

Cycle 1	27 Days	The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.
	Aug. 23 - Oct. 1, 2021	
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
<p><b>Unit 1: Fundamental Concepts of Matter</b></p> <p>This unit focuses on fundamental concepts of matter, including physical and chemical properties and physical and chemical changes in matter. Students investigate properties of solids, liquids, and gases such as structure, shape, volume, and compressibility. They distinguish between extensive and intensive properties and apply these properties to classify matter as pure substances or mixtures.</p>	<p>5 class periods (90-min. each) or 10 class periods (45-min. each)</p> <p><i>Enrichment Opportunities</i> Aug. 2-13</p> <p><i>Teachers Report to Work</i> Aug. 16</p> <p><i>Teacher Service Days</i> Aug. 16-17, Aug. 19-20</p> <p><i>Teacher Prep Day</i> (no students) Aug. 18</p> <p><i>Labor Day</i> Sept. 6</p> <p><i>Fall Holiday</i> Sept. 16</p> <p><i>Teacher Service Day</i> (no students) Sept. 17</p>	<p><b>Science Content Standards</b></p> <p>Ⓡ <b>CHEM.4A</b> Differentiate between physical and chemical changes and properties.</p> <p>Ⓢ <b>CHEM.4B</b> Identify extensive properties such as mass and volume and intensive properties such as density and melting point</p> <p>Ⓢ <b>CHEM.4C</b> Compare solids, liquids, and gases in terms of compressibility, structure, shape, and volume.</p> <p>Ⓡ <b>CHEM.4D</b> Classify matter as pure substances or mixtures through investigation of their properties.</p> <p>Ⓟ <b>CHEM.1A</b> Demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers.</p> <p>Ⓟ <b>CHEM.1B</b> Know specific hazards of chemical substances such as flammability, corrosiveness, and radioactivity as summarized on the Safety Data Sheets (SDS).</p> <p>Ⓟ <b>CHEM.1C</b> Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.</p> <p>Ⓟ <b>CHEM.2E</b> Plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>Ⓟ <b>CHEM.2F</b> Collect data and make measurements with accuracy and precision.</p> <p>Ⓟ <b>CHEM.2H</b> Organize, analyze, evaluate, make inferences, and predict trends from data.</p> <p>Ⓟ <b>CHEM.2I</b> Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphs, journals, summaries, oral reports, and technology-based reports.</p>

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<p><b>Unit 2: The Periodic Table</b></p> <p>This unit focuses on the concept that properties of the elements are periodic functions of their atomic numbers. Students explain how an element's properties can be explained by its placement on the Periodic Table. Students also investigate and describe general trends on the Periodic Table such as atomic and ionic radii, electronegativity, and ionization energy.</p>	<p>6 class periods (90-min. each) or 12 class periods (45-min. each)</p>	<p><b>Science Content Standards</b></p> <p>Ⓢ <b>CHEM.5A</b> Explain the use of chemical and physical properties in the historical development of the Periodic Table.</p> <p>Ⓡ <b>CHEM.5B</b> Identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals using the periodic table.</p> <p>Ⓡ <b>CHEM.5C</b> Interpret periodic trends, including atomic radius, electronegativity, and ionization energy using the Periodic Table.</p> <p>Ⓡ <b>CHEM.6D</b> Express the arrangement of electrons in atoms of representative elements using electron configurations and Lewis valence electron dot structures.</p> <p>Ⓢ <b>CHEM.1A</b> Demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers.</p> <p>Ⓢ <b>CHEM.1B</b> Know specific hazards of chemical substances such as flammability, corrosiveness, and radioactivity as summarized on the Safety Data Sheets (SDS).</p> <p>Ⓢ <b>CHEM.1C</b> Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.</p> <p>Ⓢ <b>CHEM.2E</b> Plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>Ⓢ <b>CHEM.2H</b> Organize, analyze, evaluate, make inferences, and predict trends from data.</p> <p>Ⓢ <b>CHEM.2I</b> Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphs, journals, summaries, oral reports, and technology-based reports.</p> <p>Ⓢ <b>CHEM.3F</b> Describe the history of chemistry and contributions of scientists.</p>

