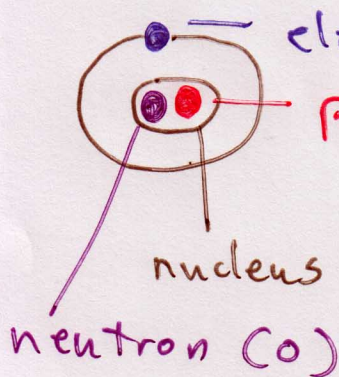


4/9/19

atom - building block of matter

- smallest unit of matter that retains the properties of a chemical element

element - a specific type of atom with a fixed number of protons



electron (-)

proton (+)

nucleus

neutron (0)

substance - a form of matter with a consistent chemical formula

chemical formula - a list of the number and types of atoms in a substance

water - H_2O



compound - a substance that contains two or more different elements

Example! Water is a compound because it contains two different elements (hydrogen + oxygen),

Oxygen (O_2) is not a compound because although it contains more than one atom, it only contains one type of element.

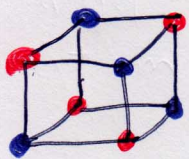
mixture - a combination of two or more different substances.

Example! Hydrogen peroxide purchased at the store is a mixture of two substances - hydrogen peroxide itself (H_2O_2) and water (H_2O),

molecule - a set of atoms directly bonded to each other
Not all compounds are molecules, and not all molecules are compounds.

Several elements exist as molecules in their natural forms; examples: O_2 H_2 N_2

- All of these are examples of molecules that are not compounds.
oxygen hydrogen nitrogen



● Na^+ The atoms in sodium chloride L2
● Cl^- (NaCl) are not directly bonded to each other, so sodium chloride does not exist as molecules.

elemental symbol - a one-, two-, or three-letter abbreviation used to specify a specific element.

homogeneous mixture - a mixture that has the same composition throughout and the components of the mixture cannot be easily separated \rightarrow salt water

heterogeneous mixture - a mixture that has varying composition throughout and the components can be easily separated \rightarrow sand in water

Metric system
 length - meter (m)
 mass - kilogram (kg)
 1000
 time - second (s)
 temperature - Kelvin (K)

mass - the amount of matter in an object
 weight - the effect of gravity on mass (a force)

metric prefixes

mega	1,000,000	(M)
kilo	1,000	(k)
deci	0.1	(d)
centi	0.01	(c)
milli	0.001	(m)
micro	10^{-6}	(μ)
nano	10^{-9}	(n)