Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Lewis Dot Structures Guided Inquiry Lab**

**Instructions: There are 12 stations set up around the room. At each station, you and your partner must manipulate the “valence electrons” of the different elements in order to create the correct Lewis structure. When you believe you have the correct Lewis structure, draw it in the chart below, and use your VSEPR worksheet to identify the molecular geometry.**

|  |  |  |
| --- | --- | --- |
| **Compound** | **Lewis Dot Structure** | **Molecular Geometry** |
| **H2O** |  |  |
| **N2** |  |  |
| **CO2** |  |  |
| **Br2** |  |  |
| **O2** |  |  |
| **CH4** |  |  |

**CHALLENGE STATIONS:** Exceptions to the Octet Rule!

Stations 7-9: Sometimes, a central element can fit more than 8 electrons around itself. The only elements that can do this are in row 3 and below (the most common are sulfur, phosphorus, silicon, arsenic, and selenium).

|  |  |  |
| --- | --- | --- |
| **Compound** | **Lewis Dot Structure** | **Molecular Geometry** |
| **PCl5** |  |  |
| **SeS2** |  |  |
| **SF6** |  |  |

**Stations 10 – 12: other exceptions to the octet rule**

|  |  |  |
| --- | --- | --- |
| **NO** |  |  |
| **O3** |  |  |
| **BF3** |  |  |