**Mystery Metals**

**Purpose:** Identify samples of metal using the intensive property of density.

**Materials:**

Several samples of common metals Electronic balance

Graduated cylinder Density of common metals table

**Procedures:**

1. Each group will obtain a sample of one mystery metal.
2. Obtain the mass by placing it on the balance and record it o the board in the Class Data Table.
3. Measure the volume using the water displacement method and record it on the board in the Class Data Table.
4. On your own paper to be turned in for a minor grade, calculate the density of each mystery metal using the density equation: D = m/v
5. Compare your answers to the values in the Densities of Common Metals Table. Identify each sample as the type of metal it is.
6. Calculate your percent error for each of your density calculations using the following equation:

% error = $\frac{true value – experimental value}{true value}$ x 100

NOTE: The true value is the density listed in the table. The experimental value is the answer you got from your calculation.

Class Data Table

Period \_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
| **Sample** | **Mass in grams (g)** | **Volume in milliliters (mL)** |
| Metal A |  |  |
| Metal B |  |  |
| Metal C |  |  |
| Metal D |  |  |
| Metal E |  |  |