

Cycle 1		
29 Days Aug. 22-Sept. 30, 2022		
<i>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.</i>		
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
Unit 1: Introduction to Chemistry Students explore structures of atoms, describe properties of matter, construct atomic models, and explain the arrangement of elements found on the Periodic Table.	12 class periods (90-min. each) or 24 class periods (45-min. each) <i>Teachers Report to Campuses Aug. 8</i> <i>Teacher Service Days Aug. 8-12, Aug. 16-19</i> <i>Teacher Prep Day (no students) Aug. 15</i> <i>Labor Day Sept. 5</i>	Science process standards are embedded into lessons on science content throughout the entire year. Science Content Standards: Ⓡ SCI.8.5A Describe the structure of atoms including the masses, electrical charges and locations of protons and neutrons in the nucleus and electrons in the electron cloud. Ⓡ SCI.8.5B Identify that protons determine an element's identity, and valence electrons determine its chemical properties including reactivity. Ⓡ SCI.8.5C Interpret the arrangement of the Periodic Table including groups and periods, to explain how properties are used to classify elements. Ⓡ SCI.8.5D Recognize that chemical formulas are used to identify substances and determine the number of atoms of each element in chemical formulas containing subscripts. Science Process Standards: Ⓟ SCI.8.1A Demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency-approved safety standards. Ⓟ SCI.8.2A Plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology. Ⓟ SCI.8.2B Design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology. Ⓟ SCI.8.2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers. Ⓟ SCI.8.2D Construct tables, using repeated trials and means, to organize data and identify patterns. Ⓟ SCI.8.2E Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends. Ⓟ SCI.8.3A Analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning and experimental and observational testing, so as to encourage critical thinking by the student. Ⓟ SCI.8.3B Use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature. Ⓟ SCI.8.3C Identify advantages and limitations of models such as size, scale, properties, and materials. Ⓟ SCI.8.3D Relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content. Ⓟ SCI.8.4A Use appropriate tools to collect, record, and analyze information.

HISD | Secondary Curriculum and Development

ALIGN, ADVANCE, ENGAGE.

2022-2023 Scope and Sequence

Science – Grade 8

Cycle 1		
29 Days Aug. 22-Sept. 30, 2022		
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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
		PS SCI.8.4B Use preventative safety equipment, including chemical splash goggles, aprons and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.

GLOBAL GRADUATE



PS - State Process Standard

AR - Aligned to Upcoming State Readiness Standard

R - State Readiness Standard

S - State Supporting Standard

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2022-2023

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Cycle 2	23 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. 3 - Nov. 4, 2022	
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
Unit 2: Chemical Reactions Students investigate evidence of chemical reactions and how that relates to the law of conservation of mass.	3 class periods (90-min. each) or 6 class periods (45-min. each) <i>Teacher Service Day (no students)</i> <i>Oct. 4</i> <i>Fall Holiday</i> <i>Oct. 5</i>	Science Content Standards: Ⓡ SCI.8.5E Investigate how evidence of chemical reactions indicates that new substances with different properties are formed and how that relates to the law of conservation of mass. Science Process Standards: Ⓟ SCI.8.1A Demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency-approved safety standards. Ⓟ SCI.8.2A Plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology. Ⓟ SCI.8.2B Design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology. Ⓟ SCI.8.2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers. Ⓟ SCI.8.2D Construct tables, using repeated trials and means, to organize data and identify patterns. Ⓟ SCI.8.2E Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends. Ⓟ SCI.8.3A Analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning and experimental and observational testing, so as to encourage critical thinking by the student. Ⓟ SCI.8.3B Use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature. Ⓟ SCI.8.3C Identify advantages and limitations of models such as size, scale, properties, and materials. Ⓟ SCI.8.3D Relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content. Ⓟ SCI.8.4A Use appropriate tools to collect, record, and analyze information. Ⓟ SCI.8.4B Use preventative safety equipment, including chemical splash goggles, aprons and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.

