

Chemistry 11  
VSEPR Practice

Key.

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Molecule	Lewis Diagram	Model #	AXE Notation	Molecular Shape Diagram	Shape Name
Carbon dioxide CO <sub>2</sub>	$O=C=O$	5	AX <sub>2</sub>	$O-C-O$	Linear.
Methane CH <sub>4</sub>	$\begin{array}{c} H \\   \\ H-C-H \\   \\ H \end{array}$	8	AX <sub>4</sub>	$\begin{array}{c} H \\   \\ H-C-H \\   \\ H \end{array}$	Tetrahedral
Phosphorus pentachloride PCl <sub>5</sub>	$\begin{array}{c} :Cl: \\   \\ :Cl-P-Cl: \\   \\ :Cl: \end{array}$	2	AX <sub>5</sub>	$\begin{array}{c} Cl \\   \\ Cl-P-Cl \\   \\ Cl \end{array}$	Trigonal Bipyramidal

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Water H <sub>2</sub> O		3	AX <sub>2</sub> E <sub>2</sub>		bent
Sulfur dioxide SO <sub>2</sub>		3	AX <sub>2</sub> E		bent.
Sulfur tetrabromide SBr <sub>4</sub>		4	AX <sub>4</sub> E		seesaw

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Xenon tetrafluoride $XeF_4$		7	$AX_4E_2$		Square planar.
Nitrogen trifluoride $NF_3$		10	$AX_3E$		Trigonal pyramidal
Sulfur hexafluoride $SF_6$		9	$AX_6$		Octahedral



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Bromine pentafluoride $\text{BrF}_5$		1	$\text{AX}_5\text{E}$		Square pyramidal
Carbonyl dichloride ( $\text{COCl}_2$ )		6	$\text{AX}_3$		trigonal planar
Xenon difluoride $\text{XeF}_2$		11	$\text{AX}_2\text{E}_3$		linear
Chlorine trifluoride $\text{ClF}_3$		12	$\text{AX}_3\text{E}_2$		T-shaped