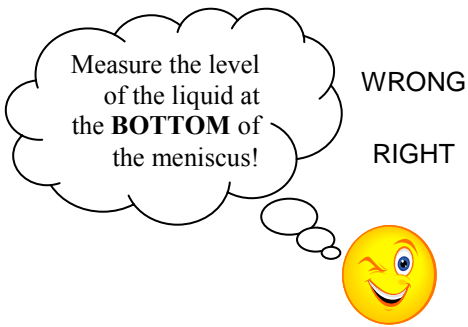
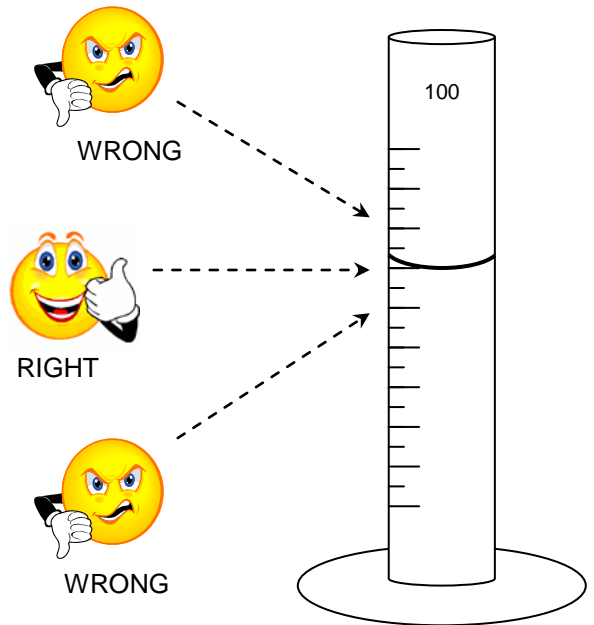
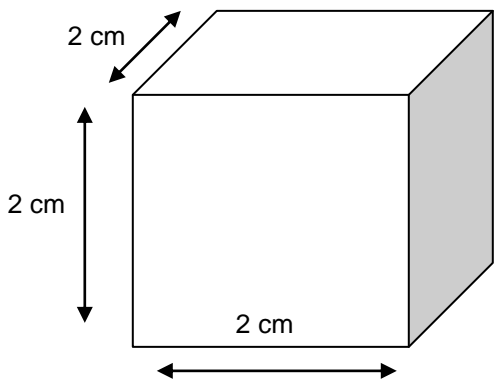
# WHAT IS VOLUME?

Volume is the amount of space that an object takes up. A basketball takes up more space than a golf ball, so it is said to have a larger volume.



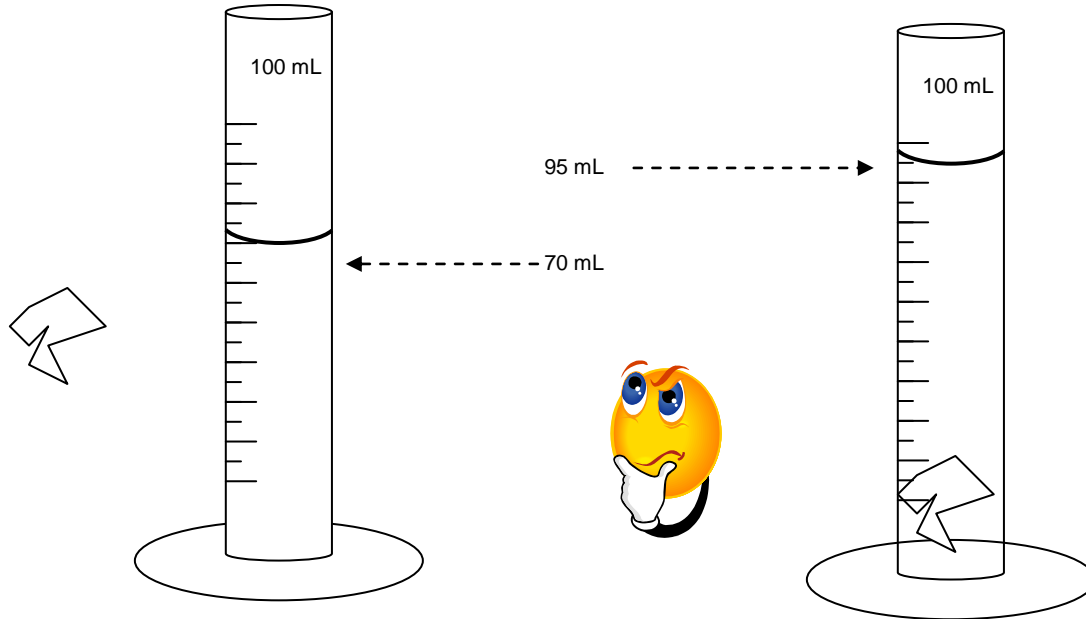
You can determine the volume of a cube by measuring the length, width and height of the cube and multiplying them together. You can measure the volume of a liquid by pouring the liquid into a graduated cylinder and measuring the level against the markings on cylinder. You'll notice that the where the liquid levels off in a graduated cylinder is slightly concave or curved upward. This is called a meniscus. You should measure the height of the liquid with your eye(s) level at the bottom of the meniscus.

Volume of a regular object







# HOW DO WE DETERMINE THE VOLUME OF REGULAR & IRREGULARLY SHAPED OBJECTS?

To calculate the volume of an irregular object, you can use the water displacement method. This of course depends on the size of the object. For most smaller objects, a graduated cylinder works fine. First put a known quantity of water in an empty graduated cylinder and note the starting volume. Then add the object to the water. You should see an increase in volume. Subtract the beginning volume from the final volume and you have the volume of the object.



Subtracting the final volume from the initial volume will give you the volume of the irregularly shaped object. In this case, the volume of the object would be 15 milliliters

If you were to take two different substances with different volumes and measure their mass, you would **most likely** find that their masses differ as well. Similarly, if you were to take two substances of different masses and measure their volume, you would **most likely** find that their volumes would differ as well. The important thing here is that this is not always the case! Remember that I said most likely. Objects can differ in their masses but have the same volume. Likewise, substances can differ in their volumes, but have equal masses. The samples of Aluminum and Lead below have different volumes, but equal masses. The table to the left shows equal volumes of some common substances and how their mass vary even though they have equal volume.

Material	Mass (grams)	Volume (cm <sup>3</sup> )
Lead 	113	10
Aluminum 	27	10
Water 	10	10
Wood 	5	10

