

**WKS – Chem Honors**  
**VSEPR: Molecular Shapes**

NAME Answer Key  
 Period \_\_\_\_\_ Date \_\_\_\_\_

Determine the Electron & Molecular Geometries & draw a 3D diagram of the following molecules:

Molecule or ion	Lewis Structure (from previous WKS)	Electron & Molecular Geometries	3D Drawing (Draw all lone pairs on central atom and double or triple-bonded terminal atoms w/correct angle)
a. F <sub>2</sub>		Linear Linear	
b. CF <sub>4</sub>		Tetrahedral Tetrahedral	
c. CH <sub>2</sub> Cl <sub>2</sub>		Tetrahedral Tetrahedral	
d. N <sub>2</sub>		Linear Linear	
e. SO <sub>2</sub>		Trigonal Planar Bent	
f. NO <sub>2</sub> <sup>+</sup>		Linear Linear	
g. NO <sub>2</sub> <sup>-</sup>		Trigonal Planar Bent	
h. SO <sub>3</sub> <sup>2-</sup>		Tetrahedral Trigonal Pyramidal	
i. NH <sub>3</sub>		Tetrahedral Trigonal Pyramidal	

Molecule or ion	Lewis Structure (from previous WKS)	Electron & Molecular Geometries	3D Drawing (Draw all lone pairs on central atom and double or triple-bonded terminal atoms w/correct angle)
j. OF <sub>2</sub>		Tetrahedral Bent	
k. ClO <sub>4</sub> <sup>-</sup>		Tetrahedral Tetrahedral	
l. CO <sub>2</sub>		Linear Linear	
m. CO		Linear Linear	
n. CN <sup>-</sup>		Linear Linear	
o. NH <sub>4</sub> <sup>+</sup>		Tetrahedral Tetrahedral	
p. PO <sub>4</sub> <sup>3-</sup>		Tetrahedral Tetrahedral	
q. C <sub>2</sub> H <sub>6</sub>		Tetrahedral Tetrahedral	
r. C <sub>2</sub> H <sub>4</sub>		Trigonal Planar Trigonal Planar	
s. C <sub>2</sub> H <sub>2</sub>		Linear Linear	
t. N <sub>2</sub> H <sub>2</sub>		Trigonal Planar Bent	

\*For 16-19 indicate the geometries at one of the C or N atoms