Molecular Geometry Activity

JOB 1- Build a molecular model of the compound. Use the colored balls as atoms and the springs as bonds and create the compound in 3-D. Once built determine the molecular shape it takes on.

JOB 2- Construct and 2-D model of the compound using puff-balls for electrons, element cards and coffee stirrers as bonds. (Place electrons around the elements and in the bonds as needed.) Remember that all elements was 8 electrons except H it only needs two. **Boron only wants 6 not 8.** This model is to help recognize polar from nonpolar by figuring our where the electrons are around the molecule. Determine the shape of the compound.

JOB 3- Draw a model of the compound on your paper. The element found having the least number of atoms always goes in the center. (Hydrogen can NEVER go in the center). Place the other elements around the central atom with one bond. Count your electrons. All atoms should have 8 electrons (H only needs 2). Use dots (in pairs) to complete each element’s set of 8 electrons. Determine the shape of the compound.

JOB 4- Researcher and Calculate. Use the following website to observe the shape of the compound:

<http://intro.chem.okstate.edu/1314f00/Lecture/Chapter10/VSEPR.html>

Calculate the percent composition of the compound.

Record the compound name or formula below in the table. Complete each corresponding column for the compound.

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| --- | --- | --- | --- | --- | --- |
| Molecule name and formula | Lewis Drawing of the molecule | Molecular shape of the molecule | Polar or nonpolar bonds? | Polar of nonpolar molecule? | Percent composition |
| SiO2 |  | linear | polar | nonpolar |  |
| COCl2 |  | Trigonal Planar | Polar | polar |  |
| Carbon tetrahydride |  | Tetrahedral | Polar | nonpolar |  |
| Phosphorus trifluoride |  | Trigonal pyramidal | Polar | polar |  |
| OF2 |  | Bent | Polar | polar |  |
| Nitrogen trichloride |  | Trigonal planar | Polar | polar |  |
| Chlorine |  | Not applicable | nonpolar | nonpolar |  |
| CCl4 | - | tetrahedral | Polar | nonpolar |  |