Cycle 2		
23 Days Oct. 3 - Nov. 4, 2022		
<i>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.</i>		
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
Unit 3: Force and Motion Basics Students investigate and demonstrate how forces and motion are interrelated.	6 class periods (90-min. each) or 12 class periods (45-min. each)	Science Content Standards: Ⓡ SCI.8.6A Demonstrate and calculate how unbalanced forces change the speed or direction of an object's motion. Ⓢ SCI.8.6B Differentiate between speed, velocity, and acceleration. Science Process Standards: Ⓟ SCI.8.1A Demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency-approved safety standards. Ⓟ SCI.8.2A Plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology. Ⓟ SCI.8.2B Design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology. Ⓟ SCI.8.2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers. Ⓟ SCI.8.2D Construct tables, using repeated trials and means, to organize data and identify patterns. Ⓟ SCI.8.2E Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends. Ⓟ SCI.8.3A Analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning and experimental and observational testing, so as to encourage critical thinking by the student. Ⓟ SCI.8.3B Use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature. Ⓟ SCI.8.3C Identify advantages and limitations of models such as size, scale, properties, and materials. Ⓟ SCI.8.3D Relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content. Ⓟ SCI.8.4A Use appropriate tools to collect, record, and analyze information. Ⓟ SCI.8.4B Use preventative safety equipment, including chemical splash goggles, aprons and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.

Cycle 3		
28 Days Nov. 15-Dec. 21, 2022		
<i>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.</i>		
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
Unit 4: Laws of Force and Motion Students investigate the three laws of motion in everyday life situations.	4 class periods (90-min. each) or 8 class periods (45-min. each) <i>Thanksgiving Break</i> Nov. 21-22 <i>Winter Break (students)</i> Dec. 22 - Jan. 6 <i>Winter Break (teachers)</i> Dec. 22 - Jan. 4	Science Content Standard: ® SCI.8.6C Investigate and describe applications of Newton’s three laws of motion such as in vehicle restraints, sports activities, amusement park rides, Earth’s tectonic activities, and rocket launches. Science Process Standards: ® SCI.8.1A Demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency-approved safety standards. ® SCI.8.2A Plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology. ® SCI.8.2B Design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology. ® SCI.8.2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers. ® SCI.8.2D Construct tables, using repeated trials and means, to organize data and identify patterns. ® SCI.8.2E Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends. ® SCI.8.3A Analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning and experimental and observational testing, so as to encourage critical thinking by the student. ® SCI.8.3B Use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature. ® SCI.8.3C Identify advantages and limitations of models such as size, scale, properties, and materials. ® SCI.8.3D Relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content. ® SCI.8.4A Use appropriate tools to collect, record, and analyze information. ® SCI.8.4B Use preventative safety equipment, including chemical splash goggles, aprons and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.

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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
Unit 5: Earth, Sun, Moon Students use models to describe the interactions between the sun, moon, and Earth.	8 class periods (90-min. each) or 16 class periods (45-min. each)	<p>Science Content Standards:</p> <p>Ⓡ SCI.8.7A Model and illustrate how the tilted Earth rotates on its axis, causing day and night, and revolves around the sun causing changes in seasons.</p> <p>Ⓡ SCI.8.7B Demonstrate and predict the sequence of events in the lunar cycle.</p> <p>Ⓢ SCI.8.7C Relate the positions of the moon and sun to their effect on ocean tides.</p> <p>Science Process Standards:</p> <p>Ⓟ SCI.8.1A Demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency-approved safety standards.</p> <p>Ⓟ SCI.8.2A Plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology.</p> <p>Ⓟ SCI.8.2B Design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology.</p> <p>Ⓟ SCI.8.2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers.</p> <p>Ⓟ SCI.8.2D Construct tables, using repeated trials and means, to organize data and identify patterns.</p> <p>Ⓟ SCI.8.2E Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.</p> <p>Ⓟ SCI.8.3A Analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning and experimental and observational testing, so as to encourage critical thinking by the student.</p> <p>Ⓟ SCI.8.3B Use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature.</p> <p>Ⓟ SCI.8.3C Identify advantages and limitations of models such as size, scale, properties, and materials.</p> <p>Ⓟ SCI.8.3D Relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content.</p> <p>Ⓟ SCI.8.4A Use appropriate tools to collect, record, and analyze information.</p> <p>Ⓟ SCI.8.4B Use preventative safety equipment, including chemical splash goggles, aprons and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.</p>

