**VN 3.3 Binary Ionic Compounds**

**A. Making compounds to balance charge**

1. charges should always add up to \_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Add subscripts to show # of \_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Write \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ first and anion second

Ex: Strontium and Fluorine

Ex: Calcium and Phosphorous

**B. Naming ionic compounds**

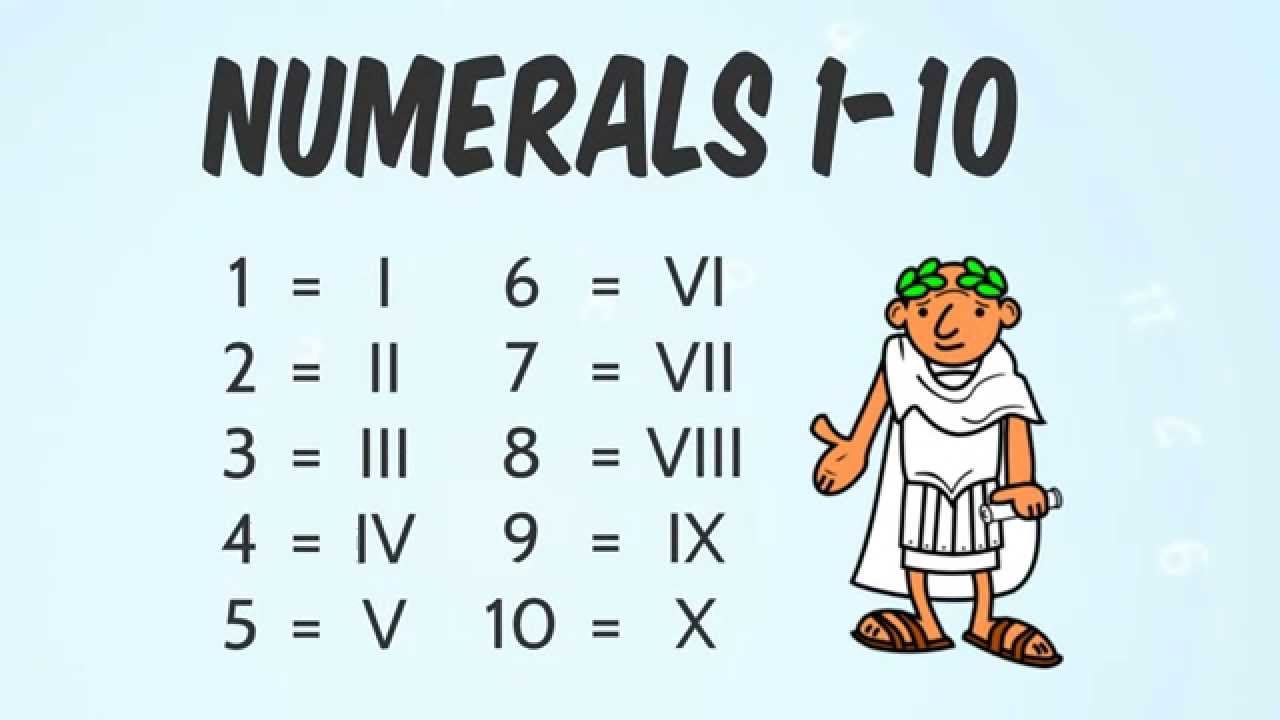
1. Name the cation first
   1. Metals with multiple charges use \_\_\_\_\_\_\_\_\_\_\_\_\_ numerals to show the charge on the metal Ex: Iron (II) is
2. Name the anion second
   1. Monatomic - change ending to –\_\_\_\_\_\_\_\_\_\_\_\_
   2. Polyatomic- name stays the same
3. To determine which is the cation and which is the anion, draw a line after the metal or ammonium (NH4)

Examples

* CaCl2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* NaBr \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* K3N \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**C. Name to Formula**

1. potassium chloride \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. magnesium Sulfide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Aluminum oxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**D. Multi-Charge (Transition) Metals**

Roman numerals are only used if the metal has more than one possible charge.

Do not use roman numerals for single charge transition metals (ex: AgCl = silver chloride)

Remember the Magic Triangle

If it is a metal (left of the stair case) in group 1A or 2A or in the magic triangle it has only one charge and does not need roman numerals

Examples: Write formula or Name

1. Iron (II) Sulfide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Gold (III) oxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

When naming compounds with multi-charge metals, you must work backwards to determine the charge

1. CuBr2

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. FeO \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Fe2S3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_