

Drawing Lewis Structures for Covalent Compounds:

Steps for the NASL method:

N	needed electrons
A	available electrons
S	shared electrons
L	lone pair of electrons

Letter	...means...	How to calculate
N	The number of valence electrons that the atoms need to have an octet. For most atoms, this is 8 For H and He this is 2	Add up all the needed electrons for the atoms in the molecule
A	The # of valence electrons available in the molecule This is simply the number of valence electrons the element normally has. For example... Na has one, nitrogen has 5 and iodine has 7	Add up the valence electrons from each atom
S	Shared electrons are those involved with bonding. 2 shared electrons form a covalent bond. These can be written as 2 dots or a single line. C:H or C-H 4 shared electrons are a double bond C::O or C=O	The number of shared electrons is equal to the "needed" number minus the "available" number $S = N - A$ $S \div 2 = \# \text{bonds}$
L	Lone electrons are those one involved in bonding. They exist in pairs around the atoms of the molecule. They should be distributed as evenly as possible. Don't forget to draw in the lone electrons, an make sure they are pairs	The number of lone electrons is equal to the "available" number minus the "shared" number $L = A - S$ $L \div 2 = \# \text{ of lone pairs}$

****The element with the lowest electronegativity goes in the center****

****Carbon always goes in the center if present, but hydrogen never goes in the center****