Cycle 2	29 Days	The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.
	Oct. 5 - Nov. 12, 2021	
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
<p><b>Unit 3: Atomic Chemistry</b> In this unit, students understand the experiments and conclusions used in the historical development of modern atomic theory. Understanding how electrons are arranged in atoms will lead to the next unit on chemical bonding.</p>	<p>4 class periods (90-min. each) or 8 class periods (45-min. each)</p> <p><i>Teacher Service Day (no students) Oct. 4</i></p>	<p><b>Science Content Standards</b></p> <p>Ⓢ <b>CHEM.6A</b> 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.</p> <p>Ⓢ <b>CHEM.6B</b> Describe the mathematical relationships between energy, frequency, and wavelength of light using the electromagnetic spectrum.</p> <p>Ⓢ <b>CHEM.6C</b> Calculate average atomic mass of an element using isotopic composition.</p> <p>Ⓢ <b>CHEM.1A</b> Demonstrate safe practices during laboratory and filed investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers.</p> <p>Ⓢ <b>CHEM.1B</b> Know specific hazards of chemical substances such as flammability, corrosiveness, and radioactivity as summarized on the Safety Data Sheets (SDS).</p> <p>Ⓢ <b>CHEM.1C</b> Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.</p> <p>Ⓢ <b>CHEM.2E</b> Plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>Ⓢ <b>CHEM.3A</b> Analyze, review, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing.</p> <p>Ⓢ <b>CHEM.3F</b> Describe the history of chemistry and contributions of scientists.</p>
<p><b>Unit 4: Combining Elements: Types of Bonds</b> Elements bond to form compounds based on electron configurations. Students investigate different types of bonds including ionic, covalent, and metallic.</p>	<p>6 class periods (90-min. each) or 12 class periods (45-min. each)</p>	<p><b>Science Content Standards</b></p> <p>Ⓡ <b>CHEM.7A</b> Name ionic compounds containing main group or transition metals, covalent compounds, acids and bases, using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules.</p> <p>Ⓡ <b>CHEM.7B</b> Write the chemical formulas of ionic compounds containing representative elements, transition metals and common polyatomic ions, covalent compounds, and acids and bases.</p> <p>Ⓡ <b>CHEM.7C</b> Construct electron dot formulas to illustrate ionic and covalent bonds.</p> <p>Ⓢ <b>CHEM.7D</b> Describe metallic bonding and explain metallic properties such as thermal and electrical conductivity, malleability, and ductility.</p> <p>Ⓢ <b>CHEM.7E</b> Classify molecular structure for molecules with linear, trigonal planar and tetrahedral electron pair geometries as explained by Valence Shell Electron Pair Repulsion (VSEPR) theory.</p> <p>Ⓢ <b>CHEM.1A</b> Demonstrate safe practices during laboratory and filed investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers.</p>

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	Oct. 5 - Nov. 12, 2021	
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
		<p>Ⓟ <b>CHEM.1B</b> Know specific hazards of chemical substances such as flammability, corrosiveness, and radioactivity as summarized on the Safety Data Sheets (SDS).</p> <p>Ⓟ <b>CHEM.1C</b> Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.</p> <p>Ⓟ <b>CHEM.2E</b> Plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>Ⓟ <b>CHEM.2H</b> Organize, analyze, evaluate, make inferences, and predict trends from data.</p> <p>Ⓟ <b>CHEM.2I</b> Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphs, journals, summaries, oral reports, and technology-based reports.</p>
<p><b>Unit 5: Chemical Reactions</b></p> <p>The focus of this unit is on understanding the concept of Students perform calculations including using the mole concept to determine the number of particles in a sample.</p>	<p>2 class period (90-min. each) or 4 class periods (45-min. each)</p>	<p><b>Science Content Standards</b></p> <p>Ⓢ <b>CHEM.8A</b> Define and use the concept of a mole.</p> <p>Ⓟ <b>CHEM.1A</b> Demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers.</p> <p>Ⓟ <b>CHEM.1B</b> Know specific hazards of chemical substances such as flammability, corrosiveness, and radioactivity as summarized on the Safety Data Sheets (SDS).</p> <p>Ⓟ <b>CHEM.1C</b> Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.</p> <p>Ⓟ <b>CHEM.2E</b> Plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>Ⓟ <b>CHEM.2F</b> Collect data and make measurements with accuracy and precision.</p> <p>Ⓟ <b>CHEM.2G</b> Express and manipulate chemical quantities using scientific conventions and mathematical procedures including dimensional analysis, scientific notation, and significant figures.</p> <p>Ⓟ <b>CHEM.2H</b> Organize, analyze, evaluate, make inferences, and predict trends from data.</p> <p>Ⓟ <b>CHEM.2I</b> Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphs, journals, summaries, oral reports, and technology-based reports.</p>



