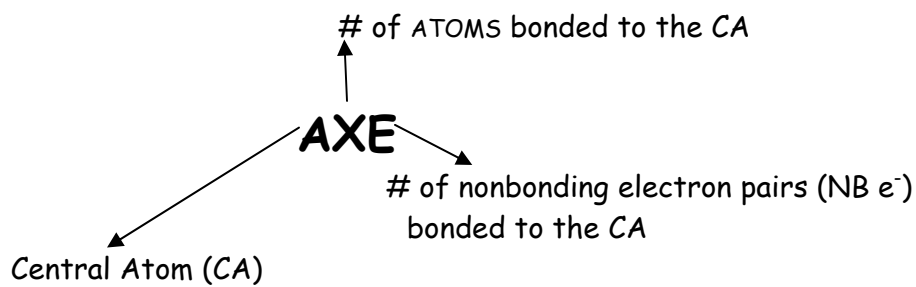


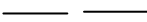
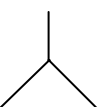
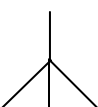
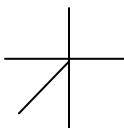
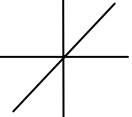
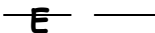
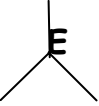
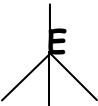
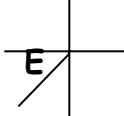
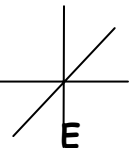
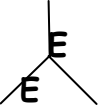
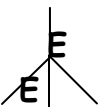
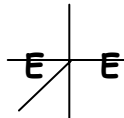
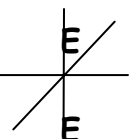
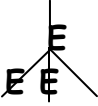
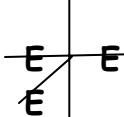
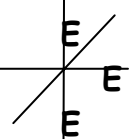
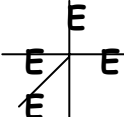
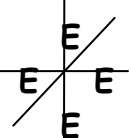
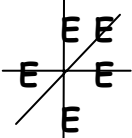
LEWIS STRUCTURES

B }
Be } exception to the octet rule
H }

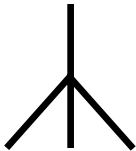
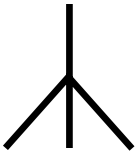
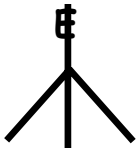

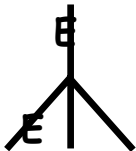

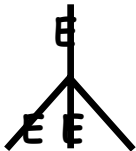

VSEPR Theory -
the more repulsions, the less stable
electron pairs repel

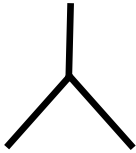
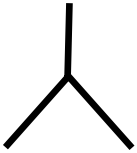
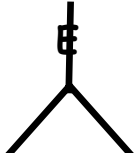

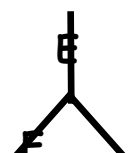







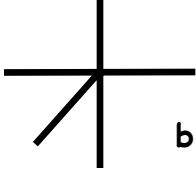
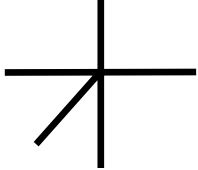
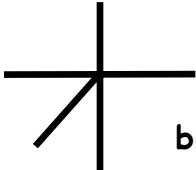
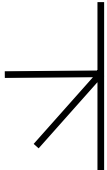
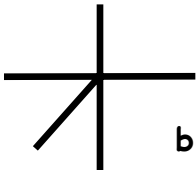
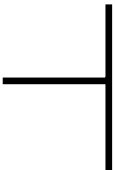
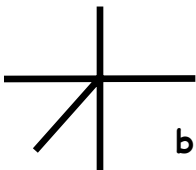

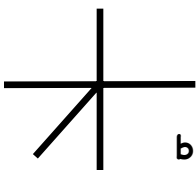

- - nonbonding electrons (NB e⁻)
- - bonding electrons (B e⁻)

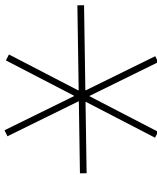
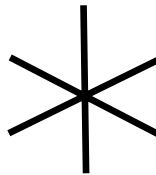
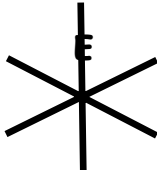

