NAMING AP Chemistry Notes #1. Collins, A. 2013

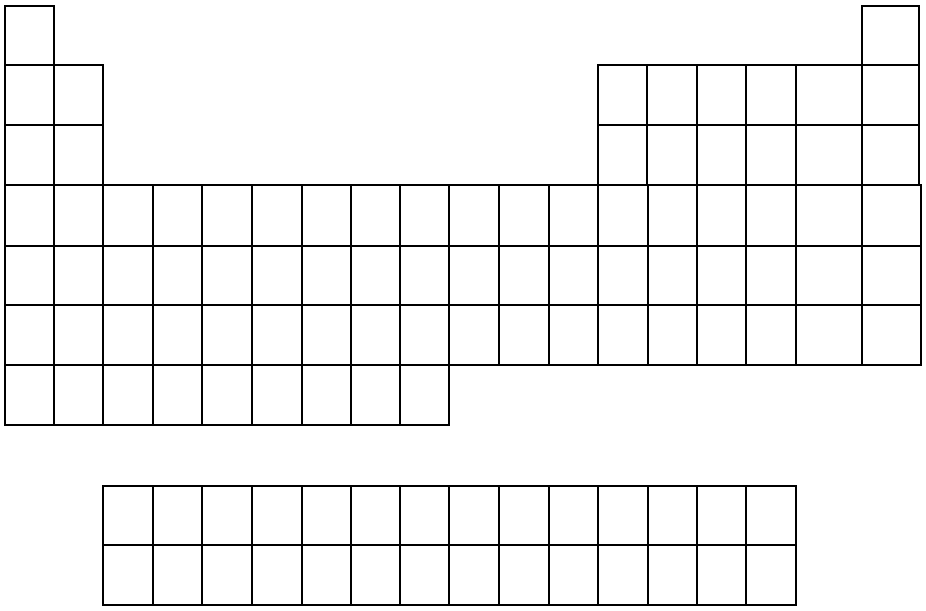
I. IONIC COMPOUNDS (usually a _____ and a _____)

A. ions: charged species formed when e- are gained or lost.

* Cations = _____ charged ions; _____ electrons (often METALS)
* Anions = _____ charged ions; _____ electrons (often NON-METALS)

B. TYPES

1. monatomic ions - *need to look at Periodic Table*



2. polyatomic ions - *need to memorize and look for patterns. Refer to polyion she*

C. Writing Formulas from names

1. Know charge of ions involved.
2. Name the cation 1st, followed by the anion

ex: Aluminum chloride

ex: Titanium (IV) oxide

ex:

D. Naming Compounds from the formulas

5 Rules for Ionic Compounds

1.

2.

3.

4.

5.

II. MOLECULAR COMPOUNDS (2 or more _____ bonded)

A. Non-acid molecular compounds
- usually BINARY (containing only 2 different elements)
- formula never starts with H

- NAMING: like ionic compounds except USE PREFIXES to denote # of atoms present
  * prefix "mono" is never used for naming the FIRST element
  * "a" and "o" don't go together

ex:

PREFIXES
1 =
2 =
3 =
4 =
5 =
6 =
7 =
8 =
9 =
10 =

B. Acids - refer to naming flowchart
- a substance that yields H+ in solution
- acids always start with an H in their formula

- OXYACIDS: acids that contain H, O and another central atom.

(follow ate/ic and ite/ous rules)
ex:

ex:

- NON OXYACIDS (also called binary)
H and another non metal
Prefix "hydro-" with element root "-ic"

ex:

C. Bases
- a substance that yields OH- in solution
- NAMING: Easy! Ionic Compound rules

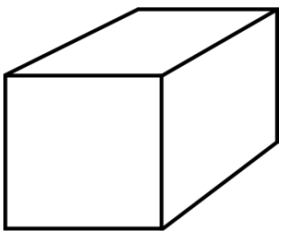
ex:

D. Hydrates: usually ionic compounds that have a specific number of H2O molecules associated within their crystalline structure.
- NAMING: Like normal but specific # of H2O molecules. "hydrate" = water

Name the salt portion as you would an ionic species. Name the water using molecular prefixes.

ex: $MgSO_4.7H_2O$

ex: $CaCO_3.4H_2O$



An introduction to Coulomb's Law: $F_{el} = \frac{kQ_1Q_2}{d^2}$