

Name: \_\_\_\_\_

Class: \_\_\_\_\_

## Determining Density

### **Purpose:**

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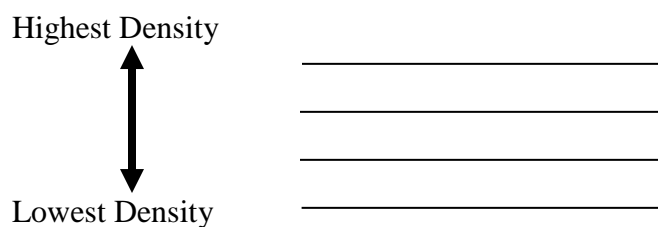
### **Equipment:**

- Graduated Cylinder
- Balance
- \_\_\_\_\_



### **Hypothesis:**

I think the density of the experimental materials will rank in this order:



### **Procedure:**

1. Complete the hypothesis by ranking all the materials being tested by the class in your predicted order of density.
2. Determine the mass of an empty graduated cylinder. Record your results.
3. With as much accuracy as possible, pour 20 ml of your experimental material into your graduated cylinder. Record the mass of the graduated cylinder with the substance.
4. Repeat step 3, adding more substance to the graduated cylinder, 4 more times until you have a mass of 100 ml of your test substance. Be sure to record the mass after each 20 ml.
5. Calculate the mass of your experimental material for each trial as well as the mass to volume ratio – report this value as a decimal.
6. When you have your average mass to volume ratio, record it on the class tracking sheet.

Note: Consider the following safety precaution:

- Water spilled on the floor can be very slippery, please be careful to clean up any messes you make.

**Data:**

Volume (ml)	Mass of Container (g)	Mass of Container and Substance (g)	Mass of Substance (g)	Ratio of Mass to Volume in Decimal Form (g/ml)
20				
40				
60				
80				
100				
Average				

The mass to volume ratio of the experimental materials rank in this order:

Highest Ratio



Lowest Ratio

_____	_____
_____	_____
_____	_____
_____	_____

**Discussion:**

Complete the following.

1. What does the mass to volume ratio represent? \_\_\_\_\_
2. At which volume should your results be most accurate? \_\_\_\_\_
3. Discuss any sources of error in the experiment. (A source of error is anything that could cause you to get the wrong results, whether it be your overall experiment, or a difference from trial to trial.)

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