Chemical Bonds

Chemical bond: the force that holds two atoms together.

Ionic bonds Covalent bonds Metallic bonds

Elements want to have a full outer shell of electrons in order to be stable.
*Atoms with five, six, or seven valence electrons usually become stable when this number increases to 8.
*Most atoms with one, two, or three valence electrons can lose an electron/s and become more stable.

Ion: an atom or group of atoms that has an electric charge because of the gain or loss of electrons.

Ionic bonds: Form between positive and negative ions; metals and nonmetals.

Only the arrangement of electrons has changed. Nothing about the atom's nucleus has changed.

Cation: Positively charged ion
Anion: Negatively charged ion.

Polyatomic ions: Ions made of more than one atom. Ex: NH_4^+

The charge given to a polyatomic ion applies to the entire group of atoms.

Chemical formula: combination of symbols that shows the ratio of elements in a compound.
$MgCl_2$; 1-Mg 2-Cl

subscript: tells you how many there are of that specific element in the compound.
*If no subscript is written, 1 is understood.

Chemical formula: a combination of symbols that shows the ratio of elements in a compound. $MgCl_2$; 1-Mg 2-Cl
Subscript: tells you how many there are of that specific element in the compound. Ex: $MgCl_2$ means there are 1 -Mg and 2- Cl

The name of the positive ion (cation) comes first followed by the name of the negative ion (anion).
If the negative ion is a single element the ending changes to -ide.
Ex: NaCl : Sodium chloride