

Molecular Modeling Lab

Purpose: To visualize the molecular geometry of various molecules including those with expanded octets.

Materials: Molecular Modeling Kit

Color Legend:

Oxygen = Red

Carbon = Black

Nitrogen = Orange

Element with 10 e-'s = Yellow

Element with 12 e-'s = Gray

Halogen = Green

Hydrogen = White

Molecular Formula	Lewis Structure	Polarity	Molecular Geometry (Bent, linear, ...)	Bond Angles
O ₂				
N ₂				
CO ₂				
NH ₃				
CH ₄				
H ₂ S				
SiH ₄				
O ₃				
NO ₂ ⁻				
HCO ₃ ⁻				

SF ₄				
PCl ₅				
ClF ₃				
I ₃ ⁻				
XeF ₂				
XeF ₄				
SF ₆				
SO ₃				
ClO ₄ ⁻				
POCl ₃				
HCOOH				

Take several pictures (2-3 different angles) of each structure and print them out, labeled, on a separate piece of paper.

Please use multiple toothpicks for double and single bonds.

If there are more than one central atoms, list geometry for both.

Highlight all structures that show resonance.