Practice Questions on VSEPR

1) Complete the table for each species listed. **Draw** the Lewis structures ***by hand***. Include lone pairs of electrons where appropriate and try to respect the geometry.

Molecule	Chemical Name	Lewis structure	Steric #	Electron geometry	Molecular geometry/Shape
H_3O^+					
NH_3					
$AlCl_3$					
BrF_5					
ClF_3					
CH_4					

SF_4					
PCl_5					
ICl_4^-					
$XeOF_4$	Xenon oxyfluoride				

2) Acetic acid (HCH_3CO_2) is the main organic constituent of vinegar. Draw a Lewis structure for acetic acid and give the bond angles *around each carbon atom*. HINT: The two carbons are connected by a single bond, and both oxygens are connected to the same carbon.

3) 3-dimensional on-line models of molecules.

Instructions :

- Go to this website: https://phet.colorado.edu/sims/html/molecule-shapes/latest/molecule-shapes_en.html
- Click on "Real Molecules."
- At the top right corner of the screen, in the box called "Molecule," click on this symbol ▼ to choose the molecule you want to create (see Figure 1 below).
- Choose from the following:
  - Options: Show lone pairs and/or bond angles.
  - Name: Molecular Geometry and/or Electron Geometry.
- Move the molecule around to see how it looks from different perspectives.

- Complete this activity for 5 molecules.

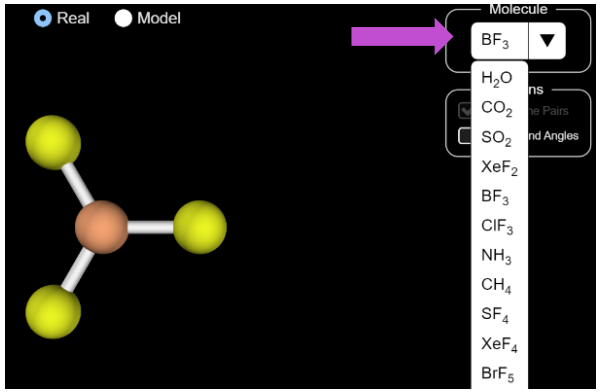

Figure 1: Choose the Molecule

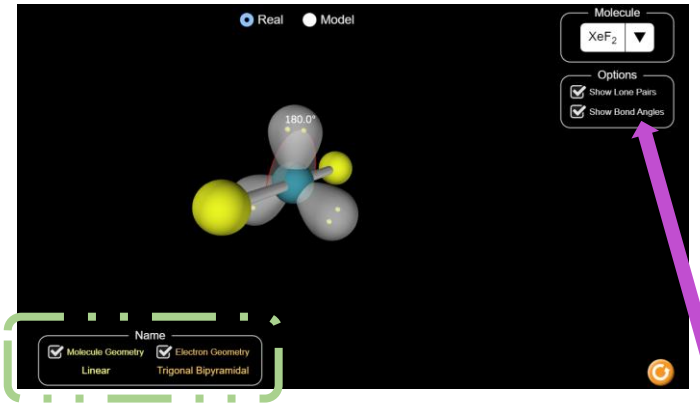

Figure 2: Choose the Name (Molecular or/and Electron Geometry) and Options (Show lone pairs and/or bond angles).