|  |  |  |  |
| --- | --- | --- | --- |
| **1st TERM** (*PAP concepts in italics)* | **2nd TERM**  *(PAP concepts in italics)* | **3rd TERM** (*PAP concepts in italics)* | **4th TERM** (*PAP concepts in italics)* |
| **1: Safety** | **5: Electrons in Atoms and Periodic Table History/Structure**   * Atomic models: plum pudding, Bohr, Schrodinger * Electromagnetic spectrum, energy, frequency/wavelength * Electron configurations (intro to Lewis dot structures and ions) * Periodic table history * Periodic table trends (including valence electrons, ions) | **8: Empirical/Molecular Formulas**   * Review molar mass * Empirical/molecular concepts * *Empirical/molecular calculations* * *Hydrates* | **12: Gas Laws**   * Conceptual gas laws * KMT * Diffusion/effusion * Real vs ideal * Boyles, Charles, Gay Lussac * Combined Gas Law * Dalton’s Partial Pressures * Avogadro’s Hypothesis * Ideal Gas Law * Ideal vs Real gases |
| **2: Properties of Matter**   * Substance/Compound * Homogeneous/Heterogeneous * Physical/Chemical * Intensive/Extensive * Qualitative/Quantitative | **6: Bonding and Intermolecular Forces**   * Ionic bonding, properties * Metallic bonding, properties * Covalent bonding, properties * Ionic vs Covalent compounds * Lewis dot structures for cmpds * VSEPR * Polar bonds; polar molecules * *IMF’s and physical properties of cmpds* | **9: Balancing/Reaction Types**   * Writing equations * Balancing equations * Reaction types/predicting products (ACA is limited) * *Intro to Redox* | **13: Solids, Liquids, and Phase Changes**   * States of Matter/properties * Phase Diagrams * Phase Change Diagrams * Properties of Water * *Allotropes* |
| **3: Measurement**   * Accuracy/Precision * SI units and metric * Significant Figures and Calculations * Dimensional Analysis (intro to mole quantity for calculations) | **7: Nomenclature**   * Ionic * Binary Covalent * Polyatomic * Acids and Bases | **10: Stoichiometry**   * Mole-mole and mass-mass * Mass-volume-rep particles * Limiting reagents, % yield concepts * *Lim reagent, % yield calcs* | **14: Solutions, Mixtures, Molarity**   * Solution vs Mixture * Types of Mixtures * Molarity calculations * Solubility rules * *Net Ionic Equations* |
| **4: Atomic Theory and Structure**   * Dalton’s Atomic Theory * Subatomic particles and their discoveries: Thomson, Rutherford * Isotopes * Atomic number, Mass number * Average Atomic Mass * Moles/molar mass |  | **11: Thermochemistry**   * Heat vs Temperature * Calorimetry * Enthalpy diagrams * Thermochemical Equations * Heats of Formation * *Hess’s Law* | **15: Acids and Bases**   * Properties of acids, bases, salts * Review of naming * pH scale and calculations * Neutralization and titration calcs |
|  |  |  | **16: Nuclear (if time permits!)**   * Types of radiation * Balancing nuclear equations * Half life * Fission vs Fusion * Uses of nuclear energy |