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| Approx. Timeframe | Unit topic | PLO | Materials Required for Lab exercises (per group) | Assessment |
| Feb 3th – feb 21st | The Nature of Matter | - relate the observable properties and characteristics of elements, compounds, and mixtures to the concept of atoms and molecules  - write the names and formulae for ionic and covalent compounds, given appropriate charts or data tables  - describe the characteristics of matter  - differentiate between physical and chemical changes  - select an appropriate way of separating the components of a mixture | Paper Chromatography Lab:  - large white coffee filters  - Various coloured water soluble ink markers  - approx. 500mL plastic container (yogurt container or similar)  - 500mL of water | - Unit tests  - Weekly quizzes  - Lab Reports  - Written assignments  - Daily Review Questioning |
| Feb 24h – mar 7th | Mole Concept | - explain the significance and use of the mole  - perform calculations involving the mole  - determine relationships between molar quantities of gases at STP  - perform calculations involving molecular and empirical formulae to identify a substance  - describe concentration in terms of molarity  - perform calculations involving molarity | Determining the Molar Mass of a Gas  - Safety glasses  - butane lighter (flint removed)  - 500mL graduated cylinder  - scale or balance able to measure 1/100th of a gram(Triple beam scale is ideal)  -Large plastic container (5 -10 gallon) | - Unit tests  - Weekly quizzes  - Lab Reports  - Written assignments  - Daily Review Questioning |
| Mar 10th – april 4rth | Chemical Reactions | - explain chemical reactions in terms of the rearrangement of the atoms as bonds are broken and new bonds are formed  - apply the law of conservation of mass to balance formula equations  - devise balanced equations for various chemical reactions  - describe reactions in terms of energy changes  - perform stoichiometric calculations involving chemical reactions | Building Molecular Model Lab  -Ball and stick molecular model kit | - Unit tests  - Weekly quizzes  - Lab Reports  - Written assignments  - Daily Review Questioning |
| April 7st – 25th | Atomic Theory | describe the development of the model of the atom  - describe the sub-atomic structures of atoms, ions, and isotopes, using calculation where appropriate  - describe the development of the modern periodic table  - draw conclusions about the similarities and trends in the properties of elements, with reference to the periodic table  - justify chemical and physical properties in terms of electron population  - demonstrate knowledge of various types of chemical bonding  - apply understanding of bonding to create formulae and Lewis structures | Observing Hydrogen Bond Formation  - safety glasses  - 2 styrofoam cups with center-hole lids  - 10 mL water  - 10 mL glycerol  - thermometer | - Unit tests  - Weekly quizzes  - Lab Reports  - Written assignments  - Daily Review Questioning |
| April 28st- may 16th | Solution Chemistry | - distinguish between a solution and a pure substance  - predict the relative solubility of a solute in a solvent, based on its polarity  - relate ion formation to electrical conductivity in aqueous solutions  - calculate the concentration of ions in solution |  | - Unit tests  - Weekly quizzes  - Lab Reports  - Written assignments  - Daily Review Questioning |
| May 19th – june 13th | Organic Chemistry | - describe characteristic features and common applications of organic chemistry  - demonstrate knowledge of the various ways that carbon and hydrogen can combine to form a wide range of compounds  - generate names and structures for simple organic compounds  - differentiate the various types of bonding between carbon atoms  - identify common functional groups  - perform a simple organic preparation |  | - Unit tests  - Weekly quizzes  - Lab Reports  - Written assignments  - Daily Review Questioning |