Cycle 4	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.
	Jan. 9 - Feb. 24, 2023	
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
Unit 6: The Universe Students describe components of the universe and use the H-R diagram model for classifying stars.	5 class periods (90-min. each) or 10 class periods (45-min. each) <i>Winter Break (students)</i> <i>Dec. 22 - Jan. 6</i> <i>Winter Break (teachers)</i> <i>Dec. 22 - Jan. 4</i> <i>MLK Jr. Day</i> <i>Jan. 16</i> <i>Teacher Prep Day (no students)</i> <i>Jan. 5</i>	Science Content Standards: Ⓡ SCI.8.8A Describe components of the universe, including stars, nebulae, and galaxies, and use models such as the Hertzsprung-Russell diagram for classification. Ⓢ SCI.8.8B Recognize that the Sun is a medium-sized star located in a spiral arm of the Milky Way galaxy and that the Sun is many thousands of times closer to Earth than any other star. Ⓢ SCI.8.8C Identify how different wavelengths of the electromagnetic spectrum such as visible light and radio waves are used to gain information about components in the universe. SCI.8.8D Research how scientific data are used as evidence to develop scientific theories to describe the origin of the universe. Science Process Standards: Ⓢ SCI.8.1A Demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency-approved safety standards. Ⓢ SCI.8.2A Plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology. Ⓢ SCI.8.2B Design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology. Ⓢ SCI.8.2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers. Ⓢ SCI.8.2D Construct tables, using repeated trials and means, to organize data and identify patterns. Ⓢ SCI.8.2E Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends. Ⓢ SCI.8.3A Analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning and experimental and observational testing, so as to encourage critical thinking by the student. Ⓢ SCI.8.3B Use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature. Ⓢ SCI.8.3C Identify advantages and limitations of models such as size, scale, properties, and materials. Ⓢ SCI.8.3D Relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content. Ⓢ SCI.8.4A Use appropriate tools to collect, record, and analyze information. Ⓢ SCI.8.4B Use preventative safety equipment, including chemical splash goggles, aprons and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.

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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
Unit 7: Atmospheric Movement Students research and investigate weather patterns and create models to describe the role of the ocean on the formation of weather systems.	4 class periods (90-min. each) or 8 class periods (45-min. each)	Science Content Standards: <p>Ⓢ SCI.8.10A Recognize that the Sun provides the energy that drives convection within the atmosphere and oceans, producing winds.</p> <p>Ⓢ SCI.8.10B Identify how global patterns of atmospheric movement influence local weather using maps that show high and low pressures and fronts.</p> <p>Ⓢ SCI.8.10C Identify the role of the ocean in the formation of weather systems, such as hurricanes.</p> Science Process Standards: <p>Ⓢ SCI.8.1A Demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency-approved safety standards.</p> <p>Ⓢ SCI.8.2A Plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology.</p> <p>Ⓢ SCI.8.2B Design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology.</p> <p>Ⓢ SCI.8.2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers.</p> <p>Ⓢ SCI.8.2D Construct tables, using repeated trials and means, to organize data and identify patterns.</p> <p>Ⓢ SCI.8.2E Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.</p> <p>Ⓢ SCI.8.3A Analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning and experimental and observational testing, so as to encourage critical thinking by the student.</p> <p>Ⓢ SCI.8.3B Use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature.</p> <p>Ⓢ SCI.8.3C Identify advantages and limitations of models such as size, scale, properties, and materials.</p> <p>Ⓢ SCI.8.3D Relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content.</p> <p>Ⓢ SCI.8.4A Use appropriate tools to collect, record, and analyze information.</p> <p>Ⓢ SCI.8.4B Use preventative safety equipment, including chemical splash goggles, aprons and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.</p>

