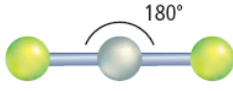
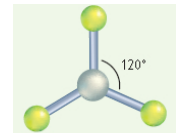
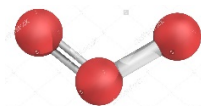
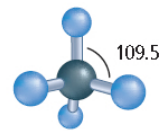
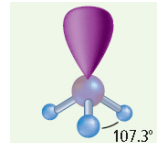
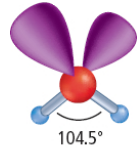
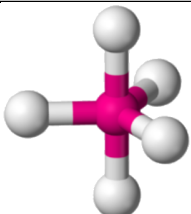
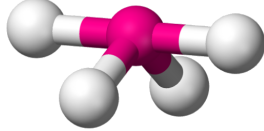
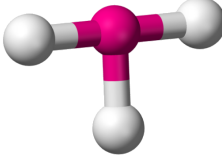
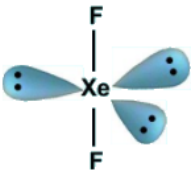
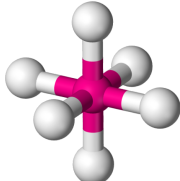
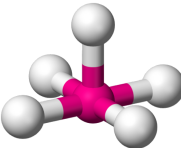
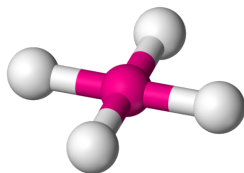


## VALENCE SHELL ELECTRON PAIR REPULSION (VSEPR SHAPES)

(B+E)	e <sup>-</sup> Pair geometry	"ABE"	MOLECULAR SHAPE	Bond angle(s)	IMAGE	Polarity	Valence Bond Theory (hybridization)
2	Linear	AB <sub>2</sub>	Linear	180°		Dictated by the electronegativity of peripheral atoms	sp
3	Trigonal Planar	AB <sub>3</sub>	Trigonal Planar	120°		Dictated by the electronegativity of peripheral atoms	sp <sup>2</sup>
	Trigonal Planar	AB <sub>2</sub> E	Angular	117.5		ALWAYS polar due to lone pair of electrons	sp <sup>2</sup>
4	Tetrahedral	AB <sub>4</sub>	Tetrahedral	109.5		Dictated by the electronegativity of peripheral atoms	sp <sup>3</sup>
	Tetrahedral	AB <sub>3</sub> E	Trigonal Pyramidal	107		ALWAYS polar due to lone pair of electrons	sp <sup>3</sup>
	Tetrahedral	AB <sub>2</sub> E <sub>2</sub>	Bent	104.5		Electron pairs DO NOT cancel each other. ALWAYS polar.	sp <sup>3</sup>

(B+E)	e <sup>-</sup> Pair geometry	"ABE"	MOLECULAR SHAPE	Bond angle(s)	IMAGE	Polarity
5	Trigonal Bipyramidal	AB <sub>5</sub>	Trigonal Bipyramidal	120/90		Dictated by the electronegativity of peripheral atoms
		AB <sub>4</sub> E	See Saw	(adding lone pair(s) decreases bond angles)		ALWAYS polar due to lone pair of electrons
		AB <sub>3</sub> E <sub>2</sub>	T-Shaped			Electron pairs DO NOT cancel each other. ALWAYS polar.
		AB <sub>2</sub> E <sub>3</sub>	Linear			Electron pairs CANCEL each other: Dictated by the electronegativity of peripheral atoms
6	Octahedral	AB <sub>6</sub>	Octahedral	90		Dictated by the peripheral atoms
		AB <sub>5</sub> E	Square pyramidal	(adding lone pair(s) decreases bond angles)		ALWAYS polar due to lone pair of electrons
		AB <sub>4</sub> E <sub>2</sub>	Square Planar			Electron pairs CANCEL each other: Dictated by the electronegativity of peripheral atoms