Quantitative physical property is something that can be measures with an instrument of some kind.

Some Quantitative Physical properties are:

Volume – The amount of space occupied by a substance

- Volume of liquids can be measured using measuring cups, graduated cylinders.

- Volume of gases can be determined by measuring volume of the containers that hold them

Temperature is a physical quantity that expresses the degree of hotness or coldness of a substance and the internal energy given off by a substance. Measures with a thermometer.

Mass – The amount of matter in a substance

- Measured in kilograms (Kg) or grams (g)

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/ cm3.

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 B*uoyancy*

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.

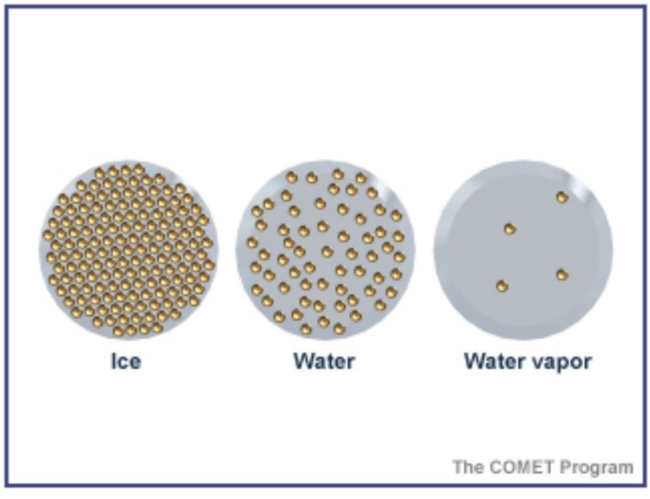
Liquid A

- small particles so many can fill the area

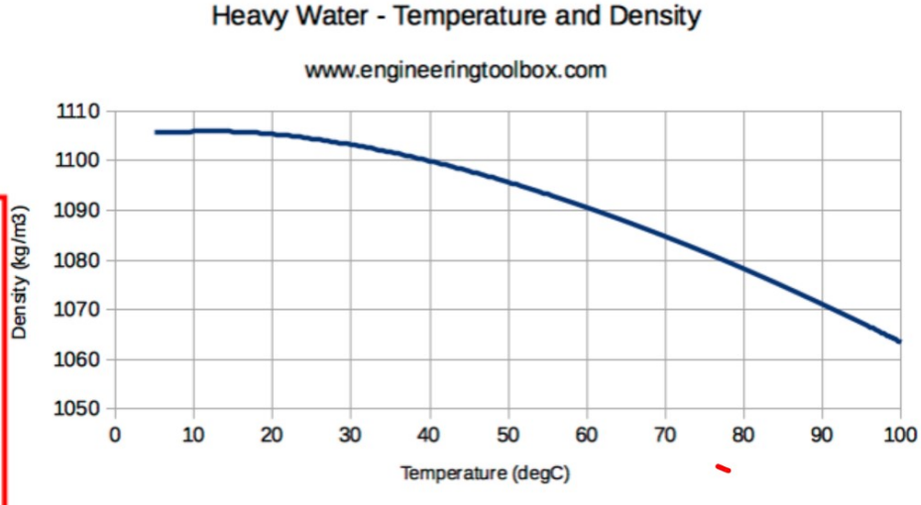
Liquid B

- Large particles so few fill the area

-Each substance has its own density



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.



As temperature increases the density of water decreases since particle spread out further apart as they heat up.