## Simple Ions

**IN chemical reactions, atoms may lose or gain electrons to become more stable.**

**Stable like the nearest noble gas.**

**The loss of gain of electrons results in a more stable electron energy level structure.....**

**Losing electrons will result in a positively charged ion..called a cation.**

**Gaining electrons will result in a negatively charged ion..called an anion**

**Example: magnesium ion VS magnesium ion**

**Now try doing an energy level diagram showing the change from:**

**Chlorine atom to chloride ion**

******NOTE.. anything that gains electrons to become more negative has their ending changed to.....***

***-ide***

## Compounds

**Compounds can be classified into 3 different groups:**

**1. Molecular Compounds: non-metals bonded to non-metals**

**ex: $H_2O$ $NH_3$**

**2. Ionic Compounds: metals bonded to non-metals**

**ex: NaCl**

**3. Intermetallic Compounds: metals bonded to other metals**

**ex: Cu-Zn (brass)**

*We focus on the first 2 in Science 1206...Molecular and Ionic Compounds.*

## Molecular Compounds

- **share electrons between atoms**
- **can be a solid, liquid or gas**
- **have low melting points and low boiling points**
- **some dissolve in water and others do not (polarity)**
- **do not conduct electricity**

**Naming Moleculars uses a "Prefix System":**

| | |
|---|---|
| **1 - mono** | **6 - hexa** |
| **2 - di** | **7 - hepta** |
| **3 - tri** | **8 - octa** |
| **4 - tetra** | **9 - nona** |
| **5 - penta** | **10 - deca** |

**$P_2F_6$** **$P_4O_{10}$**

**Using this prefix system, here's how it goes:**

**$N_2O$** **$N_2O_5$** **CO**

**There are some common molecular compounds that because they are so common, they have moved fro formal name**
**to their common name.**

**YOU MUST REMEMBER THESE...**

| | | | |
|---|---|---|---|
| **$H_2O$** | **water** | **$O_3$** | **ozone** |
| **$NH_3$** | **ammonia** | **$CH_4$** | **methane** |
| **$C_{12}H_{22}O_{11}$** | **sucrose** | **$CH_3OH$** | **methanol** |
| **$C_2H_5OH$** | **ethanol** | **$H_2O_2$** | **hydrogen peroxide** |

**Name the following:**

**$P_2O_8$** **$XeF_6$**

**NO** **$OF_2$**