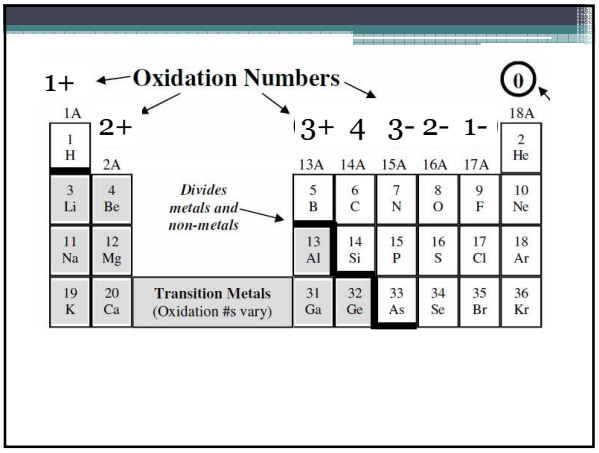
Ionic Compounds

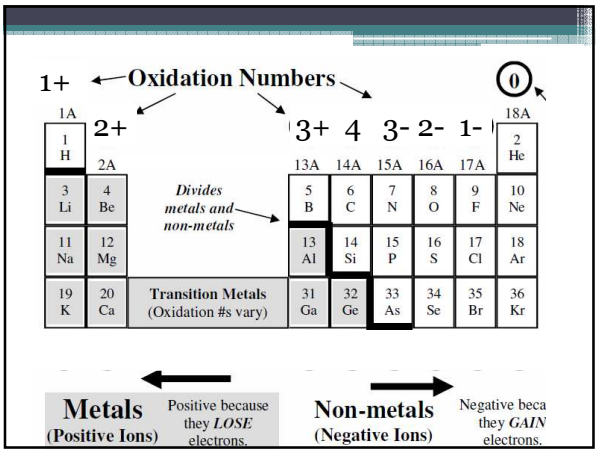
Unit 3 Pretest

Word/Term: Oxidation Number	Drawing:
Describe in own words:	
Textbook Definition:	Rate my Understanding: 1 2 3 4
How I remember it:	Reflections:



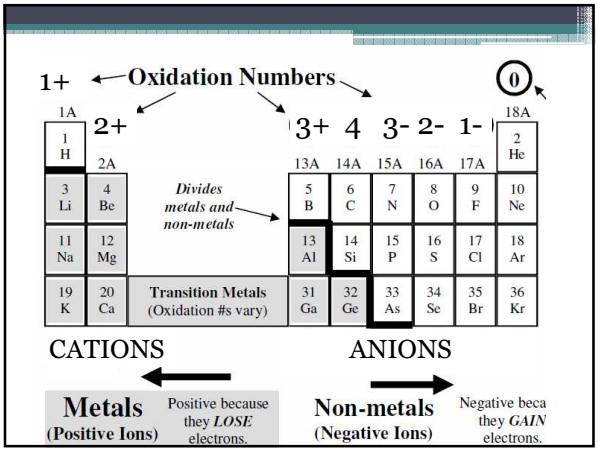
The Octet Rule

- What is the magic number that all atoms are trying to get to?
  - What are the exceptions?

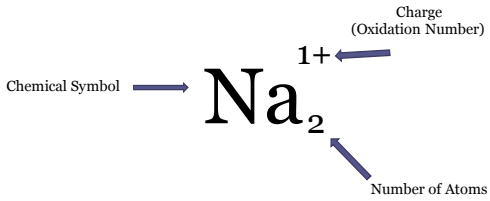


Types of Ions

- CATIONS- When an atom loses an electron(s)
  - CATIONS are POSITIVE
  - Metals characteristically form CATIONS
- ANION- When an atom gains one or more electrons
  - ANIONS are NEGATIVE
  - Nonmetals characteristically form ANIONS



Notation



Losers of Electrons become Positive (Cations)

Mg

Gainers of Electrons become Negative (Anions)

O

Subscripts

- Tell you the number of atoms in a molecule

O_2

No number means 1 Atom

H_2O SO_4

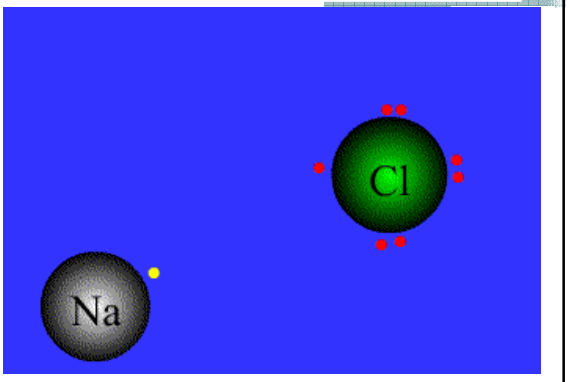
How many atoms are in each compound?

Word/Term: Chemical Bond	Drawing:
Describe in own words:	
Textbook Definition:	Rate my Understanding: 1 2 3 4
How I remember it:	Reflections:

Word/Term: Ionic Bonds	Drawing:
Describe in own words:	
Textbook Definition:	Rate my Understanding: 1 2 3 4
How I remember it:	Reflections:

Opposites Attract

- Just as with protons and electrons
  - Oppositely charged atoms attract
- **Cations** (metals) attract **Anions** (nonmetals) forming **Ionic Bonds**



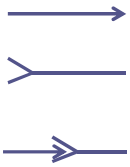
Positive Ions Attract Negative Ions

$Mg^{2+} \longleftrightarrow F^{1-}$

$\longrightarrow MgF_2$

Electron Arrows

- Electron arrows are an easy way to visualize electrons being given or accepted by atoms



Losing 1 Electron

Gaining 1 Electron

An Ionic Bond

Building your Ionic Compounds

- The number of electron arrows comes form the oxidation number
- Positives give electrons
- Negative receive electrons

Elements Combining

- When elements combine there are a lot of atoms of each element
- Each element will gain or lose electrons according to its oxidation number

How Atoms are Needed to Make the Compound

- Each oxygen will attract two potassiums, so potassium and oxygen will always combine as

K_2O Potassium Oxide

Go to the Boards
Combine the following compounds

- Sodium and Oxygen
- Beryllium and Fluorine
- Magnesium and Sulfur
- Lithium and Phosphorus
- Calcium and Nitrogen
- Aluminum and Oxygen

Homework

- Complete Ionic Compounds Worksheet

- Next Class
  - Covalent Bonds