

## Density (laboratory directions)

Every substance has its own density. Substances are often identified by their density. The formula for determining density is  $D = M/V$  (density is equal to the mass of a substance divided by its volume). Therefore in order to determine the density of a particular substance you must know TWO things about the substance, its mass and its volume.

- Volume -
- 1a. Shape is regular ..... (2)
  - 1b. Shape is irregular ..... (4)
  2. Measure and record the length (l), width (w), and the depth (d) ..... (3)
  3. Use the formula  $V = l \times w \times d$  to determine the volume of the object.  
Answers are in cc, or  $\text{cm}^3$  ..... (7)
  - 4a. Irregular object will fit easily into a graduated ..... (5)
  - 4b. Object will not fit into graduated cylinder ..... (6)
  5. Place a known amount of water into the graduate, then gently lower the object into the cylinder. Record the new level from the graduate. Subtract the first reading from the second. Answers may be in mL, cc, or  $\text{cm}^3$  ..... (7)
  6. Fill an overflow can with water. Discard the excess water. Place a beaker under the spout. Gently lower the object into the water. Displaced water will be read from a graduated cylinder. This will be the volume of the object. Answers may be in mL, cc, or  $\text{cm}^3$  ..... (7)
- Mass -
7. Determine the mass of the object by using the beam balance. Answers will be in grams (g) ..... (8)
- Density -
8. The formula used for finding the density is  $D = M/V$ . (This is to read Density equals Mass divided by Volume) Work the problem. Answers are rounded to the hundredths place. Answers will be in g/ml, g/cc, or  $\text{g}/\text{cm}^3$ .

\*\*\* WHEN USING THE CALCULATOR ENTER: MASS NUMBER, THEN DIVISION SIGN, THEN VOLUME NUMBER, THEN THE EQUAL SIGN.  
(Round off to hundredths place).