

# COIN DENSITY

OBJECTIVE: Review density by measuring mass and volume then calculating density.

# WHAT IS DENSITY?

- The closeness of the particles in a substance.
- Gases are the least dense phase of matter. Liquid and solid particles are much closer and therefore much more dense.

# WHAT IS DENSITY?

- If a substance changes phase, it changes its density: ice is less dense than water and both are much more dense than vapor.

# MEASURE MASS AND VOLUME

- To measure **mass**: Use an electronic scale.  
(g)

- To measure **volume**:

Of a liquid: measure directly in a graduated cylinder. (mL)

Of irregular solid: measure indirectly by subtracting the initial liquid volume. (mL)

Of regular solid: length x width x height  
(cm<sup>3</sup>)

# CALCULATE DENSITY

DENSITY = MASS/VOLUME

or

M

D = -----

V

(g/mL or g/cm<sup>3</sup>)

# COIN DENSITIES

1. Find the masses of one, five, and ten pennies.
2. Find the mass of five dimes.
3. Find the volume of each of the above using water displacement method.
4. Calculate the densities.

# DATA TABLE

***LABEL YOUR NUMBERS with UNITS!***

COIN(S)    MASS    VOLUME    DENSITY

1 penny

5 pennies

10 pennies

5 dimes


# CONCLUSIONS

Should the density of one penny be different than the densities of five or ten pennies?

Why or why not?