By the end of the Chemistry Unit you will be able to:

**State various ways of classifying matter:**

* Describe the main points of the particle theory of matter
* Know the difference and give examples of qualitative and quantitative properties of matter
* Define and calculate mass and volume
* Give examples of pure substances and mixtures including heterogeneous and homogeneous mixtures.
* Describe and give examples of properties of matter:
  + Identify physical properties of matter including mass, volume, density, state at room temperature, colour, melting/boiling point, malleability, ductility, and conductivity.
  + Use the Kinetic Molecular Theory to explain the change of states of matter in terms of condensation deposition, melting, freezing, evaporation, and sublimation.
  + Identify chemical properties: flammability, corrosion, reactions with acid
* Differentiate between and give examples of physical and chemical changes
* Calculate density, mass, or volume when given two of the three variables.

**Demonstrate understanding of how the arrangement of electrons in an element impacts its chemical nature by being able to:**

* Discuss how the model of the atom evolved regarding contributions from Dalton, Thompson, Rutherford, and Bohr
* Identify subatomic particles by charge, location and mass
* Determine and understand the difference between atomic mass and atomic number
* State and demonstrate the Law of Conservation of Mass
* Label on a periodic table: groups, periods; metals, non-metals, and metalloids; and the 4 main groups of elements: alkali metals, alkaline earth metals, halogens and noble gases and give characteristics and examples of each.
* Draw Bohr diagrams of the first 20 elements of the periodic table
* Write chemical formulas for both ionic and covalent compounds including polyatomic ions.
* Name ionic compounds including those with monovalent metals, non-metal ions, polyatomic ions, multivalent ions.