Name:_____

DENSITY SIMULATION

Density is a physical property of matter that is calculated by dividing the mass of an object by its volume. Volume can be computed for a regular object by multiplying length x width x height. Another way to compute volume is by submerging an object in a liquid. Record the starting volume of the liquid and the final volume after the object has been submerged. Then subtract the starting volume from the final volume.

Procedure

1. On the Blocks menu (top right) select Same Mass.
2. One at a time, take a block, lower it into the liquid, and record its volume. If it floats, you will need to hold it under the water to record its volume. Then compute each block's density.

Block	Mass	Volume	Density	Sink/Float
Blue				
Yellow				
Green				
Red				

3. Repeat for Same Volume.

Block	Mass	Volume	Density	Sink/Float
Blue				
Yellow				
Green				
Red				

4. Repeat for Same Density.

Block	Mass	Volume	Density	Sink/Float
Blue				
Yellow				
Green				
Red				

5. Repeat for Mystery. This time measure the mass of each object. After computing the density, select Show Table and identify each object.

Block	Mass	Volume	Density	Object
A.				
B.				
C.				
D.				

PLEASE SHOW YOUR WORK...

A block of wood hos o moss of 180 grams. It is 10.0 cm long, 6.0 cm wide, and 4.0 cm thick. What is its volume and density?

A 500 gram piece of metal has a volume of 2.75 cm^3. What is its density?

An irregularly shaped stone was lowered into a graduated cylinder holding a volume of water equal to 20 mL. The height of the water rose to 30.2 mL. If the mass of the stone was 25 g, what is the density?

PURPOSE
What is the density of water?

PROCEDURE
1. Using your TBB, find the mass of an empty graduated cylinder.
2. Add the amount of water as indicated in the chart below.
3. Find the mass of the graduated cylinder with water in it.
4. Subtract the mass of the graduated cylinder and record the mass of the water only.
5. Calculate the density of water.

DATA

| Volume of Water | MASS | | | Density of Water D = M÷V (g/mL) |
	Empty Graduated Cylinder	Water and Graduated Cylinder	Water	
10 mL				
35 mL				
88 mL				
57 mL				
100 mL				
7 mL				

ANALYSIS (PG. 64)
- What did you notice about the relationship between the volume of water and the mass of water?
- What did you notice about the density of water?
- Did you have any problems with your measurements or with anything else?

CONCLUSION (PG. 64)
Use writing prompt.