

Year at a Glance 2017-2018

Chemistry PAP

Readiness, Supporting, and Process TEKS

1 st Grading Period	2 nd Grading Period
<p>Math Review</p> <ul style="list-style-type: none"> • Process TEKS: C.1A, C.1B • Review Math Skills (TEKS C.2F, 2G) <p>Matter</p> <ul style="list-style-type: none"> • Matter vs. Energy (TEKS C.9C) • Kinetic Theory / States: Solid, liquid, gas in terms of compressibility, structure, shape, and volume (TEKS C.9C, TEKS C.4C) • Phys/Chem. Properties and Changes (TEKS C.4A) • Intensive/Extensive properties (TEKS C.4B) • Mixtures/pure substances (TEKS C.4D) <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.6D) • Define and calculate mole of element using dimensional analysis (TEKS C.8A, TEKS C.8B, TEKS C.2G) • Alpha, beta, and gamma radiation (TEKS C.12A) • Fission and Fusion (TEKS C.12C) • Radioactive decay/Balance nuclear equation (TEKS C.8D, C.12B) <p>Periodic Table</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 and ionic radii, (TEKS C.5C) 	<p>Periodic Table (continued)</p> <ul style="list-style-type: none"> • Trends: ionization energy, electronegativity (TEKS C.5C) • Electron configuration (TEKS C.6E) <p>Compounds</p> <ul style="list-style-type: none"> • Atom arrangements in Lewis dot structures (TEKS C.6E) • 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 ionic and covalent compounds (TEKS C.7A) • Writing formulas for ionic and covalent compounds (TEKS C.7B) • Empirical formula (TEKS C.8C) • Percent composition (TEKS C.8C) <p>Chem. Reactions and Stoichiometry</p> <ul style="list-style-type: none"> • Types of Reactions (TEKS C.10H) <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.8D) • Stoichiometric calculation (TEKS C.8E) • Mass relationships between reactants and products (TEKS C.8E) • Limiting reagents (TEKS C.8E) • Percent yield (TEKS C.8E) <p>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) • Solubility Rules (TEKS C.10B) • Ionic vs Covalent Compounds dissolving • Types of solutions: electrolyte, nonelectrolyte, saturated, unsaturated, super saturated (TEKS C.10E) • Rate of dissolving (TEKS C.10F) • Calculate Molarity of solutions (TEKS C.10C) • Use molarity to calculate dilutions (TEKS C.10D) • Fluids and Alloys (enrichment only) <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>Equilibrium</p> <ul style="list-style-type: none"> • Chemical equilibrium • Le Chatelier's Principle • Calculate Kc and Kp <p>Organic (if time permits)</p> <ul style="list-style-type: none"> • Naming alkanes, alkenes, and alkynes • Functional groups (alcohols, carboxyl, amine, sulfhydryl, methyl, ethyl, ketones) 	<p>CBA – over material from 3rd grading period</p> <p>Gas Laws</p> <ul style="list-style-type: none"> • Kinetic theory (TEKS C.9C) • Gas Laws: Boyle's, Charles', Avogadro, Dalton's, Ideal (TEKS C.9A) • Stoichiometric calculations (TEKS C.8E) <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 <p>Kinetics</p> <ul style="list-style-type: none"> • Rates of reaction –relationship to temp, conc, surface area, catalyst • Collision theory • Write equations for rates • Order of reactions • Rate laws • Reaction mechanism <p>Exam</p>

Process Skills will be taught throughout the entire year.