Cycle 3	30 Days	The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.
	Nov. 15, 2021 - Jan. 14, 2022	
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
<p><b>Unit 6: Chemical Reactions</b></p> <p>The focus of this unit is on understanding chemical reactions through stoichiometry. Students perform calculations including using percent composition, empirical and molecular formulas, and relationships between reactants and products.</p>	<p>12 class periods (90-min. each) or 24 class periods (45-min. each)</p> <p><i>Thanksgiving Break</i> Nov. 22-26</p> <p><i>Enrichment Opportunities</i> Dec. 20-21</p> <p><i>Winter Break</i> Dec. 20-31</p> <p><i>MLK Jr. Day</i> Jan. 17</p> <p><i>Teacher Prep Day (no students)</i> Jan. 18</p>	<p><b>Science Content Standards</b></p> <p>Ⓡ <b>CHEM.8B</b> Calculate the number of atoms or molecules in a sample of material using Avogadro’s number.</p> <p>Ⓢ <b>CHEM.8C</b> Calculate percent composition of compounds</p> <p>Ⓡ <b>CHEM.8D</b> Differentiate between empirical and molecular formulas</p> <p>Ⓡ <b>CHEM.8E</b> Write balanced chemical equations using the law of conservation of mass.</p> <p>Ⓡ <b>CHEM.8F</b> Differentiate among double replacement (ion-swap) reactions, including acid-base reactions and precipitation reaction and oxidation-reduction reaction such as synthesis, decomposition, single replacement, and combustion reactions.</p> <p>Ⓢ <b>CHEM.1A</b> Demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers.</p> <p>Ⓢ <b>CHEM.1B</b> Know specific hazards of chemical substances such as flammability, corrosiveness, and radioactivity as summarized on the Safety Data Sheets (SDS).</p> <p>Ⓢ <b>CHEM.1C</b> Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.</p> <p>Ⓢ <b>CHEM.2E</b> Plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>Ⓢ <b>CHEM.2F</b> Collect data and make measurements with accuracy and precision.</p> <p>Ⓢ <b>CHEM.2G</b> Express and manipulate chemical quantities using scientific conventions and mathematical procedures including dimensional analysis, scientific notation, and significant figures.</p> <p>Ⓢ <b>CHEM.2H</b> Organize, analyze, evaluate, make inferences, and predict trends from data.</p> <p>Ⓢ <b>CHEM.2I</b> Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphs, journals, summaries, oral reports, and technology-based reports.</p>

Cycle 4	27 Days	
	Jan. 19 - Feb. 25, 2022	
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
<p><b>Unit 7: Chemical Reactions</b> The focus of this unit is on understanding chemical reactions through stoichiometry. Students perform calculations with empirical and molecular formulas, and relationships between reactants and products.</p>	<p>5 class periods (90-min. each) or 10 class periods (45-min. each)</p> <p><i>Teacher Service Day/Presidents' Day (no students) Feb. 21</i></p>	<p><b>Science Content Standards</b></p> <p>Ⓢ <b>CHEM.8G</b> Perform stoichiometric calculations including determination of mass and gas volume relationships between reactants and products and percent yield.</p> <p>Ⓡ <b>CHEM.8H</b> Describe the concept of limiting reactants in a balance chemical equation.</p> <p>Ⓢ <b>CHEM.1A</b> Demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers.</p> <p>Ⓢ <b>CHEM.1B</b> Know specific hazards of chemical substances such as flammability, corrosiveness, and radioactivity as summarized on the Safety Data Sheets (SDS).</p> <p>Ⓢ <b>CHEM.1C</b> Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.</p> <p>Ⓢ <b>CHEM.2E</b> Plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>Ⓢ <b>CHEM.2F</b> Collect data and make measurements with accuracy and precision.</p> <p>Ⓢ <b>CHEM.2G</b> Express and manipulate chemical quantities using scientific conventions and mathematical procedures including dimensional analysis, scientific notation, and significant figures.</p> <p>Ⓢ <b>CHEM.2H</b> Organize, analyze, evaluate, make inferences, and predict trends from data.</p> <p>Ⓢ <b>CHEM.2I</b> Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphs, journals, summaries, oral reports, and technology-based reports.</p>

