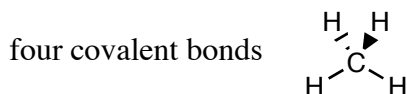


Geometry of Atoms in Organic Molecules

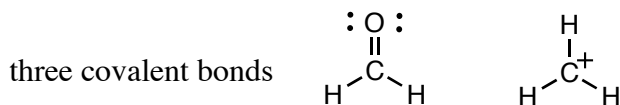
The geometry of atoms around a central atom can be predicted by using the theory of valence shell electron pair repulsion. This states that electron pairs around an atom repel each other (since they are all negatively charged), and therefore spread out as far as they can from each other. This includes both electrons which are in covalent bonds as well as lone pairs. However, the name of the shape given includes only the atoms which are attached.

The following shapes are possible for second period atoms.

tetrahedral (109.5° bond angles)



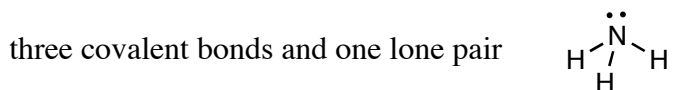
trigonal planar (120° bond angles)



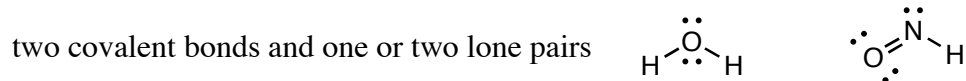
linear (180° bond angles)



trigonal pyramid (~109.5° bond angles)



bent (~109.5° bond angles)



The geometry of a molecule is an important factor in how reactions proceed, and whether an atom can be a stereocenter.