

# VSEPR Model

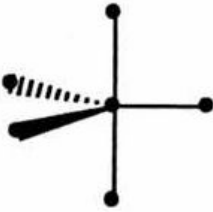
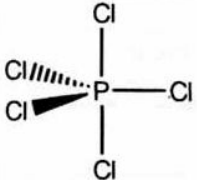
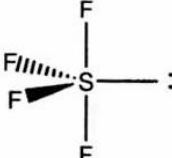
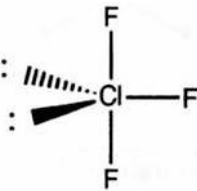
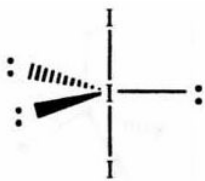

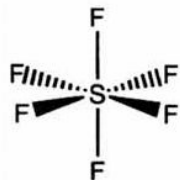
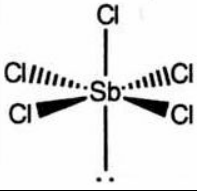
## Valence-Shell Electron-Pair Repulsion

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The Valence-shell electron-pair repulsion (VSEPR) Model is a model that states electron pairs in a molecule will be as far apart from one another as they can be because they repel each other. In a molecule that has two valence shell electron pairs the electrons tend to be on opposite sides of the central atom. If there are three electron pairs around the central atom they are in a trigonal planar shape. With four electron pairs the arrangement is called a tetrahedral arrangement. With five electron pairs the arrangement is called trigonal bipyramid. With six electron pairs the arrangement is called an octahedron.

Areas of Electron Density	Electron Pair Geometry	Bonding Areas (Around Central Atom)	Lone Pairs	Molecular Geometry Example
2	Linear 	2	0	Linear $\text{H}-\text{Be}-\text{H}$
3	Trigonal Planar 	3	0	Trigonal Planar 
		2	1	Bent 
4	Tetrahedral 	4	0	Tetrahedral 
		3	1	Trigonal Pyramidal 
		2	2	Bent 

Areas of Electron Density	Electron Pair Geometry	Bonding Areas (Around Central Atom)	Lone Pairs	Molecular Geometry Example
5		5	0	Trigonal Bipyramidal 
		4	1	Seesaw 
		3	2	T-shaped 
		2	3	Linear 
6		6	0	Octahedral 
		5	1	Square Pyramidal 
		4	2	Square Planar 