

Year at a Glance
 Chemistry I—Pre-AP Level
Readiness, Supporting, and Process TEKS

1 st Grading Period	2 nd Grading Period
<p>Matter</p> <ul style="list-style-type: none"> Matter vs. Energy (TEKS C.9B) Kinetic Theory / States: Solid, liquid, gas in terms of compressibility, structure, shape, and volume (TEKS C.9B, TEKS C.4C) Phys/Chem. Properties and Changes (TEKS C.4A) Intensive/Extensive properties (TEKS C.4B) Mixtures/pure substances (TEKS C.4D) Use of heat of fusion and heat of vaporization to calculate energy changes (LO 5.6) <p>Atom & Nuclear</p> <ul style="list-style-type: none"> History of atom – Scientists: Dalton, Rutherford, Thomson, Bohr (TEKS C.6A, TEKS C.3F) Electromagnetic spectrum and mathematical relationship to energy, frequency, wavelength (TEKS C.6B) Calculate average atomic mass using isotopes (TEKS C.6C) Define and calculate mole of element using dimensional analysis (TEKS C.8A, TEKS C.8B, TEKS C.2G) Alpha, beta, and gamma radiation (TEKS.12A) Fission and Fusion (TEKS C.12B) Radioactive decay/Balance nuclear equation (TEKS C.12A) <p>Periodic Table and Ionic Compounds</p> <ul style="list-style-type: none"> History with relation to chemical and physical properties (TEKS C.5A) Families on PT: alkali metals, alkaline earth metals, halogens, noble gases, and transition metals (TEKS C.5B) Trends: atomic radii, ionization energy, and electronegativity (TEKS C.5C) Electron configuration and Lewis Dot structures (TEKS C.6D) Electron dot formulas to illustrate ionic bonding (TEKS C.7C) molar mass of compounds (TEKS C.8B) Naming ionic compounds (TEKS C.7A) Writing formulas for ionic compounds (TEKS C.7B) 	<p>Compounds</p> <ul style="list-style-type: none"> Ionic/Covalent/metallic bonding properties and predict type of bonds (TEKS C.7C, TEKS C.7D) Electron dot formulas to illustrate bonding (TEKS C.7C) VESPR: linear, trigonal planar, tetrahedral (TEKS C.7E) Molar mass/mole (TEKS C.8A, TEKS C.8B, C.2G) Intermolecular forces Naming covalent compounds (TEKS C.7A) Writing formulas for covalent compounds (TEKS C.7B) Empirical formula (TEKS C.8D) Percent composition (TEKS C.8C) Intermolecular forces (LO 2.16) <p>Chem. Reactions and Stoichiometry</p> <ul style="list-style-type: none"> Types of Reactions (TEKS C.8F) <ul style="list-style-type: none"> Double Replacement: Acid-base and Precipitation Oxidation-reduction: Synthesis, Decomposition, Single Replacement & Combustion Predict products in acid-base reactions that form water (TEKS C.10G) Balance equations/Law of Conservation of Mass (TEKS C.8E) Stoichiometric calculation (TEKS C.8G) Mass relationships between reactants and products (TEKS C.8G) Limiting reagents (TEKS C.8H) Percent yield (TEKS C.8G) <p>Review and Exam</p>

3 rd Grading Period	4 th Grading Period
<p>Solutions</p> <ul style="list-style-type: none"> • Role of water in solutions (polarity) (TEKS C.10A) • Draw/Interpret relationship between solute and solvent (LO 2.8) • Solubility Rules (TEKS C.10B) • Ionic vs Covalent Compounds dissolving (LO 3.2) • Types of solutions: electrolyte, nonelectrolyte, saturated, unsaturated, supersaturated (TEKS C.10E) • Rate of dissolving (TEKS C.10F) • Calculate Molarity of solutions (TEKS C.10C) • Use molarity to calculate dilutions (TEKS C.10D) • Net ionic equations (LO 3.2) <p>Acids and Bases</p> <ul style="list-style-type: none"> • Acids/Bases (TEKS C.10G) <ul style="list-style-type: none"> ➢ Definitions ➢ Arrhenius ➢ Bronsted-Lowry • Properties of acids and bases • Define and calculate pH (TEKS C.10I) • Common household products • Strengths and Concentrations of Acids and Bases (TEKS C.10J) • Write acid/base compounds (TEKS C.7A) • Write formulas for acids and bases (TEKS C.7B) <p>Gas Laws</p> <ul style="list-style-type: none"> • Kinetic theory (TEKS C.9B) • Gas Laws: Boyle's, Charles', Avogadro, Dalton's, Ideal (TEKS C.9A) • Stoichiometric calculations (TEKS C.8G) 	<p>CBA – over material from 3rd grading period</p> <p>Thermochemistry and Rates of Reaction</p> <ul style="list-style-type: none"> • Types of energy (TEKS C.11A) • Law of conservation of energy/heat transfer (TEKS C.11B) • Identify and measure energy in chemical reactions: Endothermic/Exothermic (TEKS C.11C) • Calculations with specific heat & calorimetry (TEKS C.11D-E) • Calculate Gibbs free energy (LO 5.14) • Use Hess's law to calculate enthalpy (LO 5.13) <p>Kinetics</p> <ul style="list-style-type: none"> • Rates of reaction –relationship to temp, conc, surface area, catalyst (LO 4.1) • Collision theory (LO 4.4) • Write equations for rates (LO 4.2) • Order of reactions (LO 4.2) • Rate laws (LO 4.2, 4.4) • Reaction mechanism (LO 4.2, 4.4) <p>Equilibrium (LO 6.5, 6.8)</p> <ul style="list-style-type: none"> • Chemical equilibrium(LO 6.8) • Le Chatelier's Principle (LO 6.8) • Calculate Kc and Kp (LO 6.5) <p>Exam</p>

Process TEKS will be taught throughout the entire year.