Unit 1

Matter

What is Matter?

1. Matter is the "stuff" that makes up everything in the universe.

Definition

Matter - Anything that has mass and takes up space.

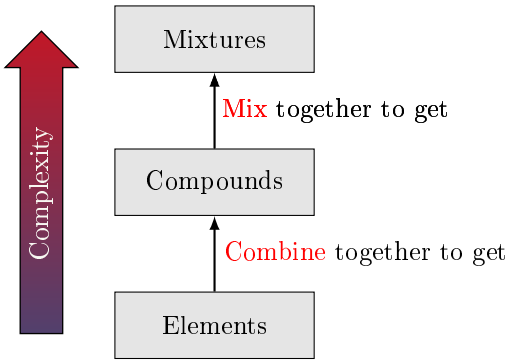
2. Properties of Matter
   (a) Each specific substance has its own combination of properties that can be used to identify the substance.
   (b) Matter can Δ it's properties.
      i. Ex. Water is a
         A. Liquid at room temperate
         B. Solid at cold temperatures
         C. Gas at high temperatures
   (c) Examples:
      i. Hardness
      ii. Texture
      iii. Flammability
      iv. Color
      v. Shape
      vi. Temperature

Definition

Chemistry - the study of the properties of substances and how matter changes.

Kinds of Matter

3. 3 Kinds



4. Elements

Definition

Element - A substance that is made up of only one type of atom. [**SimpleWiki-ChemicalElement**]

(a) If you break down an element any more, then it just becomes generic *protons*, *neutrons* and *electrons*.

i. It stops behaving like that element
- Ex: If you break down Gold into protons, neutrons and electrons, it is no longer a shiny metal that conducts electricity.

(5) Compounds

Definition

Compound - A chemical compound is a substance made of two or more different elements joined together by chemical bonds in a fixed ratio. [**SimpleWiki-ChemicalCompound**]

6. Mixtures

Density Formulas

When Density is unknown

$$density = \frac{mass}{volume}$$

Density is measured in

$\frac{\text{g}}{\text{cm}^2}$ | $\frac{\text{g}}{\text{mL}}$

When Mass is unknown

$$mass = density \cdot volume$$

Mass is measured in

g | kg | mg

When Volume is unknown

$$volume = \frac{mass}{density}$$

Volume is measured in

L | mL | cm^2