CHEMISTRY
Year at a Glance (YAG)
2021-2022

First Semester		Second Semester	
1st Nine Weeks – 40 days		**3rd Nine Weeks – 45 days**	
TEKS C.1A,B,C C.2E,F,G,H,I C.2A,B,C,D C.4A,B,C,D C.6A,D C.8A,B C.12A,B,C	**Scientific Processes** Students will be able to utilize scientific method while demonstrating proper lab techniques and safety procedures. **Classification of Matter** Students will classify matter, identify chemical/physical properties and changes, and analyze the relationships between chemical and physical properties. **Atomic Theory** Students will understand the experimental design of the atomic model and the evolution of the modern atomic theory. **Nuclear Chemistry** Students will understand the basic processes of nuclear reactions, radioactive decay, fission and fusion.	**TEKS** C.8A,D C.10H C.8E C.9A,B,C	**Chemical Equations and Reactions** Students use the Law of Conservation of Mass to write and balance equations and will classify the type of reaction shown. **Stoichiometry** Students will perform stoichiometric calculations involving mass, volume, limiting reactants, percent error, and percent yield. **Phases and Gases** Students relationships between pressure, temperature, volume, moles, and density of a gas using equations for all of the gas laws.
2nd Nine Weeks – 43 days		**4th Nine Weeks – 45 days**	
TEKS C.6B,C,E C.5A,B,C C.7A,B,C,D,E C.8C	**Electromagnetic Radiation/Behavior of Electrons** Students will understand the electromagnetic spectrum, and be able to calculate mathematical relationships for the properties of waves. **Periodic Table** Students will be able to identify and predict trends of elements based on position and properties. **Chemical Bonding, Formulas, and Naming** Students will understand how ionic and covalent bonds are formed, and will be able to write and name chemical compounds according to IUPAC nomenclature.	**TEKS** C.10A,B,C,D,E C.10G,H,I,J	**Composition of Solutions** Students will calculate the concentration of solutions and use molarity to calculate a dilution. **Ionization** Students will distinguish dissolving from dissociation and identify types of solutions based on conductivity, solubility, and saturation. **Acid-Base Theory** Students will define acids and base according to Arrhenius, Bronsted-Lowry, and Lewis definitions. **Acid-Base Calculations** Students will define and calculate pH from hydrogen and hydroxide concentrations. Students will understand acid-base reactions through a titration equation.

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1st Nine Weeks	2nd Nine Weeks	3rd Nine Weeks	4th Nine Weeks
Chemistry Textbook Vernier Probeware & Software (Freezing & Melting of Water) pHet simulations - States of Matter, Building an Atom	Chemistry Textbook Vernier Probeware & Software (Alpha, Beta, Gamma - radioactive decay) pHet simulations -Photoelectric Effect, Molecular Building, Atomic Interactions Alpha Decay, Beta Decay	Chemistry Textbook Vernier Probeware & Software (Boyle's Law) pHet simulations - Balancing Chemical Reactions, Reversible Reactions, States of Matter, Sugar and Salt Solutions	Chemistry Textbook Vernier Probeware & Software (Conductivity of Solutions, Beer's Law, Effect of Temp on Solubility of a Salt, Titration Curves of Strong & Weak Acids) pHet simulations pHet simulations - Concentration, Acid/Base Solutions,