Objective

By the end of this lesson, the student will be able to define an ionic bond, draw Lewis Electron Dot Structures (LEDS) to illustrate the transfer of electrons between atoms, and write the correct chemical formulas for the resulting ionic compounds.

Materials and Prep

- Pencil and paper for drawing LEDS and writing formulas
- Periodic table (can be printed or viewed online)
- Reference materials on ionic bonds and electron transfer (textbook or reliable online resource)

Before starting the lesson, ensure the student understands basic atomic structure, including protons, neutrons, and electrons, as well as the concept of valence electrons.

Activities

1. **Defining Ionic Bonds:**

   Begin with a discussion about ionic bonds. Ask the student to research and define what an ionic bond is, then share their definition. Discuss how ionic bonds form between metals and nonmetals.

2. **Drawing LEDS:**

   Guide the student to choose a metal and a nonmetal from the periodic table. They will draw the Lewis Electron Dot Structures for both atoms, showing the valence electrons. Then, illustrate the transfer of electrons from the metal to the nonmetal.

3. **Writing Chemical Formulas:**

   Once the student has drawn the LEDS, help them determine the charges of the resulting ions. Together, write the chemical formula for the ionic compound formed, using the charges to balance the formula correctly.

Talking Points

- "An ionic bond is formed when one atom donates an electron to another atom, resulting in oppositely charged ions that attract each other."
- "Lewis Electron Dot Structures are a visual way to represent the valence electrons of an atom. They help us see how atoms interact."
- "When a metal loses electrons, it becomes positively charged, while a nonmetal that gains electrons becomes negatively charged."
- "The charges of the ions in an ionic compound must balance out to create a neutral compound."
- "For example, when sodium (Na) transfers one electron to chlorine (Cl), we get Na+ and Cl-, which combine to form NaCl, or table salt."