Naming Compounds
Aim: To understand why it is necessary to have a system for naming compounds

Binary compounds- Compounds composed of two elements

- Two classes
  - Compounds that contain metals and nonmetals
  - Compounds that contain two metals

Naming Compounds that Contain a Metal and Nonmetals
Aim: To learn to name binary compounds of a metal and nonmetal

- Metals lose electrons to become cations
- Nonmetals gain electrons to become an anion

Metal (+) **+** **Nonmetal** (-) **=** **Binary Ionic Compound**

- Type I compounds-metals that form **ONLY** one type of cation
- Type II compounds- Metals that can form two or more cations that have different charges

Rules for naming Type I Compounds

1. The cation is always named first and the anion second
2. A simple cation (obtained from a single atom) takes its name from the name of the element. Ex. Na^+ is called sodium in the names of compounds containing this ion.
3. A simple anion (obtained from a single atom) is named by taking the first part of the element name (the root) and adding –ide. Thus Cl^- ion is called chloride

Noble gases are the least reactive; therefore they do not form compounds

Octet rule-In most chemical reactions, atoms tend to match the s and p electron configuration of noble gases. The atoms want to have their p orbital filled.

Type I

	Group 1	Group 2	Group 3
Charge	1^+	2^+	3^+
	Most reactive	Most reactive	

Nonmetals

	Group 15	Group 16	Group 17
Charge	3^-	2^-	1^-

When you form ionic compounds there is no net charge-

	Na^+	Cl^-	=	NaCl
Charge	(+1)	(-1)	=	0
	Sodium Chloride			
	Al^{3+}	I^-	=	AlI_3
Charge	(+3)	3(-1)	=	0
	Aluminum iodide			

Remember to switch your charges and place as subscripts when you write your ionic compounds

Common Simple Cations and Anions

Cations	**Name**	**Anion**	**Name**
H^{+1}	Hydrogen	H^{-1}	hydride
Li^{+1}	Lithium	F^{-1}	fluoride
Na^{+1}	Sodium	Cl^{-1}	chloride
K^{+1}	Potassium	Br^{-1}	bromide
Cs^{+1}	Cesium	I^{-1}	iodide
Be^{2+}	Beryllium	O^{2-}	oxide
Mg^{2+}	Magnesium	S^{2-}	sulfide
Ca^{2+}	Calcium		
Ba^{2+}	Barium		
Al^{3+}	Aluminum		
Ag^{+1}	Silver		
Zn^{2+}	zinc		