

Table 1: Drawing Lewis structure and determining electron & Bonding domains

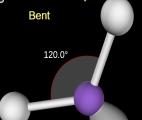
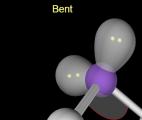
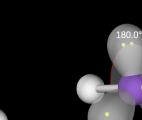
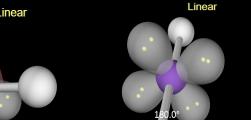
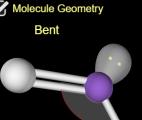
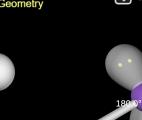
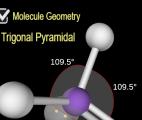
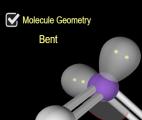
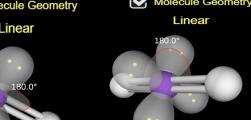
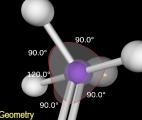
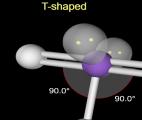
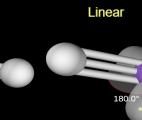
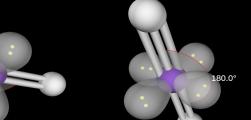
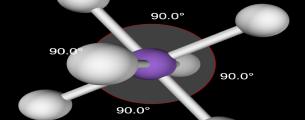
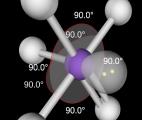
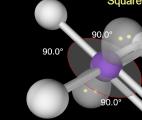
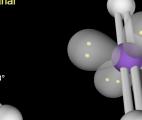
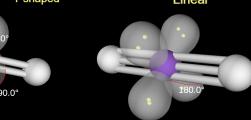
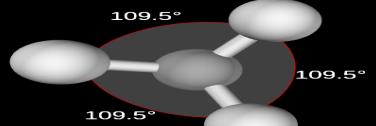
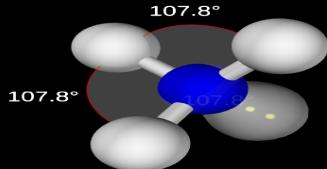
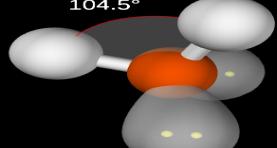
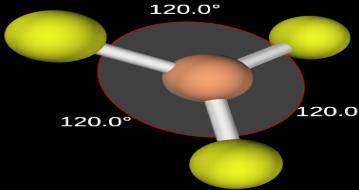
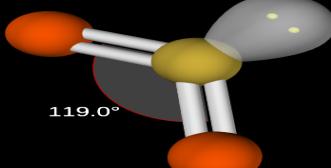
Number of Domains Around Central Atom	Electron Geometry (No lone pairs)	1 Lone Pair	2 Lone Pairs	3 Lone Pairs	4 Lone Pairs
2 Linear					
3 Trigonal Planar					
4 Tetrahedral					
5 Trigonal Bipyramidal					
6 Octahedral					

Table 2: Drawing Lewis structure and determining electron & Bonding domains

Formula of compound	Lewis Structure	Bond Angles	# Of bonding e ⁻ groups (central atom)	# Of non-bonding e ⁻ groups (central atom)	# Of total electron groups (central atom)

Table 3: Drawing 3D Model with correct bond angles

Formula of the molecule	3D Model with correct bond angles
CH_4 <input checked="" type="checkbox"/> Electron Geometry <input checked="" type="checkbox"/> Molecule Geometry Tetrahedral Tetrahedral	
NH_3 <input checked="" type="checkbox"/> Electron Geometry <input checked="" type="checkbox"/> Molecule Geometry Tetrahedral Trigonal Pyramidal	
H_2O <input checked="" type="checkbox"/> Electron Geometry <input checked="" type="checkbox"/> Molecule Geometry Tetrahedral Bent	
BF_3 <input checked="" type="checkbox"/> Electron Geometry <input checked="" type="checkbox"/> Molecule Geometry Trigonal Planar Trigonal Planar	
SO_2 <input checked="" type="checkbox"/> Electron Geometry <input checked="" type="checkbox"/> Molecule Geometry Trigonal Planar Bent	

