Name_____Per_____

Title: Determining Density of an Object

Problem: What measurements *and* units are needed to determine the density of a solid?
How can we use density to identify what an unknown substance is?

Materials: Ruler, triple beam, displacement tin, calipers

Formulas:

Volume Rectangular Solid	Volume Cylindrical Solid	Volume Sphere
$V = L \times W \times H$	$V = \pi r^2 h$	$V = \frac{4}{3}\pi r^3$

$$\text{DENSITY} = \frac{\text{Mass}}{\text{Volume}}$$

Procedure:

1. Locate the 5 objects at your lab station.
2. Choose one object at a time and write a desption of it in your data table.
3. Determine the best way to find the objects volume (cm^3). Calculate & record this in your data table.
4. Find the mass (g) of the item. Record this in your data table
5. Calculate the density (g/cm^3) of the object by dividing mass by the volume. Record this number in your data table.
6. Repeat steps 2-5 for remaining objects.
7. Using the actual densities of substances from the given table, Figure 2, determine the substance that the object is made out of.

Figure 1 Data Table

Object	Method/ formula	Mass	Volume	Density	Substance?

Figure 2 Known Densities

Substance	Lead (Pb)	Copper(Cu)	Iron (Fe)	Rubber	Pine	Aluminum	Marble
Density g/cm^3	11.37	8.92	7.90	1.1-1.9	.35-.5	2.67	2.6-2.84