**Ionic Compound Formula and Name Writing Activity**

# Introduction:

There are two main categories of chemical bonds: Ionic bonds are electrostatic (opposite-charge) interactions between cations (positively charged) and anions (negatively charged). These are typically formed between metals, which form cations, and nonmetals, which form anions. The metal loses electrons that are gained by the nonmetal.

Covalent bonds are formed when nonmetals share electrons. We will investigate these next class.

Today, we will investigate writing chemical formulas and names for ionic compounds using the ion kits. Chemical formulas are written using the chemical symbols found on the periodic table and a subscripted number that tells how many of each atom or ion is in the compound.

Chemical formulas for ionic compounds are always written with the smallest whole number ratio of ions. Here are a couple of examples:

* A compound containing one calcium ion and two chloride ions is written as CaCl2.
* A compound containing one strontium ion and one oxide ion is written as SrO (not Sr2O2 etc.).

Ionic compounds must be charge-balanced, which means that the overall charge should be zero when the charges of the cations and anions are added together. Using the previous examples:

* Ca forms the cation Ca2+, and Cl forms the anion Cl-. 1(2+) + 2(1-) = 0, so the compound is charge-balanced.
* Sr forms the cation Sr2+, and O forms the anion O2-. 1(2+) + 1(2-) = 0, so the compound is charge-balanced.

When writing names for ionic compounds, write the name of the cation as-is first. Then, write the name of the anion with -ide instead of its usual ending:

* CaCl2 is calcium chloride (the -ine of chlorine was replaced with -ide).
* SrO is strontium oxide (the -ygen of oxygen was replaced with -ide).

Sometimes, it can be hard to tell what to replace with -ide. Say the name out loud; if it sounds correct, it probably is!

# Instructions:

The kits contain different cations and anions. Each is labelled with its charge. Each color represents a different element:

* lithium: light blue
* sodium: purple
* magnesium: dark green
* aluminum: pink
* nitrogen: dark blue
* sulfur: yellow
* oxygen: red
* chlorine: light green

Pair one type of cation with one type of anion to form ionic compounds, remembering to use the correct number of each ion to charge balance. Write the formula by counting the circles of each ion, then name the compound. There are 16 total compounds that you need to form.

\*\*Kits are needed for this activity. I made mine from construction paper and circle cutters.\*\*