Cycle 4		
33 Days Jan. 9 - Feb. 24, 2023		
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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
Unit 8: Topographic Maps, Plate Tectonics, Satellite Images Students relate plate tectonics to crustal features and interpret and explain changes in Earth's features using topographic maps and satellite views.	5 class periods (90-min. each) or 10 class periods (45-min. each)	Science Content Standards: <p>Ⓢ SCI.8.9A Describe the historical development of evidence that supports plate tectonic theory.</p> <p>Ⓢ SCI.8.9B Relate plate tectonics to the formation of crustal features.</p> <p>Ⓢ SCI.8.9C Interpret topographic maps and satellite views to identify land and erosional features and predict how these features may be reshaped by weathering.</p> Science Process Standards: <p>Ⓢ SCI.8.1A Demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency-approved safety standards.</p> <p>Ⓢ SCI.8.2A Plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology.</p> <p>Ⓢ SCI.8.2B Design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology.</p> <p>Ⓢ SCI.8.2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers.</p> <p>Ⓢ SCI.8.2D Construct tables, using repeated trials and means, to organize data and identify patterns.</p> <p>Ⓢ SCI.8.2E Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.</p> <p>Ⓢ SCI.8.3A Analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning and experimental and observational testing, so as to encourage critical thinking by the student.</p> <p>Ⓢ SCI.8.3B Use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature.</p> <p>Ⓢ SCI.8.3C Identify advantages and limitations of models such as size, scale, properties, and materials.</p> <p>Ⓢ SCI.8.3D Relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content.</p> <p>Ⓢ SCI.8.4A Use appropriate tools to collect, record, and analyze information.</p> <p>Ⓢ SCI.8.4B Use preventative safety equipment, including chemical splash goggles, aprons and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.</p>

Cycle 5	28 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. 27 - Apr. 14, 2023	
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
Unit 9: Ecosystems Students investigate abiotic and biotic interactions within ecosystems and how human activities contribute to modifying Earth's ecosystems.	5 class periods (90-min. each) or 10 class periods (45-min. each) <i>Spring Break</i> <i>Mar. 13-17</i> <i>Chávez-Huerta Day</i> <i>Mar. 31</i> <i>Spring Holiday</i> <i>Apr. 7</i>	Science Content Standards: Ⓡ SCI.8.11A Investigate how organisms and populations in an ecosystem depend on and may compete for biotic and abiotic factors such as quantity of light, water, range of temperatures, or soil composition. Ⓡ SCI.8.11B Explore how short- and long-term environmental changes affect organisms and traits in subsequent populations. Ⓢ SCI.8.11C Recognize human dependence on ocean systems and explain how human activities such as runoff, artificial reefs, or use of resources have modified these systems. Science Process Standards: Ⓢ SCI.8.1A Demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency-approved safety standards. Ⓢ SCI.8.2A Plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology. Ⓢ SCI.8.2B Design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology. Ⓢ SCI.8.2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers. Ⓢ SCI.8.2D Construct tables, using repeated trials and means, to organize data and identify patterns. Ⓢ SCI.8.2E Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends. Ⓢ SCI.8.3A Analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning and experimental and observational testing, so as to encourage critical thinking by the student. Ⓢ SCI.8.3B Use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature. Ⓢ SCI.8.3C Identify advantages and limitations of models such as size, scale, properties, and materials. Ⓢ SCI.8.3D Relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content. Ⓢ SCI.8.4A Use appropriate tools to collect, record, and analyze information. Ⓢ SCI.8.4B Use preventative safety equipment, including chemical splash goggles, aprons and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.

