

Covalent Bonding Rules for Lewis Dot Diagrams (including polyatomic ions)

1. Halogens get their way. This means that halogens will form simple single sigma bonds only. They will do so at the expense of the octet rule. (Octet deficient and expanded valence shells can result.)
2. Extra electrons (i.e. the extra $2e^-$ in CO_3^{2-}) will go to the most electronegative atom first (usually oxygen*).
3. Oxygen will always find a way to satisfy the octet rule for the central atom. Use in this order:
 - a) Halogen Like Oxygens*: behave like halogens and always form a simple single sigma bond (use if extra electrons are present)
 - b) Double Bond Oxygens: through a double bond ($\sigma + \pi$), oxygen can contribute two electrons to the central atoms valence shell (use until you get to $8e^-$ total)
 - c) Coordinate Covalent Bonds (single sigma bonds in which both electrons are contributed by the central atom): (use to keep valence electrons at $8e^-$)