Table 1: Lewis Dot Structures

| Element | **Symbol** | Group Number | **Valence Electrons** | **Lewis Dot Structure** |
| --- | --- | --- | --- | --- |
| Hydrogen |  |  |  |  |
| Carbon |  |  |  |  |
| Chlorine |  |  |  |  |
| Aluminum |  |  |  |  |
| Oxygen |  |  |  |  |
| **Fluorine** |  |  |  |  |
| **Neon** |  |  |  |  |
| **Nitrogen** |  |  |  |  |

Table 2: Molecular Models

| Molecule (central atom is underlined) | Sketch of Lewis Dot Structure | Shape NameBond Angle | Structure | **Bond Angle** |
| --- | --- | --- | --- | --- |
| **CO2** |  | **Linear** | Molecular model for CO2  |   |
| **AlCl3** |  | **Trigonal Planar** | Molecular Model for AlCl3  |   |
| **H2O** |  | **Bent** | Molecular Model for H2O |   |
| **NH3** |  | **Trigonal pyramidal** | Molecular Model for NH3  |   |
| **CCl4** |  | **Tetrahedral** | Molecular Model for CCl4  |   |
| **PCl5** |  | **Trigonal bipyramidal** | Molecular Model for PCl5 |   |
| **SF6** |  | **Octahedral** | Molecular Model for SF6  |   |

**Post-Lab Questions:**

1. Should all of the angles in methane (CH4) be equal? Why or why not?

2. What additional information does the VSEPR theory give you beyond electron dot structures, in terms of molecular structure?

3. Sketch the molecular shape of the following compounds. Be sure to label the bond angles.

| Compound | Sketch of Molecular Shape |
| --- | --- |
| **H2**  |   |
| **Cl2**  |   |
| **SO2**  |   |
| **NH3**  |   |
| **MoF6**  |   |