# Drawing Lewis Dot Structures

1. **Count the total number of valence electrons for the structure.**
    a. All atoms bring valence electrons to bonding picture.
    b. If the overall structure has a (+) charge subtract one electron for each charge.
    c. If the overall structure has a (-) charge add one electron for each charge.

2. **Draw a framework for the structure and connect each atom with *single bonds*.**
    a. Logic
    b. Least electronegative atom in center.
    c. Carbon backbone for organic compounds.
    d. Hydrogen is an outer atom only, and is generally attached to electronegative atoms.

3. **Place remaining electrons into structure, as pairs, from OUTER atoms back to the central atom until you run out of electrons.**
    a. Each atom is satisfied with an octet.
    b. Hydrogen only wants two electrons total to meet its valence requirement.
    c. Atoms in period 3 (or below) can go beyond an octet if need be.

4. **Check the formal charge of all atoms.**
    Formal charge = # electrons an atom brings to structure
        - (# bonds atom is involved in + total # electrons in non-bonded pairs)

5. **Consider if adjustments to your structure are necessary based on the following stability requirements: (*Note: If the structure is deemed stable you are done!*)**
    a. All atoms should have octet (H and group 3 atoms are exceptions)
    b. Fewest charge centers (atoms that have a + or - charge)
    c. More electronegative atom has (-) charge and least electronegative has (+) charge.

    **The following adjustments can be considered….**
    d. Moving an electron pair from an atom with a negative charge to become a second bond to the neighboring atom (that has a positive charge, or incomplete octet).
    e. After moving electrons, go back to step 4!

6. **If a stable structure cannot be reached, adjust the framework (back to step 2).** This may be necessary if you have charge centers in the structure that can't be minimized by the suggestion in part d above.