

Course Chemistry Units

| Unit # | Unit Title | Essential Standard | Days | RBT Tag | Clarifying Objectives | Major Concepts | Notes |
|---------------|--|---------------------------------|-------------|-------------------|---|---|--|
| 1 | Introduction to Matter & Energy | Review 2.1 | 12 | Understand | Review 2.1.1 2.1.2 2.1.3 | What is matter? What is energy? Classification of matter, homogeneous vs. heterogeneous, substances vs. mixtures, physical vs. chemical properties/changes (examples of each) , dimensional analysis, SI units Energy changes related to phase changes (KE and PE) Read heating and cooling curves Read phase diagrams | This is a review of the 8th grade and physical science curricula and supports the chemistry curriculum. Bullets 1 & 2 Bullet 2 All |
| 2 | Kinetic Molecular Theory | 2.1 | 10 | Understand | 2.1.2 2.1.4 2.1.5 | Heat calculations (q) relating to heating and cooling curves Heat calculations (q), calorimetry Gas laws | All All All |
| 3 | Atomic Structure & The Periodic Table | 1.1 | 10 | Analyze | 1.1.1 1.1.2 1.1.3 1.1.4 | Structure of atoms, isotopes and ions Location of electrons Electromagnetic radiation Radioactive decay | All All All All |
| | | 1.3 | | Understand | 1.3.1 1.3.2/1.3.3 | Components of the periodic table Properties/trends based on periodic table position | All All |
| 4 | Chemical Bonding & Compounds | 1.2 | 10 | Understand | 1.2.1 1.2.2 | Ionic, Covalent, Metallic bonds Types of bonds and chemical formulas | All All |

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| | | | | | 1.2.3 | Inter and intra particle forces | All |
| | | | | | 1.2.4 | Nomenclature | All |
| | | | | | 1.2.5 | Compare the properties of compounds | All |
| | Midterm | | 1 | | | | |
| 5 | The Mole | 2.2 | 10 | Analyze | *** 2.2.5 | Mole particle conversions, mole-mass conversions Empirical formula, molecular formula, percent composition, hydrates | Implied in 2.2.5 All |
| 6 | Reactions & Stoichiometry | 2.2 | 10 | Analyze | 2.2.1 2.2.2 2.2.3 2.2.4 | Collision theory, potential energy diagrams Indicators of chemical change Law of Conservation of matter, balancing, types of reactions, predicting products Reaction stoichiometry | All All All All |
| | | 3.1 | | Understand | 3.1.1 | Reaction rates (factors) | All |
| 7 | Solutions/Acids & Bases (Including Equilibrium) | 3.2 | 15 | Understand | 3.2.4 3.2.6 3.2.5 3.2.3 3.2.2 3.2.1 | Properties of solutions Solution process Solubility diagrams Concentration of solutions Properties of acids and bases Hydronium and hydroxide concentrations, pH and pOH, | All All All All All All |

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| | | 3.1 | | Understand | 3.1.2 | Conditions of a system in equilibrium, | All |
| | | | | | 3.1.3 | Le Chatelier's Principle | All |
| | Review and Exam | | 12 | | | | |