



1<sup>st</sup> Quarter

Resources: Glencoe Literature,

Week	Unit/Lesson	Reporting Categories	Learning Objectives
1st:	<p><b>Unit 1: Scientific Investigation and Reasoning (Safety, Observations, Inferences, Scientific Method)</b></p>	<p>The student will: Practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials. Design and implement comparative and experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology Collect and record data using SI units and qualitative means using labeled drawings, writing and graphic organizers</p>	<p>SCI.8.1A demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards; 8.1(B) practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials. SCI.8.2A plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology; 8.2(B) design and implement comparative and 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 and graphs, 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.</p>
2nd:	<p><b>Unit 1: Scientific Investigation and Reasoning (Safety, Observations, Inferences, Scientific Method)</b></p>	<p>Construct and record data using the SI units, using repeated trials and means Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends. Use of critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of the scientists. Use of appropriate tools to collect, record and analyze data and information Use preventive safety equipment.</p>	<p>SCI.8.3A in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, 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, including lab journals/notebooks, beakers, meter sticks, graduated cylinders, anemometers, psychrometers, hot plates, test tubes, spring scales, balances, microscopes, thermometers, calculators, computers, spectroscopes, timing devices, and other equipment as needed to teach the curriculum; (B) use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency</p>



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			safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.
3rd:	<b>Unit 2: Chemistry (matter is composed of atoms and has chemical and physical properties)</b>	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	The student is expected to know: 1. Matter is composed of atoms and has chemical and physical properties Describe the structure of atoms, including the masses, electrical charges, and locations of protons and electrons and neutrons in the electron cloud
4th:		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;	1. Identify the arrangement of the periodic table including groups and periods, to explain how properties are used to classify elements 2. Interpret the arrangement of the Periodic Table including groups and periods, to explain how properties are used to classify elements
5th:	<b>Unit 2: Chemical reactions</b>	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 SCI.8.5E investigate how evidence of chemical reactions indicate that new substances with different properties are formed; SCI.8.5F recognize whether a chemical equation containing coefficients is balanced or not and how that relates to the law of conservation of mass.	1. Recognize that chemical formulas are used to identify & determine the number of atoms of each element in chemical formulas containing subscripts 2. Investigate how evidence of chemical reactions indicate that new substances with different properties are formed. 3. Recognize whether a chemical equation is balanced & how it relates to law of conservation of mass. 4. Investigate how evidence of chemical reactions indicate that new substances with different properties are formed. 5. Recognize that chemical formulas are used to identify substances and determine the number of atoms of each element in chemical formulas containing subscripts. 6. Recognize whether a chemical equation containing coefficients is balanced or not and how that relates to the law of conservation of mass.
6th:	<b>Supporting Standards</b>	6.5C differentiate between elements and compounds on the most basic level; 6.6 A compare metals, nonmetals, and metalloids using physical properties such as luster, conductivity, or malleability; 6.6 B calculate density to identify an unknown substance;	Differentiate between elements and compounds on the most basic level 1. Compare metals, nonmetals, and metalloids using physical 2. properties such as luster, conductivity, or malleability 3. Calculate density to identify an unknown substance



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7th:	Unit 3 Forces & Motion	SCI.8.6A demonstrate and calculate how unbalanced forces change the speed or direction of an object's motion	<ol style="list-style-type: none"> <li>1. Demonstrate and calculate how unbalanced forces change the speed or direction of an object's motion differentiate between speed, velocity and acceleration energy transfer from electrical to heat energy or heat to electrical energy</li> <li>2. Identify advantages and limitations of models such as size, scale, properties, and materials.</li> <li>3. Demonstrate and calculate how unbalanced forces change the speed or direction of an object's motion.</li> </ol>
8th:	Unit 3 Forces & Motion	SCI.8.6B differentiate between speed, velocity, and acceleration;	<ol style="list-style-type: none"> <li>1. Differentiate between speed, velocity and acceleration. Investigate and describe applications of Newton's law of inertia, law of force and acceleration and law of inertia</li> </ol>
9th:	Unit 3 Forces & Motion	SCI.8.6C investigate and describe applications of Newton's law of inertia, law of force and acceleration, and law of action-reaction such as in vehicle restraints, sports activities, amusement park rides, Earth's tectonic activities, and rocket launches.	<ol style="list-style-type: none"> <li>1. Students will investigate Newton's Laws of Motion in everyday life situations. Investigate and describe applications of Newton's law of inertia, law of force and acceleration and law of action reaction, such as in vehicle restraints, sports activities, amusement park rides, Earth's tectonic activities, and rocket launches.</li> </ol>

