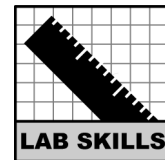


Name: _____

Date: _____



10.1 Measuring Volume

How do you find the volume of an irregular object?

It's easy to find the volume of a shoebox or a basketball. You just take a few measurements, plug the numbers into a math formula, and you have figured it out. But what if you want to find the volume of a bumpy rock, or an acorn, or a house key? There aren't any simple math formulas to help you out. However, there's an easy way to find the volume of an irregular object, as long as the object is waterproof!

Materials

- Displacement tank
- Water source
- Disposable cup
- Beaker
- Graduated cylinder
- Sponges or paper towel
- Object to be measured

Setting up the displacement tank

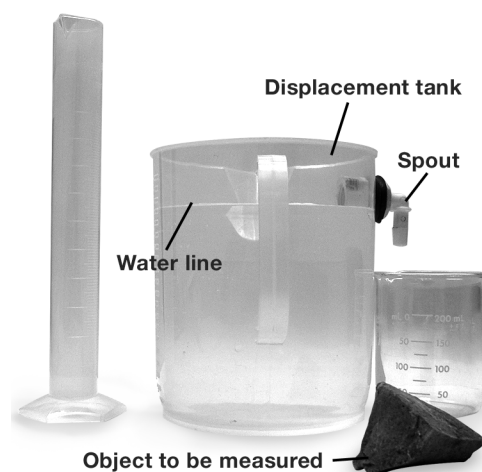
Set the displacement tank on a level surface. Place a disposable cup under the tank's spout. Carefully fill the tank until the water begins to drip out of the spout. When the water stops flowing, discard the water collected in the disposable cup. Set the cup aside and place a beaker under the spout.

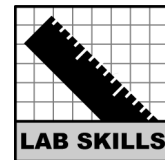
Stop and think

- a. What do you think will happen when you place an object into the tank?

- b. Which object would cause more water to come out of the spout, an acorn or a fist-sized rock?

- c. Why are we interested in how much water comes out of the spout?





- d. Explain how the displacement tank measures volume.

Measuring volume with the displacement tank

1. Gently place a waterproof object into the displacement tank. It is important to avoid splashing the water or creating a wave that causes extra water to flow out of the spout. It may take a little practice to master this step.
2. When the water stops flowing out of the spout, it can be poured from the beaker into a graduated cylinder for precise measurement. The volume of the water displaced is equal to the object's volume.
Note: Occasionally, when a small object is placed in the tank, no water will flow out. This happens because an air bubble has formed in the spout. Simply tap the spout with a pencil to release the air bubble.
3. If you wish to measure the volume of another object, don't forget to refill the tank with water first!