

Writing Lewis Structures Using the NASL Method.

There are no “perfect” methods for writing Lewis structures. The NASL method makes counting electrons and no. of bonds (shared electron pairs) easier. You always have to think about the molecule or ion that you are working on. Use the NASL method as a guide. You must make decisions along the way when a molecule is an exception to the rule of eight.

Each letter in NASL designates a specific quantity. I present these to you sequentially:

N stands for the number of electrons that will satisfy the rule of eight.

For representative elements, **N = 8**,

except, **H, He N=2; Be N=4 B N=6**

Ⓟ To get **N** for a molecule or molecular ion, add the N values for all atoms in the molecule.

A stands for the number of available electrons, i.e., electrons in the valence shell. This is the same as the group no. : IA, IIA, IIIA, IVA, VA, VIA, VIIA, VIIIA. If you do not know the group number for some reason, write the electronic configuration and count up the electrons in the valence shell.

Ⓟ To get **A** for a molecule or molecular ion, count up the valence electrons for each atom in the molecule and add the charge if it is negative, but subtract the charge if it is positive.

S stands for the number of electrons that are shared.

Ⓟ **S = N - A** Divide this number by 2 to get the number of covalent bonds in the molecule.

L stands for the number of electrons that are left over.

Ⓟ **L = A - S** Divide this number by 2 to get the number of lone pairs in the structure.

When using this method, always keep the molecule before you. There are exceptions to the rule of eight and you must be conscious of this when using any method for writing Lewis structures.