2nd Quarter

Resources:			
Week	Unit/Lesson	Learning Objectives	Reporting Categories
1st:	<i>Supporting standards</i>	Contrast situations where work is done with different amounts of force to situations where no work is done such as moving a box with a ramp and without a ramp, or standing still	7.7 A contrast situations where work is done with different amounts of force to situations where no work is done such as moving a box with a ramp and without a ramp, or standing still;
2nd:	<i>Supporting standards</i>	Compare and contrast potential and kinetic energy Calculate average speed using distance and time measurements Measure and graph changes in motion Demonstrate energy transformations such as energy in a flashlight battery changes from chemical energy to electrical energy to light energy	6.8A compare and contrast potential and kinetic energy;  6.8C calculate average speed using distance and time measurements;  6.8D measure and graph changes in motion;



**2nd Quarter**

**Resources:**

Week	Unit/Lesson	Learning Objectives	Reporting Categories
			6.9C demonstrate energy transformations such as energy in a flashlight battery changes from chemical energy to electrical energy to light energy.
<b>3rd:</b>	<i>Supporting standards</i>	Model the effects of human activity on groundwater and surface water in a watershed Understand that gravity is the force that governs the motion of our solar system	7.8 C model the effects of human activity on groundwater and surface water in a watershed. 6.11 B understand that gravity is the force that governs the motion of our solar system;
<b>4th:</b>	<b>Earth, Sun, Moon</b>	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	Students will use models to describe the interactions between the sun, moon, and Earth
<b>5th:</b>	<b>Earth, Sun, Moon</b>	<ol style="list-style-type: none"> <li>1. Model and illustrate how the tilted Earth rotates on its axis, causing day and night, and revolves around the sun causing changes in seasons</li> <li>2. Demonstrate and predict the sequence of events in the lunar cycle.</li> </ol>	8.7B demonstrate and predict the sequence of events in the lunar cycle
<b>6th:</b>	<b>Science Fair</b>	SCIENCE FAIR PREPARATION/SCIENCE FAIR WEEK	SCI.8.3A in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, 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;
<b>7th:</b>	<b>Earth, Sun, Moon</b>	1. Relate the position of the Moon and Sun to their effect on ocean tides.	8.7C relate the position of the Moon and Sun to their effect on ocean tides.
<b>8th:</b>	<b>Unit 6: The Universe</b>	<ol style="list-style-type: none"> <li>1. Students will identify and describe components of the universe and explore wavelengths of the electromagnetic spectrum.</li> <li>2. Describe components of the universe including stars, nebulae and galaxies, and use models such as the Hertzsprung-Russell diagram for classification.</li> <li>3. Recognize that the Sun is a medium sized star near the edge of a disc shaped galaxy of stars and that the Sun is many thousands of times closer to Earth than any other star.</li> </ol>	8.8A describe components of the universe, including stars, nebulae, and galaxies, and use models such as the Hertzsprung-Russell diagram for classification; 8.8B recognize that the Sun is a medium-sized star near the edge of a disc-shaped galaxy of stars and that the Sun is many thousands of times closer to Earth than any other star;
<b>9th:</b>	<b>Benchmark</b>	<b>Midterm Review</b>	<b>Midterm Review</b>



**3rd Quarter**

Resources:

Week	Unit/Lesson	Learning Objectives	Reporting Categories
<b>1st:</b>	<b>Unit 6: The Universe</b>	<ol style="list-style-type: none"> <li>Students will identify and describe components of the universe and explore wavelengths of the electromagnetic spectrum.</li> <li>Explore how different wavelengths of the electromagnetic spectrum such as light and radio waves are used to gain information about distances and properties of components in the universe.</li> <li>Model and describe how light years are used to measure distances and sizes in the universe.</li> </ol> <p>Research how scientific data are used as evidence to develop scientific theories to describe the origin of the universe</p>	SCI.8.8C explore how different wavelengths of the electromagnetic spectrum such as light and radio waves are used to gain information about distances and properties of components in the universe; SCI.8.8D model and describe how light years are used to measure distances and sizes in the universe; SCI.8.8E research how scientific data are used as evidence to develop scientific theories to describe the origin of the universe.
<b>2nd:</b>	<b>Unit 6: The Universe</b>	<ol style="list-style-type: none"> <li>Students will identify and describe components of the universe and explore wavelengths of the electromagnetic spectrum.</li> <li>Model and describe how light years are used to measure distances and sizes in the universe.</li> </ol> <p>Research how scientific data are used as evidence to develop scientific theories to describe the origin of the universe.</p>	SCI.8.8D model and describe how light years are used to measure distances and sizes in the universe; SCI.8.8E research how scientific data are used as evidence to develop scientific theories to describe the origin of the universe.
<b>3rd:</b>	<b>Unit 7: Atmospheric Movement</b>	<ol style="list-style-type: none"> <li>Students will research and investigate weather patterns and create models to describe the role of the ocean on the formation of weather system</li> </ol> <p>Recognize that the Sun provides the energy that drives convection within the atmosphere and oceans, producing winds and ocean currents.</p>	8.10A recognize that the Sun provides the energy that drives convection within the atmosphere and oceans, producing winds and ocean currents;
<b>4th:</b>	<b>Atmospheric Movement</b>	<ol style="list-style-type: none"> <li>Students will research and investigate weather patterns and create models to describe the role of the ocean on the formation of weather system.</li> </ol> <p>Identify how global patterns of atmospheric movement influence local weather using maps that show high and low pressures and fronts.</p>	8.10B identify how global patterns of atmospheric movement influence local weather using weather maps that show high and low pressures and fronts
<b>5th:</b>		Identify the role of the ocean in the formation of weather systems, such as hurricanes.	8.10C identify the role of the oceans in the formation of weather systems such as hurricanes.



