Density Lab name: ____________________ per: _____

Make sure that your scale is working. Place all of the weights at zero to see that your scale is balanced. If it is not balanced ask your instructor for help.

All measurements and calculations should be rounded to the nearest tenth.

*We will fill these in together.

**Obtain a graduated cylinder and determine its mass to the nearest tenth of a gram. Be sure to subtract the mass of the cylinder before recording the mass of the water.

Mass of cylinder = ___________ grams

***Use a metric ruler and a calculator to determine the volume of the bar. Measure the length, width, and depth to the nearest .1 cm, then multiply to get the volume in cm^3.

The formula for density is . . .

$$\underset{\text{(grams)}}{\textbf{Mass}} \div \underset{(cm^3)}{\textbf{Volume}} = \underset{(g/cm^3)}{\textbf{Density}}$$

Round to nearest .1

Substance	Mass (grams)	Volume (cm^3)	Density (g/cm^3)
100 ml saltwater (yellow)	**	*	
100 ml freshwater (green)	**	*	
golf ball		*	
lead sinker		*	
bar of aluminum		***	
cube of aluminum		1 cm^3	
cube of pine		1 cm^3	
cube of copper		1 cm^3	
cube of iron		1 cm^3	
cube of ebony		1 cm^3	

Answer the questions on back of this sheet.

1. What other metric unit for volume is exactly the same as a "cm^3"? NOTE: "cc" is another way to write "cm^3".

2. Based on the results of your lab, the density of saltwater is ________ g/cm^3.

This means that every milliliter (ml) of saltwater has a mass of ________ grams.

So, what would be the mass of 80 ml of saltwater?

3. Based on the results of your lab, what would be the mass of 800 ml of freshwater? (Show your work.)

4. Look at the densities of the materials in your lab (see other side of this sheet). Determine which of the materials on the list would float in the saltwater by looking at their densities. List them here.

5. Based on your results, what would be the density of the water in a swimming pool? Include units.

6. What would be the density of the water in a glass of water? Include units.

7. Mercury has a density of 13.6 g/cm^3. Based on your results, would lead float in a container filled with mercury?

8. When we talk about velocities we use "miles/hour" (miles per hour). Based on these units, what is the formula for calculating speed in miles/hour?

Assignment: Go to **bengalfrosh.com** , select **Benson's Earth Science Site**, select **Unit 1**, and then select **Density Review**. Watch and listen to the Pencast.