

1st nine weeks (July 11-Sep 20)

STANDARDS ADDRESSED: Matter, ELECTRONS AND STRUCTURE OF ATOMS
3.1,3.1.1,3.1.2,3.1.3,3.2.1,3.2.2,3.3.3, 4.1.2,4.2.2,4.3.3,5.2,5.2.2,5.2.2,5.3.3,5.3.4,
6.1.1,6.1.3,,6.2.2,6.3.2,6.3.3,7.3.2,7.3.3

- **Scientific measurement:** Students will learn units of measurements, solving conversion problems. Additional work sheets will be provided to students to reinforce the content knowledge.
- **Atomic Structure:** Students will learn about defining the Atom, structure of Nuclear Atom, Distinguishing among atoms.
- **Electrons in Atom :** Students will learn electron arrangement in Atom, Atomic emission spectra and quantum mechanical model.
- **The Periodic Table :** Students will learn organizing the elements, classifying the Elements and Periodic Trends. Students will be working on a collaborative project
- **Ionic and metallic Bonding:** Students will learn about formation of ions, ionic bonds and ionic compounds and bonding in metals.

2nd nine weeks (Oct 16- Dec 16)

STANDARDS ADDRESSED: BONDING AND INTERACTIONS 8.1.1-8.4.2,9.1.2-9.5.2,
MOLE AND MEASUREMENTS 10.1.2-10.3.3 BALANCING EQUATIONS 11.1.2-11.3.2

- **Covalent Bonding:** Students will learn about molecular compounds, nature of covalent bonds, bonding theories, polar bonds and molecules.
- **Chemical names and Formulas:** Students will learn about naming ions, naming and writing formulas for ionic compounds, naming and writing formulas for molecular compounds, the laws governing how compounds are formed.
- **Chemical Quantities:** Students will learn about The Mole, Mole-Mass, Mole-Volume relationships, percent composition and chemical formulas.
- **Chemical Reactions:** Students will learn how to describe chemical reactions, types of chemical reactions, Reactions in Aqueous solution. This will be followed by lab.

3rd nine weeks (Jan 8-Mar8)

STANDARDS ADDRESSED: ARITHMETIC OF EQUATION 12.1.2-12.3.2 KINETIC THEORY
14.1.2-14.4.2,16.1.2-16.4.2

- **Stoichiometry:** Students will learn about the arithmetic of equations, the chemical calculations, Limiting reagents and percent yield. This will be followed by a collaborative project.
- **Behavior of gases:** Students will learn about behavior of gases, the gas law, the Ideal gas and gas mixtures and movements.
- **Solutions:** Students will learn about the properties of solutions, concentrations of solutions, colligative properties and calculations involving colligative properties.

4th nine weeks (April 2- May 23)

STANDARDS ADDRESSED: MATTER AND ENERGY 17.1.2-17.4.1,18.2.1-18.5.4, 19.1.3- 19.5.2

- **Thermochemistry:** Students will learn about energy flow, measuring and expressing enthalpy changes, calculating heat in changes of state, Hess's law, and calculating heats of reactions.
- **Reaction Rates and Equilibrium:** Students will learn about rates of reactions, the progress of Chemical reactions, reversible reactions and equilibriums, solubility equilibrium, Le Chatelier's principle, free energy and entropy.
- **Acids, Bases and Salts:** Students will learn about Acid Base Theories, hydrogen ions and acidity, strengths of acids and bases, neutralization reactions, salts in solution. This will be followed by a Titration lab.

