

Name: _____ Period: _____ E.N. _____

Mineral Density Lab

Check to make sure the mineral samples of **Pyrite**, **Quartz** and **Galena** are small enough to fit in the graduated cylinder.

1. Place each mineral sample individually on the balance and record its mass in the data table.
2. Fill the cylinder with water to the 50-ml. mark.
3. Carefully place one sample into the cylinder of water. Try not to spill any of the water.
4. Read the level of the water on the scale of the graduated cylinder.
5. Record the level of the water with the sample in it.
6. Calculate the volume of water displaced by the sample.
To do this, subtract the volume of water without the sample from the volume of water with the sample. Record your answer.
7. Calculate the density of the samples by using this formula.

$$\text{Density} = \frac{\text{Mass of Mineral}}{\text{Volume of water displaced by the mineral}}$$

Data Table

	Pyrite	Quartz	Galena
Mass of the Mineral (g)			
Volume of water without mineral (ml)	50	50	50
Volume of water with Mineral (ml)			
Volume of water displaced (ml)			
Density (g/cm ³)			

Analyze and Conclude

1. Which mineral had the highest density? _____ The lowest density? _____
2. How does finding the volume of the water that was displaced help you find the volume of the mineral itself? _____

3. Why won't the procedure you used in this lab work for a substance that floats or one that dissolves in water? _____
4. Pyrite is sometimes called "fool's gold" because its color and appearance are similar to real gold. How could a scientist determine if a sample was real gold?

5. Does the shape or size of a mineral sample affect its density? Explain.

