



## Vocabulary: Determining Density via Water Displacement



### Vocabulary

- Archimedes' principle – the physical law that states that an object is pushed upward by a force equal to the weight of fluid it displaces.
  - For a floating object, the upward force is equal to the weight of the object. This implies that the mass of the displaced fluid is equal to the mass of the floating object.
  - For a sinking object, the upward force is less than the weight of the object. This implies that the mass of displaced fluid is less than the mass of the sinking object.
- Density – the amount of matter in a certain space.
  - Density is usually measured in grams per milliliter (g/mL).
- Displacement – the process in which one object or substance pushes another out of the way.
  - When a solid object is added to liquid, some of the liquid is *displaced*, or moved aside to make room for the object.
  - If a container is completely filled with liquid and an object is added, the displaced liquid will spill over the sides of the container.
- Mass – the amount of matter in an object.
  - In the metric system, the basic units of mass are the gram (g) and kilogram (kg). A paper clip has a mass of about one gram.
  - Mass is similar to weight but is not exactly the same. Your weight depends on the gravity of the planet you are on. If you went to the Moon, your *mass* (amount of matter that makes you up) would be the same, but your *weight* would be much less than on Earth because the Moon has less gravity than Earth.
- Volume – the amount of space an object occupies or takes up.
  - In the metric system, the basic units of volume are the milliliter (mL), cubic centimeter (cm<sup>3</sup> or cc), and liter (L).
  - Milliliters and cubic centimeters are equivalent units.

