* Units of Measurements  
  International System of Units SI
* **2-2**
* 2-2 Learning Targets
* Identify proper metric units
* Convert from metric unit to another
* Calculate density
* Use proper scientific notation
* **SI Base Units**
* Mass
* Kg, kilogram
  + Measure of amount of matter in an object
  + Does not change with a change in position
* Weight- measure of the gravitational pull on matter
  + Weight may change with a change in position
* Length
* Measure of distance
* Meter (m)
* Time
* Second (s)
* Temperature
* Measurement of the amount of heat energy
* Kelvin (K)
* Celsius (°C)
* Amount of substance
* Mole, (mol)
* 2 other base units we will not use in class
* Electric current ( ampere) and Luminous intensity (candela)
* Derived Units
* Most SI units are combination of base units
* Made by multiplying or dividing standard units
* **Volume**
* Measure of size of body
* How much space is taken up
* Cubic meter m3
* In chemistry use Liter (L)
* 1m3 =1,000,000cm3
* 1 L = 1000 mL =1000 cm3
* **Density**
* Ratio of mass to volume
* Units- kg/m3, inconveniently large for chemistry
* Commonly used unit is g/cm3 or g/mL
* Gas density is reported g/liter
* **Density = mass**

**volume**

* A material has a mass of 10.0 g and volume of 6.0 mL. What is the density of this material?
* 10.0 g/ 6.0 mL= 1.6 g/mL
* Does is float of sink in water?
* Sink, greater than density of water (1.00 g/mL)
* **Common Derived Units**
* Metric System
* Decimal system with each component a multiple or subdivision of 10
* Most common prefixes in chemistry
* Milli= 1/1000
* Centi= 1/100
* Deci= 1/10
* Kilo= 1000
* **Prefixes for Large Measurements**
* **Prefixes for Small Measurements**
* **Metric Conversions**
* Think of steps
* As go up the steps move decimal to left
* As go down steps move decimal to the right
* Each step is a multiple of 10
* Conversion factors
* Ratio derived from the equality between two different units that can be used to convert form one unit to another
* **Quantity sought = quantity given x conversion factor**
* Deriving conversion factors- from the known relationship between the unit you have and unit you want