Cycle 4	27 Days	The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.
	Jan. 19 - Feb. 25, 2022	
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
<b>Unit 8: Solutions</b> Students investigate factors that influence solubility and rates of dissolution and use general rules regarding solubility. Students differentiate between types of solutions and use molarity in calculations involving solutions.	6 class periods (90-min. each) or 12 class periods (45-min. each)	<b>Science Content Standards</b> Ⓢ <b>CHEM.10A</b> Describe the unique role of water in solutions in terms of polarity. Ⓡ <b>CHEM.10B</b> Apply the general rules regarding solubility through investigations with aqueous solutions. Ⓢ <b>CHEM.10C</b> Calculate the concentration of solutions in units of molarity. Ⓢ <b>CHEM.10D</b> Calculate the dilutions of solutions using molarity. Ⓡ <b>CHEM.10E</b> Distinguish among types of solutions such as electrolytes and nonelectrolytes, unsaturated, saturated, and supersaturated solutions and strong and weak acids and bases. Ⓡ <b>CHEM.10F</b> Investigate factors that influence solid and gas solubilities and rates of dissolution such as temperature, agitation, and surface area.  Ⓢ <b>CHEM.1A</b> Demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers. Ⓢ <b>CHEM.1B</b> Know specific hazards of chemical substances such as flammability, corrosiveness, and radioactivity as summarized on the Safety Data Sheets (SDS). Ⓢ <b>CHEM.1C</b> Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials. Ⓢ <b>CHEM.2E</b> Plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology. Ⓢ <b>CHEM.2F</b> Collect data and make measurements with accuracy and precision. Ⓢ <b>CHEM.2G</b> Express and manipulate chemical quantities using scientific conventions and mathematical procedures including dimensional analysis, scientific notation, and significant figures. Ⓢ <b>CHEM.2H</b> Organize, analyze, evaluate, make inferences, and predict trends from data. Ⓢ <b>CHEM.2I</b> Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphs, journals, summaries, oral reports, and technology-based reports.

Cycle 5	33 Days	The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.
	Feb. 28 - Apr. 22, 2022	
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
<p><b>Unit 9: Acids and Bases and Reactions</b> This unit will focus on defining acids and bases, distinguishing between strong and weak acids and bases, acid-base reactions, and calculating the pH of a solution.</p>	<p>6 class periods (90-min. each) or 12 class periods (45-min. each)</p> <p><i>Enrichment Opportunities</i> Mar. 14-16</p> <p><i>Spring Break</i> Mar. 14-18</p> <p><i>Chávez-Huerta Day</i> Mar. 28</p> <p><i>Spring Holiday</i> Apr. 15</p>	<p><b>Science Content Standards</b></p> <p>Ⓢ <b>CHEM. 10G</b> Define acids and bases and distinguish between Arrhenius and Bronsted-Lowry definitions; and predict products in acid-base reactions that form water.</p> <p>Ⓡ <b>CHEM.10H</b> Define pH and calculate the pH of a solution using the hydrogen ion concentration.</p> <p>Ⓟ <b>CHEM.1A</b> Demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers.</p> <p>Ⓟ <b>CHEM.1B</b> Know specific hazards of chemical substances such as flammability, corrosiveness, and radioactivity as summarized on the Safety Data Sheets (SDS).</p> <p>Ⓟ <b>CHEM.1C</b> Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.</p> <p>Ⓟ <b>CHEM.2E</b> Plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>Ⓟ <b>CHEM.2F</b> Collect data and make measurements with accuracy and precision.</p> <p>Ⓟ <b>CHEM.2G</b> Express and manipulate chemical quantities using scientific conventions and mathematical procedures including dimensional analysis, scientific notation, and significant figures.</p> <p>Ⓟ <b>CHEM.2H</b> Organize, analyze, evaluate, make inferences, and predict trends from data.</p> <p>Ⓟ <b>CHEM.2I</b> Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphs, journals, summaries, oral reports, and technology-based reports.</p>
<p><b>Unit 10: Behavior of Gases</b> The focus of this unit is for students to be able to understand the kinetic molecular theory and the gas laws to determine how temperature, pressure, and volume affect gases.</p>	<p>7 class periods (90-min. each) or 14 class periods (45-min. each)</p>	<p><b>Science Content Standards</b></p> <p>Ⓢ <b>CHEM.9B</b> Describe the postulates of kinetic molecular theory.</p> <p>Ⓡ <b>CHEM.9A</b> Describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas, as described by Boyle's Law, Charles' Law, Avogadro's Law, Dalton's Law of partial pressures and the ideal gas law.</p> <p>Ⓟ <b>CHEM.1A</b> Demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers.</p> <p>Ⓟ <b>CHEM.1B</b> Know specific hazards of chemical substances such as flammability, corrosiveness, and radioactivity as summarized on the Safety Data Sheets (SDS).</p> <p>Ⓟ <b>CHEM.1C</b> Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.</p> <p>Ⓟ <b>CHEM.2A</b> Know the definition of science and understand that it has limitations.</p>



