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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 |