Unit 5: Intermolecular Forces

Learning Targets and Success Criteria

1. Draw Lewis structures for simple molecules and polyatomic ions.

* I can draw Lewis structures showing single, double, and triple bonds.
* I can predict chemical formulas using Lewis structures.

1. Determine the bond angle and name the geometry for simple covalent molecules and ions.

* I can explain which arrangements are tetrahedral, trigonal pyramidal, bent, trigonal planar, or linear.

1. Identify if a molecule is polar or nonpolar given a structural formula for the compound.

* I can define electronegativity.
* I can define dipole moments and indicate dipole moment on a Lewis Dot Structure.
* I can use polarity of bonds and molecular shape to determine the polarity of a molecule**.**

1. Evaluate the strengths of intermolecular forces.
   * I can identify whether the following intermolecular forces are present: dipole-dipole, London dispersion, and hydrogen bonds
   * I can explain how the size of a molecule affects its London dispersion forces.
2. Use intermolecular forces (IMFs) to explain properties of substances.

* I can define surface tension and relate it to strengths of IMFs.
* I can predict solubility in water based on IMFs.
* I can predict whether a substance is a solid, liquid or gas at room temperature based on its IMFs.

1. Relate changes in states to forces of attraction between molecules.

* I can compare the relative strengths of forces between molecules based on the melting point and boiling point of the substances
* I can explain why the melting and boiling points of water are significantly higher than other molecules of similar size.