

Unit of Study—First Six Weeks Chemistry					
TEKS #	Knowledge and Skill TEKS	Student Expectations	Vocabulary	Tools	Instructional/Assessment Resources
<p>week 1 (1a 1b 2a 2b 2c 2d 2e 3a 3b 3c 3d 3e 4a 4b 4c 4d 8b 11a)</p> <p>week 2 (1a 1b 2a 2b 2c 2d 2e 3a 3b 3c 4a 4b 4c 5a 5b 5c 11a)</p> <p>week 3 (1a 1b 2a 2b 2c 2d 2e 3a 3b 3c 4a 4d 5a 5b 6a 6b 11a 11b)</p> <p>week 4 (1a 1b 2a 2b 2c 2d 2e 3a 3b 3c 3e 4a 5a 5b 6a 11a)</p> <p>week 5 (3e 4a 4b 4d 6c 11a)</p> <p>week 6 (1a 1b 2a 2b 2d 2e 3b 3c 3e 4a 4b 4c 4d 6a 6c 11a)</p>	<p>(1) Scientific processes. The student, for at least 40% of instructional time, conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:</p> <p>(A) demonstrate safe practices during field and laboratory investigations; and</p> <p>(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.</p> <p>(2) Scientific processes. The student uses scientific methods during field and laboratory investigations. The student is expected to:</p> <p>(A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology;</p> <p>(B) collect data and make measurements with precision;</p> <p>(C) express and manipulate chemical quantities using scientific conventions and mathematical procedures such as dimensional analysis, scientific notation, and significant figures;</p> <p>(D) organize, analyze, evaluate, make inferences, and predict trends from data; and</p> <p>(E) communicate valid conclusions.</p> <p>(3) Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:</p> <p>(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;</p> <p>(B) make responsible choices in selecting everyday products and services using scientific information;</p> <p>(C) evaluate the impact of research on scientific thought, society, and the environment;</p> <p>(D) describe the connection between chemistry and future careers; and</p> <p>(E) research and describe the history of chemistry and contributions of scientists.</p> <p>(4) Science concepts. The student knows the characteristics of matter. The student is expected to:</p> <p>(A) differentiate between physical and chemical properties of matter;</p> <p>(B) analyze examples of solids, liquids, and gases to determine their compressibility, structure, motion of particles, shape, and volume;</p> <p>(C) investigate and identify properties of mixtures and pure substances; and</p> <p>(D) describe the physical and chemical characteristics of an element using the periodic table and make inferences about its chemical behavior.</p> <p>(8) Science concepts. The student knows how atoms form bonds to acquire a stable arrangement of electrons. The student is expected to:</p>	<p>(A) <b>describe</b> physical properties of elements and identify how they are used to position an element on the periodic table; and</p> <p>(B) <b>Recognize</b> that compounds are composed of elements.</p> <p>(C) understand the difference between a compound and a mixture</p> <p>(D) Explain density and be able to calculate it.</p> <p>(E) <b>Represent</b> the natural world using models such as the Bohr atom or Lewis Dot diagram, and identify their limitations.</p> <p>(F) <b>collect, analyze, and record</b> information in a laboratory setting to explain a chemical activity using tools including beakers, flasks, Petri dishes, graduated cylinders, hot plates, test tubes, safety goggles, triple beam, digital, and analytical scales, thermometers, pH meters, Colorimeters, and calculators</p> <p>(G) <b>Collect and analyze information</b> to recognize patterns such as reactivity and displacement.</p> <p>(H) Be able to use laboratory techniques to identify an unknown substance.</p> <p>(I) <b>Describe</b> physical properties of elements and identify how they can be described as being part of a chemical family</p> <p>(J) <b>be able to draw Bohr atom diagrams as well as Lewis Dot diagrams</b></p> <p>(K) <b>Be able to determine valence numbers by using the Periodic Table</b></p> <p>(L) Write the correct formula of a compound from its name and be able to write the correct name of a compound from its formula</p> <p>(M) Be able to provide the common characteristics of elements within the following families: Alkali Metals, Alkaline Earth Metals, Transition Metals, Non-Metals, Metalloids, Halogens, and Noble Gases.</p>	<p>Atoms Protons Neutrons Nucleus Electrons Electronic Shell Mixture Solution Compound Physical Properties Chemical Properties Chemical Change Physical Change Periodic Table Metals Nonmetals Procedures Matter Density Solution Solvent Solute Homogeneous Heterogeneous Combustion Ion Halogen Alkali Metal Alkaline Earth Metal Transition Metal Non-Metal Period Family Valence Cation Anion</p>	<p>Textbook, lab book, lab handouts, lecture handouts, practice handouts, short videos from Web, demonstrations, lab exercises (lab equipment)</p>	<p>Week one and week two Chapter 1 Properties and changes in matter Labs: laboratory safety, equipment, and techniques; writing a lab experiment and common kitchen chemicals; observation of a candle; physical and chemical properties; mixtures and compounds; Mass, volume, and density Test Chapter 1</p> <p>Week three and week four Chapter 2 Atoms and their structure, Electron shell theory Questions and reading/research as assigned Labs: atomic structure; identification of cations and anions in solutions; forming a precipitate Test Chapters 1 and 2</p> <p>Week five and week six Chapter 3 Introduction to the Periodic table, Using the table to solve chemical problems Questions and reading/research as assigned Labs: reactivity of metals; identification of metals with flame tests; types of chemical reactions Test Chapters 1, 2, and 3</p>

	<p>(B) investigate and compare the physical and chemical properties of ionic and covalent compounds;</p> <p>(11) Science concepts. The student knows that balanced chemical equations are used to interpret and describe the interactions of matter. The student is expected to:</p> <p>(A) identify common elements and compounds using scientific nomenclature;</p> <p>(5) Science concepts. The student knows that energy transformations occur during physical or chemical changes in matter. The student is expected to:</p> <p>(A) identify changes in matter, determine the nature of the change, and examine the forms of energy involved;</p> <p>(B) identify and measure energy transformations and exchanges involved in chemical reactions; and</p> <p>(C) measure the effects of the gain or loss of heat energy on the properties of solids, liquids, and gases.</p> <p>(6) Science concepts. The student knows that atomic structure is determined by nuclear composition, allowable electron cloud, and subatomic particles. The student is expected to:</p> <p>(A) describe the existence and properties of subatomic particles;</p> <p>(B) analyze stable and unstable isotopes of an element to determine the relationship between the isotope's stability and its application</p> <p>(11) Science concepts. The student knows that balanced chemical equations are used to interpret and describe the interactions of matter. The student is expected to:</p> <p>(B) demonstrate the use of symbols, formulas, and equations in describing interactions of matter such as chemical and nuclear reactions; and</p>				
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