4. The worksheet completed by the students will be reviewed by the faculty with the help of PhET simulations software.

Lab 3_Session 2 Worksheet

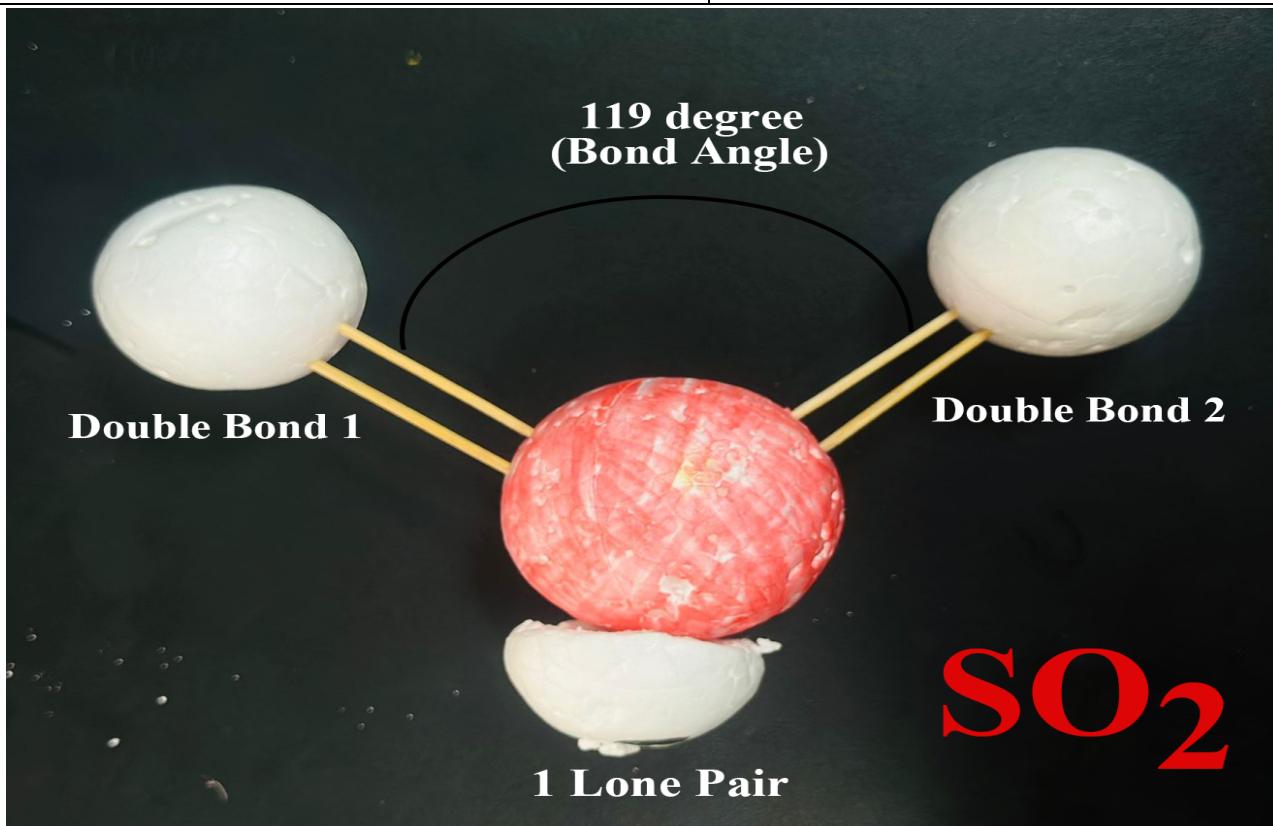
Name & ID of the student: 1. Student 1:	Section:
Name and Formula of the molecule/species 1 given during lab:	
Lewis Structures:	# Molecular Geometry =
2. Student 2: 3. Student 3:	# Valence electrons =
 <p>H₂O</p>	