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28 Days Feb. 27 - Apr. 14, 2023		
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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
Unit 10: Grade 8 Science STAAR Review Students review key concepts (with process skills embedded) from all reporting categories, using games, card sorts, graphic organizers, lab station activities and other various manipulatives to help prepare for the Grade 8 Science STAAR.	7 class periods (90-min. each) or 14 class periods (45-min. each)	Science Content Standards: <p>Ⓡ SCI.8.11A Investigate how organisms and populations in an ecosystem depend on and may compete for biotic and abiotic factors such as quantity of light, water, range of temperatures, or soil composition.</p> <p>Ⓡ SCI.8.11B Explore how short- and long-term environmental changes affect organisms and traits in subsequent populations.</p> <p>Ⓢ SCI.8.11C Recognize human dependence on ocean systems and explain how human activities such as runoff, artificial reefs, or use of resources have modified these systems.</p> <p>Ⓡ SCI.8.5A Describe the structure of atoms including the masses, electrical charges and locations of protons and neutrons in the nucleus and electrons in the electron cloud.</p> <p>Ⓡ SCI.8.5B Identify that protons determine an element's identity, and valence electrons determine its chemical properties including reactivity.</p> <p>Ⓡ SCI.8.5C Interpret the arrangement of the Periodic Table including groups and periods, to explain how properties are used to classify elements.</p> <p>Ⓡ SCI.8.5D Recognize that chemical formulas are used to identify substances and determine the number of atoms of each element in chemical formulas containing subscripts.</p> <p>Ⓡ SCI.8.5E Investigate how evidence of chemical reactions indicates that new substances with different properties are formed and how that relates to the law of conservation of mass.</p> <p>Ⓡ SCI.8.6A Demonstrate and calculate how unbalanced forces change the speed or direction of an object's motion.</p> <p>Ⓢ SCI.8.6B Differentiate between speed, velocity, and acceleration.</p> <p>Ⓡ SCI.8.6C Investigate and describe applications of Newton's three laws of motion, such as in vehicle restraints, sports activities, amusement park rides, Earth's tectonic activities, and rocket launches.</p> <p>Ⓡ SCI.8.7A Model and illustrate how the tilted Earth rotates on its axis, causing day and night, and revolves around the sun causing changes in seasons.</p> <p>Ⓡ SCI.8.7B Demonstrate and predict the sequence of events in the lunar cycle.</p> <p>Ⓢ SCI.8.7C Relate the position of the Moon and Sun to their effect on ocean tides.</p> <p>Ⓡ SCI.8.8A Describe components of the universe, including stars, nebulae, and galaxies, and use models such as the Hertzsprung-Russell diagram for classification.</p> <p>Ⓢ SCI.8.8B Recognize that the Sun is a medium-sized star located in a spiral arm of the Milky Way galaxy and that the Sun is many thousands of times closer to Earth than any other star.</p>

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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
		<p>Ⓒ SCI.8.8C Identify how different wavelengths of the electromagnetic spectrum such as visible light and radio waves are used to gain information about components in the universe.</p> <p>Ⓒ SCI.8.10A Recognize that the Sun provides the energy that drives convection within the atmosphere and oceans, producing winds and ocean currents.</p> <p>Ⓒ SCI.8.10B Identify how global patterns of atmospheric movement influence local weather using maps that show high and low pressures and fronts.</p> <p>Ⓒ SCI.8.10C Identify the role of the ocean in the formation of weather systems, such as hurricanes.</p> <p>Ⓒ SCI.8.9A Describe the historical development of evidence that supports plate tectonic theory.</p> <p>Ⓒ SCI.8.9B Relate plate tectonics to the formation of crustal features.</p> <p>Ⓒ SCI.8.9C Interpret topographic maps and satellite views to identify land and erosional features and predict how these features may be reshaped by weathering.</p>

Cycle 6		
31 Days Apr. 17 - May 31, 2023		
<i>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.</i>		
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
Unit 11: STEM Cases Students engage in solving real world problems by applying the methods of scientific inquiry.	13 class periods (90-min. each) or 26 class periods (45-min. each) <i>Memorial Day</i> <i>May 29</i> <i>Teacher Prep Day</i> <i>(no students)</i> <i>June 1</i>	Science Process Standards: Ⓟ SCI.8.1A Demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency-approved safety standards. Ⓟ SCI.8.2A Plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology. Ⓟ SCI.8.2B Design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology. Ⓟ SCI.8.2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers. Ⓟ SCI.8.2D Construct tables, using repeated trials and means, to organize data and identify patterns. Ⓟ SCI.8.2E Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends. Ⓟ SCI.8.3A Analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning and experimental and observational testing, so as to encourage critical thinking by the student. Ⓟ SCI.8.3B Use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature. Ⓟ SCI.8.3C Identify advantages and limitations of models such as size, scale, properties, and materials. Ⓟ SCI.8.3D Relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content. Ⓟ SCI.8.4A Use appropriate tools to collect, record, and analyze information. Ⓟ SCI.8.4B Use preventative safety equipment, including chemical splash goggles, aprons and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.