

Quiz for Video 14 – Molecular Geometry

- Adding the number of bonded plus non-bonded pairs gives the electron geometry of a central atom.
 - True
 - False
- Lone pairs have no effect on molecular geometry.
 - True
 - False
- How do double bonds contribute to the molecular geometry compared to a single bond?
 - Double bonds count for 2 electron domains
 - Double bonds have greater repulsion
 - Double bonds have greater electronegativity
 - Double bonds also behave the same, as a single electron domain
- Water and Carbon dioxide both contain identical polar covalent bonds. Why is water a polar molecule, while carbon dioxide is not?
 - Only water contains polar bonds
 - Only water has hydrogen
 - Water has a bent structure
 - Carbon dioxide has double bonds
- Ammonia (NH_3) contains three bonds and one lone pair - what is the geometry of ammonia?
 - Trigonal Planar
 - Tetrahedral
 - Bent
 - Trigonal Pyramid
- Formaldehyde (H_2CO) contains three bonded regions. What is the geometry of formaldehyde? (Hint: draw out the Lewis structure)
 - Trigonal Planar
 - Tetrahedral
 - Bent
 - Trigonal Pyramid
- Water has a tetrahedral electron geometry, but a bond angle of 104.5° which is less than the 109.5° for tetrahedral structures. Why?
 - Water is a special exception
 - Lone pairs repel more strongly than bonded pairs
 - Lone pairs have larger electronegativities than bonded pairs
 - Water has only 2 bonds
- Polarity of a molecule affects which of the following properties?
 - The physical state of a molecule
 - The electronegativity of the atoms
 - The electron geometry
 - The molar mass
- Why do we never need to consider the geometry around a hydrogen atom?
 - Hydrogen only makes one bond
 - Hydrogen is too small to be considered
 - Electrons determine the geometry, not hydrogen
 - Hydrogen is a gas at room temperature
- Which of the following molecules is improperly matched with its geometry?
 - CH_4 – tetrahedral
 - NF_3 – trigonal pyramid
 - H_2O – bent
 - CO_2 – bent