

# Atomic Bonds

- The number of protons an atom has determines its identity
  - Every atom of Sodium (Na) in the world has 11 protons
  - Adding a proton makes it Magnesium (Mg)
  - Taking away a proton makes it Neon (Ne)
- The way an atom behaves depends on the electrons
  - In chemical reactions, only the electrons are involved
- **Valence Electrons**
  - Electrons in the outer shell
  - Are the only electrons involved in bonding and reactions
- **Ionic Bonds**
  - Happen when one atom steals an electron from another atom
  - One atom gains an electron and has a negative charge
  - The other atom loses an electron and has a positive charge
  - An **ion** is an atom that has a positive or negative charge
  - The positive ion is attracted to the negative ion
- **Covalent Bonds**
  - Happen when two atoms share a single electron
  - Neither atom is charged
  - Atoms have to stay close together to share the electron
  - Stronger than Ionic Bonds