Class Copy ---Density Lab

**Introduction:** Density plays a big role in Earth Science from convection in the atmosphere to the reason why our Earth has a layered interior. Density is a physical property of a substance and the density of a substance is the relationship between the mass of the substance and how much space it takes up (volume). The mass of atoms, their size, and how they are arranged determine the density of a substance. Objects with the same volume but different mass have different densities.

**Objective:** To calculate the density of various substances and compare their densities.

Density equals the mass of the substance divided by its volume**.**

**D = Mass (grams) / Volume (milliliters).**

**Procedure: (Write out a step-by-step procedure to find density of the substances)**

**Data and Observations:** Copy the data table onto your lab report.

*Data Table 1. Density of various substances.*

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| Substance | Mass (Round to nearest 0.1 grams) | Volume (Round to the nearest milliliter). | Density (g/ml) |
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**Analysis:** Calculate the density for each substance using the equation D = Mass (grams) / Volume (milliliters) and write it in the data table.

**Conclusion questions:** *Answer these questions in complete sentences.*

1. List the substances from order of greatest density to least density.
2. Compare your results with the accepted values of the substances. How did you do?
3. Mercury has a density of 13.6 g/ml. Based on your results, would lead float in a container filled with mercury?
4. Which substances would float in saltwater?
5. Describe two experimental errors possible in this experiment.

**Extension:** There are two unknown metals (get them from your teacher). Figure the density of each metal and use the chart to determine the name of the metal. \_\_\_\_\_\_\_\_\_\_ Teacher Initial