

## Lewis Structures

A Lewis structure is another way to represent the number of outer electrons in the space outside of the nucleus of an atom. Lewis structures are used for the main group elements, and not the transition elements. For this reason, only the electrons that come from the s and p orbitals are shown in Lewis structures. See also [Valences and Orbitals](#). It is easy to construct a Lewis structure when the electron configuration for an atom is known.

Lewis structures involve writing down the element's symbol and placing dots on a circular path around the atom's symbol. Because only eight electrons can occupy the space of two orbitals, s and p, the dots can be placed to the left, to the right, above and below the atom's symbol. Some examples are shown, with the white circles representing absent electrons, and red circles as present electrons:

Potassium, configuration $[\text{Ar}]4s^1$
Silicon, configuration $[\text{Ne}]3s^2p^2$
Boron, configuration $[\text{He}]2s^2p^1$
Phosphorus, configuration $[\text{Ne}]3s^2p^3$

Some related pages: [Valences](#), and [Electron Configurations](#)