Science Curriculum Map Overview Chemistry

Topic	Skills	Approximate Weeks of Study
Module 1 Structure and Properties of Matter	↠ Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy levelof atoms. [Periodic Table] ↠Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scaleto infer the strength of electrical forces between particles. [Intermolecular forces] ↠ Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy releasedduring the processes of fission, fusion, and radioactive decay. [Nuclear Chemistry] ↠ Communicate scientific and technical information about why the particulate-level structure is important in thefunctioning of designedmaterials [states of matter] ↠ Analyze data to support the claim that the combined gas law describesthe relationships among volume, pressure, and temperature for a sample of an ideal gas. [Gases] ↠ Use evidence to support claims regarding the formation, properties and behaviors of solutions at bulk scales. [Solutions]	12 Weeks
Module 2 Chemical Reactions	↠ Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermostelectron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties. [Bonding] ↠ Develop a model to illustrate that the release or absorption of energy from a chemical reaction system dependsupon the changes in total bond energy. [Kinetics] ↠Apply scientific principles and evidence to explain how the rate of a physical or chemical change is affected when conditions are varied. [Collision theory] ↠ Refine the design of a chemical system by specifying a change in conditions that would produce increasedamounts of products at equilibrium. [Equilibrium] ↠ Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction. [Balancing] ↠Plan and conduct an investigation to compare properties and behaviors of acids and bases. [Acid/Base] ↠Use evidence to illustrate that some chemical reactions involve the transfer of electrons as an energy conversion occurs within a system. [Oxidation/Reduction]	26 Weeks