Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_

**Properties Solids, Liquids and Gases (shape, volume)**

**Background:** Solid, liquid, and gas are three states of matter. Each state of matter has its own properties.In this lab, the properties you will investigate are the shape and volume of a solid, a liquid, and gases *Volume* is the amount of space taken up by an object.

**What is a solid?**

1. Look at the block. What is its shape?
2. Measure the length, width, and height of the block with a metric ruler. Record your answers in cm.

|  |  |
| --- | --- |
| Length (cm) |  |
| Width (cm) |  |
| Height (cm) |  |

1. Find the volume of the block by using the formula l x w x h = volume

\_\_\_\_\_\_cm x \_\_\_\_\_\_cm x \_\_\_\_\_\_cm x = \_\_\_\_\_\_\_cm3

1. What do you think will happen to the shape of the block when you put it into a beaker?
2. Place the block into the beaker. What happened to the shape of the block?
3. What state of matter is the block in? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Describe the characteristics of the block and its state of matter based on your observations.

**What is a liquid?**

1. Fill a beaker 2/3 of the way full with water. Observe the water in the beaker. What shape is the water?
2. What is the volume of the water in the beaker? Record your answer in ml. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ml
3. What do you think will happen to the shape and volume of the liquid when it is poured into another container?
4. Pour the water from the beaker into a graduated cylinder. How did the shape and volume of the water change?
5. What state of matter is water in?
6. Describe the characteristics of water and its state of matter based on your observations.

**What Is a Gas?**

1. Take a syringe and pull the plunger out to the limit without removing it from the syringe. What shape is the air inside the syringe?
2. What is the volume?
3. What do you think will happen to the air if you plug the open end of the syringe with your finger and then press down on the plunger?
4. Try it. What happened?
5. What is the state of matter of the air in the syringe?

**Extra:**

1. Fill the syringe with water and stop off the open end with your finger. What do you think will happen to the water if you press the plunger while the other end is blocked?
2. Try it. What happened to the water?
3. How does this compare with what happened to the air in the same situation? Explain.