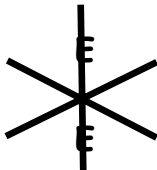

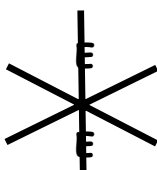

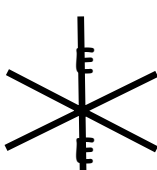

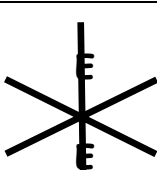

| $X + E = 2$ | $X + E = 3$ | $X + E = 4$ | $X + E = 5$ | $X + E = 6$ |
|---|--|---|--|--|
| <p>AX_2E_0</p>  | <p>AX_3E_0</p>  | <p>AX_4E_0</p>  | <p>AX_5E_0 <i>e⁻ on the equator</i></p>  | <p>AX_6E_0 <i>e⁻ on opposite sides</i></p>  |
| <p>AX_1E_1</p>  | <p>AX_2E_1</p>  | <p>AX_3E_1</p>  | <p>AX_4E_1</p>  | <p>AX_5E_1</p>  |
| | <p>AX_1E_2</p>  | <p>AX_2E_2</p>  | <p>AX_3E_2</p>  | <p>AX_4E_2</p>  |
| | | <p>AX_1E_3</p>  | <p>AX_2E_3</p>  | <p>AX_3E_3</p>  |
| | | | <p>AX_1E_4</p>  | <p>AX_2E_4</p>  |
| | | | | <p>AX_1E_5</p>  |


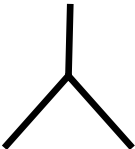
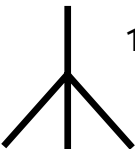
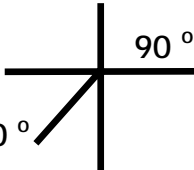
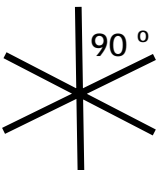
Geometry is about the **CENTRAL ATOM**

| $AXE = 4$ | e^- pair geometry | molecular geometry |
|-----------|--|--|
| AX_4E_0 |  tetra |  tetra |
| AX_3E_1 |  tetra |  pyramidal |
| AX_2E_2 |  tetra |  bent |
| AX_1E_3 |  tetra |  linear |

| $AXE = 3$ | e^- pair geometry | molecular geometry |
|-----------|---|--|
| AX_3E_0 |  trig |  trig |
| AX_2E_1 |  trig |  bent |
| AX_1E_2 |  trig |  linear |
| $AXE = 2$ | e^- pair geometry | molecular geometry |
| AX_2E_0 |  linear |  linear |
| AX_1E_1 |  linear |  linear |

| $AXE = 5$ | e^- pair geometry | molecular geometry |
|-----------------------------------|--|--|
| AX_5E_0 e^- on the equator |  trigonal bipyramidal |  trigonal bipyramidal |
| AX_4E_1 |  trigonal bipyramidal |  see-saw |
| AX_3E_2 |  trigonal bipyramidal |  T-shaped |
| AX_2E_3 |  trigonal bipyramidal |  linear |
| AX_1E_4 |  trigonal bipyramidal |  linear |

| $AXE = 6$ | e^- pair geometry | molecular geometry |
|--------------------------------------|--|--|
| AX_6E_0 e^- on opposite sides |  octahedral |  octahedral |
| AX_5E_1 |  octahedral |  square pyramidal |
| AX_4E_2 |  octahedral |  Square planar |
| AX_3E_3 |  octahedral |  T-shaped |
| AX_2E_4 |  octahedral |  linear |
| AX_1E_5 |  octahedral |  linear |

| # OF STICKS | BOND ANGLES |
|-------------|--|
| 2 | <p>180 °</p>  <p>linear</p> |
| 3 | <p>120 °</p>  <p>trig</p> |
| 4 | <p>109.5 °</p>  <p>tetra</p> |
| 5 | <p>90 °</p> <p>120 °</p>  <p>trigonal bipyramidal</p> |
| 6 | <p>90 °</p>  <p>octahedral</p> |