

Lewis Structures:

Used to understand bonding in cmpds

Used when discussing properties of cmpds

To draw:

1. sum the valence electrons from all atoms
 - a. if anion involved—add an electron for each negative charge
 - b. if cation involved—subtract an electron for each positive charge

2. write the symbols for the atoms and attached them using single bonds
 - a. formulas are usually written in order in which atoms are connected

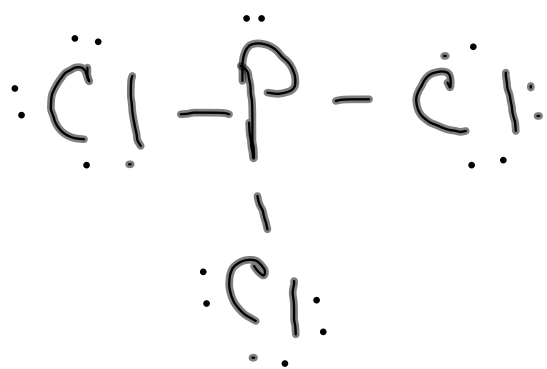
- b. central atom is usually written first and is less electronegative than the other atoms
- complete the octets of the atoms bonded to the central atom
 - place leftover electrons on the central atom even if doing so means the central atom has more than 8 electrons
 - If there are not enough electrons to give the central atom an octet, try multiple bonds.

single —
double =
triple ≡



Draw Lewis structures for the following molecules and ions: PCl_3 , CH_2Cl_2 , HCN , CO_3^{2-} , NO^+ , C_2H_4 , BrO_3^- , ClO_2^- , PO_4^{3-} , NH_4^+ , and CO_2

$$\text{PCl}_3 (5 + 3(7)) = 26$$



$$\text{CH}_2\text{Cl}_2 \quad 4 + 2(1) + 2(7) = 20$$

