

Chemistry Lab 3 proc

Use Styrofoam balls to represent atoms and toothpicks to represent their bonds, keeping in mind that the electrons of the atoms will repel each other. This means the terminal atoms (non central atoms with only one bond) must be arranged in a way that the electrostatic repulsion is at a minimum.

For each geometry, estimate the bond angle and draw the shape.

1. Create geometries for the molecules AX_2 , AX_3 , and AX_4 , AX_5 , AX_6 .
 - The lack of lone pairs makes these shapes fairly predictable. The angles between toothpicks will be at a maximum.
2. Create geometries for molecules featuring lone pairs (represented by a toothpick without a ball): AX_2E , AX_3E , AX_2E_2
 - You may create these geometries by removing Styrofoam balls from the original molecules
3. Create molecules AX_4E , AX_3E_2 , AX_2E_3 , which will be vaguely diamond shaped if you draw an imaginary line between terminal atoms. They inherit from AX_5 .
 - The two atoms making up the tips of the diamond are "axial" and should never be lone pairs. The lone pairs should take up the body of the diamond; the "equatorial" positions.
4. Create molecules AX_5E , AX_4E_2 , AX_3E_3 , AX_2E_4 . These inherit from AX_6 and look like a three-dimensional axis.
 - Single lone pairs go in the bottom by convention, two lone pairs will go in the +y and -y (axial) directions.

Drawing Molecular geometries

- When you need to extend into three dimensions, use a filled in wedge to represent going out of the page, and dashes to represent going into the page.

After completing the Lewis Dot Structures worksheet, use the molecule geometries you drew to create molecule geometries for each of the compounds found in the worksheet.

cleanup

DON'T THROW ANYTHING AWAY