

## Float or Sink?

### Density/Buoyancy/Scientific Method

Introduction: You will investigate and test objects to see if they float or sink in water. Objects will float or sink based on their density.

#### Review:

Density - amount of mass/amount of volume

Buoyancy - upward force on an object by a fluid (water, air)

Density of water -  $1.0 \text{ gm/cm}^3$

Density of freshwater -  $1.02 \text{ gm/cm}^3$

#### Directions:

1. For an irregular object, use a graduated cylinder and triple beam balance to determine the density of the object.
2. For regular object, use a ruler and triple beam balance to determine the density of the object.
3. Then, predict if the object will float/sink based on your data.

Object	Mass (gm)	Volume ( $\text{cm}^3$ )	Density (m/v)	Float/Sink?

Observe/Analysis:

Draw the relative position in the water of your objects in the fishtank below.  
(Is it floating? At the bottom).



Analysis:

Create a bar graph in your INB that shows the density of your objects.

X - axis? Objects

Y - axis? \_\_\_\_\_ units? \_\_\_\_\_

Questions:

1. What are the objects with the least amount of density? The greatest?
2. Do objects with greater density sink to the bottom faster than objects with lesser density?
3. How does the density of objects and how they sink or float relate to the formation of planet Earth and the layer of Earth?