

Density- The amount of matter (mass) per unit of volume of a substance.

Lead is denser than feathers or some may say lead is heavier than feathers.

For example: Density of water is 1.0 g/cm^3 .



Density

- can be described as the crowdedness of the particles in a substance
- Scientifically, it is the amount of substance that occupies a particular space.
- Can be measured (Discussed later)
- A “heavy” substance has a high density
- A “light” substance has a low density



Density and Buoyancy

Take a guess at what these terms mean.

You may have heard them before.



Here are a couple of hints:

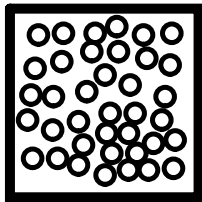
Density helps explain why a piece of steel sinks in water and a beach ball floats.

Buoyancy explains why a huge piece of steel in the shape of a ship floats!





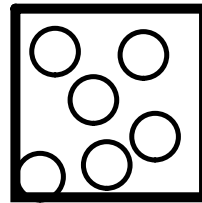
-According to the particle theory, different substances have different sized particles. The size of the particles determines the number of particles that can fit into a given space. Each substance has its own unique density, based on its particle size.



Liquid A

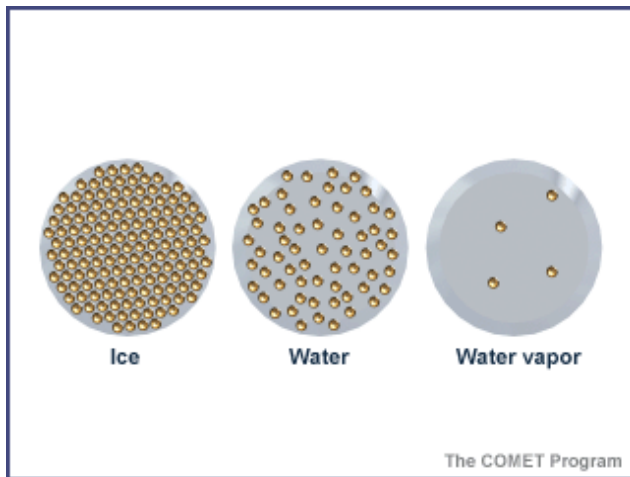
- small particles
so many can fill
the area

-Each substance has its own density



Liquid B

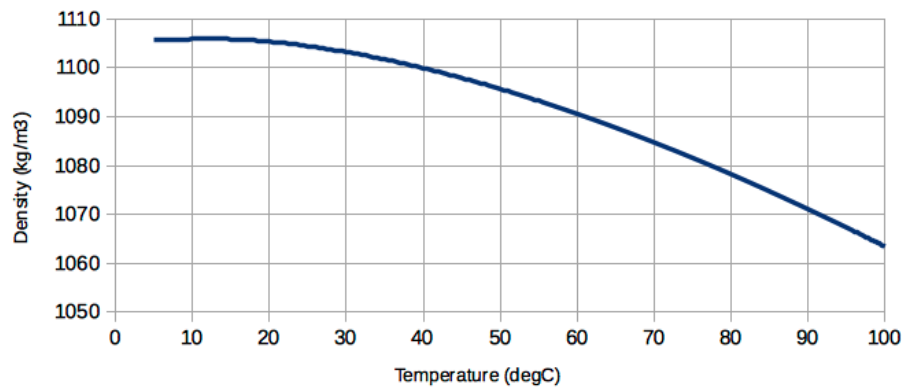
- Large particles
so few fill the
area



You can see with ice there is more particles bunched together in the area. Water the particles are spread out some BUT with water vapor the particles are really spread out.

Heavy Water - Temperature and Density

www.engineeringtoolbox.com



As temperature increases the density of water decreases