

- Draw the Lewis structure for each molecule. Draw all structures before using the simulation.
- Use the "Model" part of the simulation to build each molecule. Draw a new Lewis structure that best represents the molecule's 3D shape, including lone pairs then identify geometries and polarity.

Compound	Lewis structure	Structure from Simulation	Electron Geometry	Molecular Geometry	Are the bonds polar?	Is the molecule polar?
CS <sub>2</sub>	$\ddot{\text{S}} = \text{C} = \ddot{\text{S}}$	$\ddot{\text{S}} = \text{C} = \ddot{\text{S}}$	linear	linear	yes	no
OF <sub>2</sub>	$\ddot{\text{F}} - \ddot{\text{O}} - \ddot{\text{F}}$	$\ddot{\text{F}} - \ddot{\text{O}} - \ddot{\text{F}}$	tetrahedral	bent	yes	yes
SiCl <sub>4</sub>	$\begin{array}{c} \text{:Cl:} \\   \\ \text{:Cl}-\text{Si}-\text{Cl:} \\   \\ \text{:Cl:} \end{array}$	$\begin{array}{c} \text{:Cl:} \\   \\ \text{:Cl}-\text{Si}-\text{Cl:} \\   \\ \text{:Cl:} \end{array}$	tetrahedral	tetrahedral	yes	no
BH <sub>3</sub>	$\begin{array}{c} \text{H} \\   \\ \text{H}-\text{B}-\text{H} \end{array}$	$\begin{array}{c} \text{H} \\   \\ \text{H}-\text{B}-\text{H} \end{array}$	trigonal planar	trigonal planar	no	no
NF <sub>3</sub>	$\begin{array}{c} \ddot{\text{F}}-\ddot{\text{N}}-\ddot{\text{F}} \\   \\ \ddot{\text{F}} \end{array}$	$\begin{array}{c} \ddot{\text{F}}-\ddot{\text{N}}-\ddot{\text{F}} \\   \\ \ddot{\text{F}} \end{array}$	tetrahedral	trigonal pyramidal	yes	yes
PCl <sub>5</sub>	$\begin{array}{c} \text{:Cl:} \\   \\ \text{:Cl}-\text{P}-\text{Cl:} \\ / \quad \backslash \\ \text{:Cl:} \quad \text{Cl:} \end{array}$	$\begin{array}{c} \text{:Cl:} \\   \\ \text{:Cl}-\text{P}-\text{Cl:} \\ / \quad \backslash \\ \text{:Cl:} \quad \text{Cl:} \end{array}$	trigonal bipyramidal	trigonal bipyramidal	yes	no
SeBr <sub>6</sub>	$\begin{array}{c} \text{:Br:} \\   \\ \text{Br}-\text{Se}-\text{Br:} \\ / \quad \backslash \\ \text{:Br:} \quad \text{Br:} \\   \\ \text{:Br:} \end{array}$	$\begin{array}{c} \text{:Br:} \\   \\ \text{Br}-\text{Se}-\text{Br:} \\ / \quad \backslash \\ \text{:Br:} \quad \text{Br:} \\   \\ \text{:Br:} \end{array}$	Octahedral	Octahedral	yes	no