Name and Formula of the molecule/species 2 given during lab:

Lewis Structures:

Molecular Geometry =

Valence electrons =

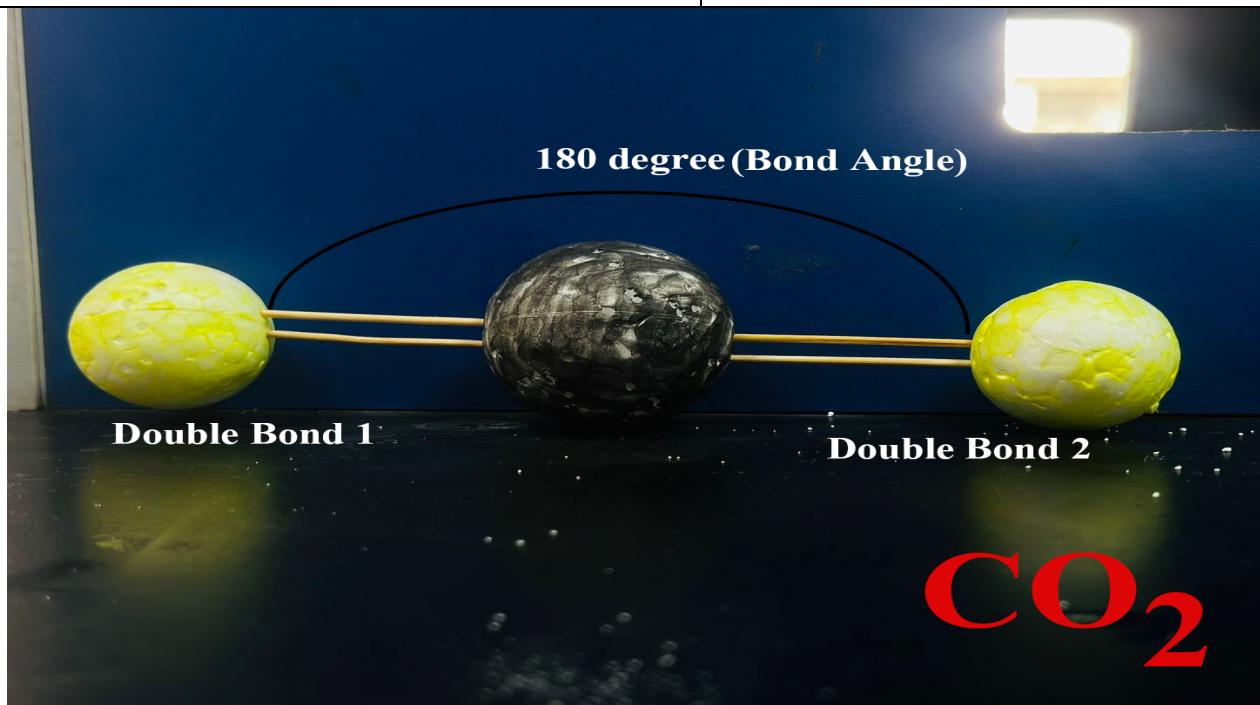


Name and Formula of the molecule/species 3 given during lab:

Lewis Structures:

Molecular Geometry =

Valence electrons =



References:

1. Molecule Shapes Interactive
Simulation: [http://phet.colorado.edu/en/simulation/molecule-shapes\(link is external\)](http://phet.colorado.edu/en/simulation/molecule-shapes(link is external)) |
use the Molecule Shapes - Guided-Inquiry Activity (by Timothy Herzog & Emily Moore)
found under the Teacher's menu on the main simulation
page. [https://phet.colorado.edu/en/contributions/view/3947\(link is external\)](https://phet.colorado.edu/en/contributions/view/3947(link is external)) (accessed 07/18/22)