

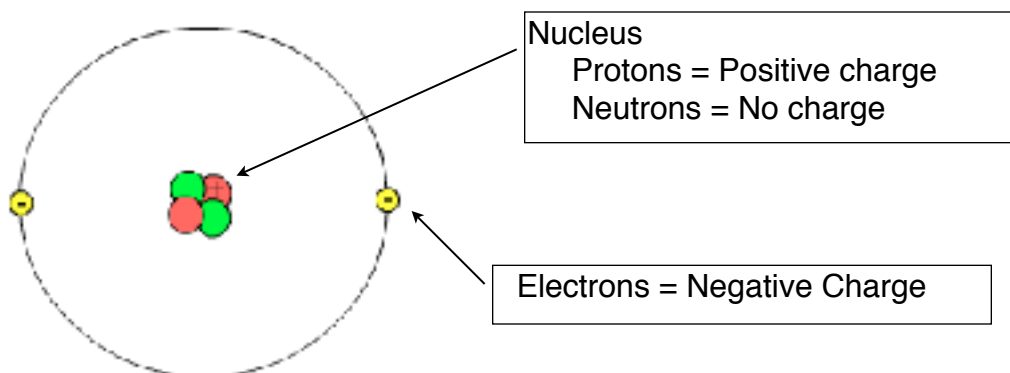
# CHEMISTRY NOTES

## Elements and the periodic table

### A. Element

1. Definition a substance made of one kind of atom

a. Atom smallest particle of a substance



2. Elements are represented by chemical symbols; one or two letters from the name of the element.

3. Examples	Carbon <u>C</u>	Gold <u>Au</u>
	Oxygen <u>O</u>	Silver <u>Ag</u>
	Chlorine <u>Cl</u>	Iron <u>Fe</u>

4. When a chemical symbol is written the first letter is always capitalized and the second letter is never capitalized.

5. Atomic Number number of protons in nucleus of an atom

### B. Periodic Table

1. Elements are arranged by atomic number

2. Families groups of atoms with similar properties

a. Chemical Properties reactivity, flammability, pH

b. Physical Properties color, texture, boiling point



Molecules & Compounds

- A. Molecule two or more atoms that are chemically combined
1. can be broken down into can be broken down into simpler substances
  2. the properties of a molecule are very different than the properties of the elements from which they are made.
  3. Chemical Bond force that holds atoms together in a molecule

## Chemical Formulas

- A. Definition combinations of chemical symbols
1. Used to represent molecules
    - a. Examples

Molecule	Formula
Water	H <sub>2</sub> O
Oxygen Molecule	O <sub>2</sub>
Ammonia	NH <sub>3</sub>
Carbon Dioxide	CO <sub>2</sub>
Chlorine Molecule	Cl <sub>2</sub>

- b. Subscripts the number of atoms of each element in that molecule

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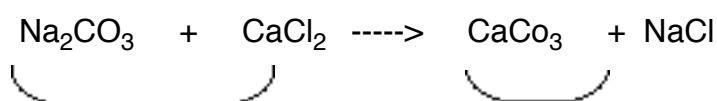
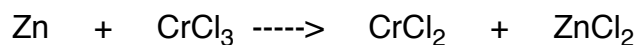
If there is no subscript there is one atom of that element.

## Chemical Equations

- a. Chemical reaction rearranging atoms to form new substances
- \_\_\_\_\_
1. Examples of chemical reactions baking, rusting, burning
- \_\_\_\_\_
2. Reactions are represented by chemical equations
  3. Arrow means produces

4. Balanced by adding coefficients (numbers) before the chemical formulas so there are equal numbers of each type of atom on both sides of the arrow.

Examples:



Reactants - Substances that are combined to cause the chemical reaction.

Products - Substances that are made by the chemical reaction.

b. 4 indicators of chemical change

#1 temperature change

#3 gas is given off

#2 color change

#4 a new substance is formed

