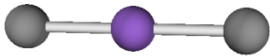
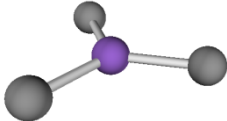
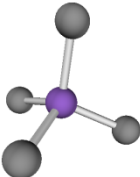
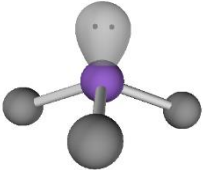
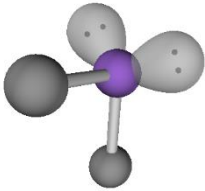


Molecule Shapes Exploration

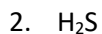
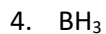
Valence Shell Electron Pair Repulsion Theory (VSEPR)

Directions:

1. Go to this website: <https://bit.ly/1QFNzo6> (if this link does not work, then try this one: https://phet.colorado.edu/sims/html/molecule-shapes/latest/molecule-shapes_en.html)
2. Select "Model".
3. Get familiar with the simulation.
 - a. The purple atom is the center atom. You can change the number of atoms and the types of bonds using the "Bonding" box.
 - b. A lone pair is a pair of non-bonding valence electrons. Only lone pairs for the center atom can be shown in this simulation. You can change the number of lone pairs around the center atom using the "Lone Pair" box.
4. Observe how adding/deleting bonds and lone pairs affect the shape of the molecule.
5. The "Name" box.
 - a. Check the box for "Molecule Geometry". This is the name of the molecule shape.
6. Build the following molecules and fill-in the table below.

Picture	Molecule Geometry Name (Molecule Shape)	# of Bonding Regions	# of Lone Pairs	Total e ⁻ regions around center atom (add # of Bonding Regions + # of Lone Pairs)
				
				
				
				
				

Application Questions: Draw the Lewis Structure for each compound below. Then use the simulation to build the molecule and determine the molecule geometry name.



Conclusion Questions:

7. What are the two types of electron regions?

8. How do electron regions “respond” to one another?

9. A single bond, double bond and triple bond each count as one bonding region. Which Lewis Structures in the Application Questions above support this statement? Explain your reasoning.