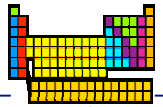
## Naming Compounds:...

**Follow the flow chart, and it will work, I promise.**
If you try to skip steps, you may get thrown off.



**Naming Compounds: two elements or more than two?**

Only two Elements

**Binary compound** Non-metals or metal with non-metals?

Non-metals

Covalent compounds

Write the names of the elements in the order they appear

Use prefixes for each element to say how many of each

Change the ending of the last element to "ide."

### Use prefixes f...

Prefixes:
mono=1 di=2
tri=3 tetra=4
penta=5 hexa=6
hepta=7 octa=8
nona=9 deca=10

### Change the endin...

For example: water, $H_2O$, would be "dihydrogen monoxide" If there is only one of the first element, such as $CO_2$, we just say "carbon dioxide," not "monocarbondioxide."

Metal and non Metal

**Ionic Compound**

### Ionic Compo...

Do **NOT** use the "mono, di, tri prefixes, ever for ionic compounds!

Does the metal make only one type of ion?

Yes (type 1)

The name of the metal tells you the charge **Name that compound!**

### The name of the meta...

Write name of the cation followed by name of the anion. Change the ending of the nonmetal to "ide." So, NaCl is sodium chloride.$MgCl_2$ is magnesium chloride.
For polyatomic ions, write the name of the metal followed by the name of the polyatomic ion. $NaNO_3$ becomes "sodium nitrate." $Na_2SO_4$ is "sodium Sulfate."

No (transition Metal. Type 2)

The name of the metal does not tell you the charge. You have to. **Then, name that compound!**

### The name of the metal does not tell y...

Use roman numerals in parentheses following the metal to tell me it's charge.
If the cation is $Fe^{2+}$, we say "iron (II)" if the cation is $Fe^{3+}$, then we call it "iron (III)." Then you write the name of the anion with "ide" as the ending, just as for type 1. You handle polyatomic ions the same way.
So, $FeCl_2$ is iron (II) chloride. $FeCl_3$ is iron (III) chloride. how do you know the charge? Well, in this case, the Cl tells you, since it can only be 1-. I either have to give you an anion that has only one possible charge, or tell you the charge.
It's not as hard as it seems

More than Two

**Look for Polyatomic Ions**

Follow the rules for anions and cations

### Look for Polya...

These will likely have a group of non-metals. You have to memorize these. Look up: nitrate, nitrite, carbonate, sulfate and Ammonium. All common ones but ammonium are anions

### Does the met...

Group I is always 1+; group 2 is always 2+; Aluminum is always 3+ and Silver is always 1+