



Molecule Construction

Today, you will be using molecular model kits to determine the shapes that different molecules make. Don't eat the atoms! (well, maybe later)

Procedure:

1. Given a list of atoms, determine the molecular formula of the molecule they would make together.
2. Draw the Lewis Dot structure.
3. In the molecule, the atom with the most bonding sites is called the **central atom**. Take a gum drop and some toothpicks and make that atom (the toothpicks represent the bonding sites). Remember that electrons have the same charge (-). This means that the bonding sites on the central atom will get as far from each other as possible. Add other gum drops to the central atom's bonding sites to finish the molecule.
4. Draw your molecule as best you can 3-dimensionally.
5. Describe the shape of the molecule. (Linear, Planar Trigonal, Bent Line, etc.)

The molecules you must make are:

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| 1. molecular hydrogen (H_2) | 5. phosphorous (P) bonded with hydrogen (H) |
| 2. beryllium (Be) bonded with bromine (Br) | 6. water |
| 3. aluminum (Al) bonded with chlorine (Cl) | 7. carbon bonded with oxygen |
| 4. carbon (C) bonded with hydrogen (H) | 8. H_2CO |
| | 9. CH_3OH |

Questions:

1. Why do members of the Boron Family make different shapes than the members of the Nitrogen Family?
2. Why does water make a bent line shape while alkaline earth's make linear (straight) molecules?
3. If neon were a central atom, what shape molecule would it make? Why?
4. Were your molecules yummy?

In your conclusion, talk about how the different shapes are determined.

FULL LAB REPORT IS DUE_____.