

Lewis Dot Structures

Use dots to represent valence electrons

K

Cl

Covalent Bonds vs Ionic Bonds

Ionic bonds are formed by the attraction of a cation and an anion.

Covalent bonds are when neutral atoms share electrons to make each have their octet

Diatomic Elements

The following elements never exist as an individual atom, they instead are always covalently bonded to themselves.

H

N

O

F

Cl

Br

I

Steps to drawing Lewis Structures

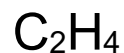
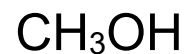
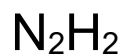
- 1) Determine central atom (or order of atoms in larger molecules)
- 2) Count the total number of valence electrons
- 3) Single bond all atoms together and make them all happy
- 4) Count the electrons, if there are too many, replace a single bond with double. Repeat as needed.

Lewis Structure of Carbon Dioxide

Lewis Structure of Ammonia

Ozone and Resonance

Draw the Lewis Structure for:



VSEPR Theory

Valence Shell Electron Pair Repulsion Theory

This is the theory that gives us molecular geometry. The general idea is atoms want to be as far from each other as they can, but lone electron pairs have a stronger repulsion than bonded atoms.