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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
		<p>Ⓟ <b>CHEM.2B</b> Know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories.</p> <p>Ⓟ <b>CHEM.2C</b> Know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly reliable explanations, but may be subject to change as new areas of science and new technologies are developed.</p> <p>Ⓟ <b>CHEM.2D</b> Distinguish between scientific hypotheses and scientific theories.</p> <p>Ⓟ <b>CHEM.2E</b> Plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>Ⓟ <b>CHEM.2G</b> Express and manipulate chemical quantities using scientific conventions and mathematical procedures including dimensional analysis, scientific notation, and significant figures.</p>

Cycle 6	31 Days	The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.
	Apr. 25 - June 7, 2022	
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
<p><b>Unit 11</b> <b>Thermochemistry and Nuclear Chemistry</b> In this unit, students use thermochemical equations to calculate energy changes that occur in chemical reactions. Students also understand nuclear radiation in the form of alpha, beta, and gamma rays. It also includes characteristics of radioactive decay and the effects of fission and fusion reactions</p>	<p>6 class periods (90-min. each) or 12 class periods (45-min. each)</p> <p><i>Memorial Day May 30</i></p> <p><i>Teacher Prep Day (no students) June 8</i></p>	<p><b>Science Content Standards</b></p> <p>Ⓢ <b>CHEM.11A</b> Describe energy and its forms including kinetic, potential, chemical, and thermal energies.</p> <p>Ⓢ <b>CHEM.11B</b> Describe the law of conservation of energy and the processes of heat transfer in terms of calorimetry.</p> <p>Ⓡ <b>CHEM.11C</b> Classify reactions as exothermic or endothermic and represent energy changes that occur in chemical reactions using thermochemical equations or graphical analysis.</p> <p>Ⓢ <b>CHEM.11D</b> Perform calculations involving heat, mass, temperature change, and specific heat.</p> <p>Ⓢ <b>CHEM.12A</b> Describe the characteristics of alpha, beta, and gamma radioactive decay processes in term of balanced nuclear equations.</p> <p>Ⓢ <b>CHEM.12B</b> Compare fission and fusion reactions.</p> <p>Ⓡ <b>CHEM.1A</b> Demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers.</p> <p>Ⓡ <b>CHEM.1B</b> Know specific hazards of chemical substances such as flammability, corrosiveness, and radioactivity as summarized on the Safety Data Sheets (SDS).</p> <p>Ⓡ <b>CHEM.1C</b> Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.</p> <p>Ⓡ <b>CHEM.2E</b> Plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>Ⓡ <b>CHEM.2F</b> Collect data and make measurements with accuracy and precision.</p> <p>Ⓡ <b>CHEM.2G</b> Express and manipulate chemical quantities using scientific conventions and mathematical procedures including dimensional analysis, scientific notation, and significant figures.</p> <p>Ⓡ <b>CHEM.2H</b> Organize, analyze, evaluate, make inferences, and predict trends from data.</p> <p>Ⓡ <b>CHEM.2I</b> Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphs, journals, summaries, oral reports, and technology-based reports.</p>

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	Apr. 25 - June 7, 2022	
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
<b>Unit 12: STEM Research Project</b> After completing the curriculum, students use this opportunity to plan and implement scientific investigations through real-life applications of current science issues.	7 class periods (90-min. each) or 14 class periods (45-min. each)	<p>Ⓟ <b>CHEM.2E</b> Plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>Ⓟ <b>CHEM.2F</b> Collect data and make measurements with accuracy and precision.</p> <p>Ⓟ <b>CHEM.2G</b> Express and manipulate chemical quantities using scientific conventions and mathematical procedures including dimensional analysis, scientific notation, and significant figures.</p> <p>Ⓟ <b>CHEM.2H</b> Organize, analyze, evaluate, make inferences, and predict trends from data.</p> <p>Ⓟ <b>CHEM.2I</b> Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphs, journals, summaries, oral reports, and technology-based reports.</p> <p>Ⓟ <b>CHEM.3B</b> Communicate and apply scientific information extracted from various sources such as current events, published journal articles and marketing materials.</p> <p>Ⓟ <b>CHEM.3C</b> Draw inferences based on data related to promotional materials for products and services.</p> <p>Ⓟ <b>CHEM.3D</b> Evaluate the impact of research on scientific thought, society, and the environment.</p> <p>Ⓟ <b>CHEM.3E</b> Describe the connection between chemistry and future careers.</p>