EAGLE MOUNTAIN SAGINAW ISD
Curriculum and Instruction

Chemistry On-Level Parent Guide

Students in Chemistry will study a variety of topics that include characteristics of matter, use of the Periodic Table, development of atomic theory, chemical bonding, chemical stoichiometry, gas laws, solution chemistry, acid-base chemistry, thermochemistry, and nuclear chemistry. This course is a laboratory-oriented course that emphasizes the skills of gathering and analyzing both qualitative (observational) and quantitative (numerical) data. A conceptual approach will be coupled with mathematical skills necessary to solve fundamental chemistry problems. Students will investigate how chemistry is an integral part of our daily lives. Texas Essential Knowledge and Skills for Chemistry §112.43. Science, Chemistry, Adopted 2021

1st 6 Weeks: Course Introduction/Safety/Interactive Science Notebooks Science and Engineering Practices Modeling Atoms Atom Emission Spectra & the Bohr Model Modern Atomic Theory Electrons in Atoms The Periodic Table: The Periodic Table & Atomic Structure Periodic Trends	**4th 6 Weeks:** Chemical Reactions: Modeling Chemical Reactions; Predicting Outcomes of Reactions; Reactions in Aqueous Solution Stoichiometry: Quantifying Reactants and Products; Stoichiometric Calculations Limiting Reagent and Percent Yield The Behavior of Gases: Properties of Gases
2nd 6 Weeks: Chemical Bonding: Ionic Bonds; Metallic Bonds Intermolecular Attractions Names and Formulas of Compounds Physical Properties of Substances: States of Matter Modeling Phase Changes Comparing Ionic & Molecular Compounds Comparing Metals and Nonmetals	**5th 6 Weeks:** The Behavior of Gases: The Gas Laws; Ideal Gases Gases – Mixtures and Movements Matter, Energy & Change: Intro to Energy, Modeling Energy, Conservation of Matter, Heat Transfer & Thermal Equilibrium Thermochemistry: Energy in Chemical Bonds, Enthalpies of Formation and Reaction and Changes of State Chemical Reactions: Activation Energy, Reversable Reactions, Thermodynamics and Favorability
3rd 6 Weeks: Water and Aqueous Systems Properties of Solutions Chemical Qualities: The Mole Concept, Molar Relationships Percent Composition and Empirical Formulas Concentration of Solutions	**6th 6 Weeks:** Acid-Base Chemistry: Defining Acids and Bases, Acid-Base Reactions, Buffer Systems Oxidation-Reduction Reactions: Oxidation vs. Reduction, Modeling Redox Reactions and Applications Nuclear Processes: Radioactivity and Half-Life, Applications of Nuclear Phenomena, Fission and Fusion

Questions? Please contact your course science teacher.

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