Rockwall ISD Chemistry Honors Year-at-a-Glance

	Term 1	Term 2	Term 3	Term 4
Focus TEKS ESSENTIAL	Unit 1 1A, **1B**, 1C, 2A-I, 3A-E, **8A**, 8B, 8C Unit 2 1C, 2E, 2I, 4A, 4B, 4C, 4D Unit 3 2A, 2B, 2C, 2D, 2E, 2H, 2I, 3A, 3D, 3F, 5A, **5B**, 5C, 6A, 6C	Unit 4 *(started in Term 1)* 2D, 2I, 3B, 3D, 3E, 6B, **6D**, **12A**, 12B Unit 5 1A, **1B**, 1C, 2E, 2F, 2H, 2I, 3F, **6D**, **7A**, **7B**, 7C, 7D, 7E, 8C, 8D Unit 6 2D, 2E, 2F, 2H, 2I, **6D**, **7A**, **7B**, 7C	Unit 7 2D, 2E, 2I, 3F, 8E, **8F** Unit 8 2E, 2F, **2G**, 2H, 2I, **8F**, **8G**, 8H Unit 9 10A, 10B, 10C, 10D, **10E**, 10F	Unit 10 2E, 2D, **2G**, 2H, 2I, **11A**, 11B, 11C, 11D Unit 11 2E, 3A, **2G**, 2I, **10E**, 10G, 10H Unit 12 1A, 2D, 2E, 2F, **2G**, 2H, 2I, 3F, 9A, 9B
Topic Focus	Unit 1 Chemistry Tools and Lab Safety Unit 2 Matter Unit 3 Atomic Structure and the Periodic Table	Unit 4 *(started in Term 1)* Electron Configuration, Light and Nuclear Unit 5 Covalent Compounds Unit 6 Ionic Compounds	Unit 7 Chemical Equations and Reactions Unit 8 Stoichiometry Unit 9 Solutions	Unit 10 Thermochemistry Unit 11 Reactivity Unit 12 Gases
Resources	Unit 1 **Chapter 1** Section 1 **Chapter 2** Sections 1,2 **Chapter 10** Sections 1-3 Unit 2 **Chapter 3** ALL Unit 3 **Chapter 4** Sections 1-3 **Chapter 6** Sections 1-3	Unit 4 *(started in Term 1)* **Chapter 8** Section 3 **Chapter 6** Section 3 **Chapter 7** section 1 **Chapter 24** ALL Unit 5 **Chapter 2** Section 1 **Chapter 4** Sections 1,2 Unit 6 **Chapter 7** Sections 1-3	Unit 7 **Chapter 9** ALL Unit 8 **Chapter 10** ALL **Chapter 11** ALL Unit 9 **Chapter 14** Sections 1-3	Unit 10 **Chapter 15** ALL Unit 11 **Chapter 2** Section 3 **Chapter 10** ALL **Chapter 11** Section 1 **Chapter 12** section 1 Unit 12 **Chapter 12** Section 1 **Chapter 13** ALL
Key Concepts	Unit 1 • Students will practice identification and use of basic labware, safety procedures and proper disposal of resources - SDS. • Students should be able to perform basic metric conversions using dimensional analysis • Students should deepen their understanding of scientific notation and apply correct use of significant figures • Students should be able to do several different mole conversions such as: grams <--> mol, mol <--> #, atoms ←→ mol.	Unit 4 • Students will describe the mathematical relationship between energy, frequency and wavelength of light using EMS. • Students will be able to express the arrangement of electrons in atoms of representative elements using electron configurations. • Students will be able to balance nuclear equations Unit 5 • Students will identify the interaction of non-metals as covalent.	Unit 7 • Students learn to identify five basic types of reactions (synthesis, decomposition, single replacement, double replacement, and combustion). • Students apply the laws of definite proportions and conservation of mass to properly write and balance chemical equations, indicating the phases of all reactants and products. Unit 8 • Students will determine the molar ratio of reactants and products	Unit 10 • phase change diagram • Calculate specific heat capacity • use calorimetry to investigate the amount of heat absorbed or released during a phase change and in chemical reactions using the law of conservation of energy • concept of enthalpy and use heats of formation to solve for enthalpy of reaction (products - reactants) • stoichiometric calculations of enthalpy changes • classify reactions as endothermic or exothermic based on enthalpy • Thermal equilibrium

Rockwall ISD Pre-AP Chemistry Year-at-a-Glance

	Unit 2 • This unit serves as a bridge linking content from middle school to a high school chemistry course. • Students will evaluate published scientific research papers or articles to communicate valid conclusions through critical thinking. Unit 3 • Students will describe the experimental design and conclusions used in the development of modern atomic theory, including Dalton's postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom. • This unit contains fundamental information regarding the use of the Periodic Table necessary for the remainder of the course.	• Students will describe the properties of covalent compounds. • Students will relate electron repulsion to VSEPR structures (tetrahedral, linear, trigonal planar) • Students will apply naming rules for covalent compounds • Students will draw Lewis dot structures • Students will differentiate between polar and nonpolar bonds using electronegativity differences • Students will calculate empirical and molecular formulas Unit 6 • Students will be able to perform calculations to determine percent composition and to differentiate between empirical and molecular formulas • Students can differentiate between cations and anions • Students will learn how to represent compounds with formulas and to name compounds given their formulas • Students identify formulas and names of ionic substances • Students will learn common properties and structures of ionic compounds • Students will be able to draw the movement of an electron from the cation to the anion	• Calculate stoichiometry problems (mole-mole, mole-mass, and mass-mass) • Identify the limiting reagent • Calculate percentage yield Unit 9 • Students will calculate and convert between different units of concentration including: molarity, molality, ppm, ppb • Students will understand the relationship between concentration and colligative properties including boiling point, melting point, and could include surface tension, viscosity, etc. • Students will use Ksp to solve for the exact concentration of constituent ions in a saturated solution (molar solubility). • Students will use the Beer-Lambert Law to relate concentration to absorbance of light.	Unit 11 • Students will name acids and bases • Students will perform pH calculations for strong and weak acids and bases. • Students will write oxidation and reduction half reactions Unit 12 • Students will convert between units of pressure, volume, and temperature • Students will used the combined gas law to solve for an unknown variable • Students will use the ideal gas law to solve for an unknown variable. • Students will recall the postulates of KMT and relate it the ideal gas law • Calculate total pressure from individual gases using Dalton's Law • Students will use stoichiometry and the ideal gas law to solve for an unknown variable