**3rd Quarter**

Resources:

Week	Unit/Lesson	Learning Objectives	Reporting Categories
6th:	<b>Unit 8: Topographic Maps, Plate Tectonic, Satellite Images</b>	Students will examine and explain changes in Earth's features using topographic maps and satellite images. Describe the historical development of evidence that supports plate tectonic theory. Relate plate tectonics to the formation of crustal features.	8.9A describe the historical development of evidence that supports plate tectonic theory; 8.9B relate plate tectonics to the formation of crustal features;
7th:	<b>Topographic Maps, Plate Tectonic, Satellite Image</b>	Students will examine and explain changes in Earth's features using topographic maps and satellite images. Interpret topographic maps and satellite views to identify land and erosional features and predict how these features may be reshaped by weathering.	8.9C interpret topographic maps and satellite views to identify land and erosional features and predict how these features may be reshaped by weathering.
8th:	<b>Unit 9: Ecosystems</b>	Students will investigate abiotic and biotic interactions within ecosystems Describe producer/consumer, predator/prey, and parasite/host relationships as they occur in food webs in marine, freshwater and terrestrial ecosystems.	8.11A describe producer/consumer, predator/prey, and parasite/host relationships as they occur in food webs within marine, freshwater, and terrestrial ecosystems;
9th:	<b>Unit 9: Ecosystems</b>	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.	8.11B 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;

**4th Quarter**

Resources:

Week	Unit/Lesson	Learning Objectives	Reporting Categories
1st:	<b>Unit 10: Human Impact on Ecosystems</b>	Students will research and investigate how human activities contribute to modifying Earth's ecosystems 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	8.11B 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;
2nd:	<b>Human Impact on Ecosystems</b>	Students will research and investigate how human activities contribute to modifying Earth's ecosystems. Recognize human dependence on ocean systems and explain how human activities such as runoff, artificial reefs, or use of resources have modified these systems	8.11D recognize human dependence on ocean systems and explain how human activities such as runoff, artificial reefs, or use of resources have modified these systems.



4th Quarter

Resources:

Week	Unit/Lesson	Learning Objectives	Reporting Categories
3rd:	<b>Human Impact on Ecosystem</b>	Explore how short-and long-term environmental changes affect organisms and traits in subsequent populations	8.11 C explore how short- and long-term environmental changes affect organisms and traits in subsequent populations;
4th:	<b>Supporting standards</b> STAAR Review	<ol style="list-style-type: none"> <li>1. Diagram the flow of energy through living systems, including food chains, food webs, and energy pyramids</li> <li>2. identify that organic compounds contain carbon and other elements such as hydrogen, oxygen, phosphorus, nitrogen, or sulfur</li> <li>3. Distinguish between physical and chemical changes in matter in the digestive system</li> </ol>	7.5.C diagram the flow of energy through living systems, including food chains, food webs, and energy pyramids. 7.6.A identify that organic compounds contain carbon and other elements such as hydrogen, oxygen, phosphorus, nitrogen, or sulfur; 7.6.B distinguish between physical and chemical changes in matter in the digestive system;
5th:	<b>Supporting standards</b> STAAR Review	<ol style="list-style-type: none"> <li>1. Model the effects of human activity on groundwater and surface water in a watershed</li> </ol> Understand that gravity is the force that governs the motion of our solar system	7.8 C model the effects of human activity on groundwater and surface water in a watershed. 6.11 B understand that gravity is the force that governs the motion of our solar system;
6th:	<b>Supporting standards</b> STAAR Review	<ol style="list-style-type: none"> <li>1. Describe how biodiversity contributes to the sustainability of an ecosystem</li> <li>2. Observe, record, and describe the role of ecological succession such as in a microhabitat of a garden with weeds</li> <li>3. Examine organisms or their structures such as insects or leaves and use dichotomous keys for identification</li> </ol>	7.10B describe how biodiversity contributes to the sustainability of an ecosystem; 7.10C observe, record, and describe the role of ecological succession such as in a microhabitat of a garden with weeds. 7.11A examine organisms or their structures such as insects or leaves and use dichotomous keys for identification;
7th:	<b>Supporting standards</b> STAAR Review	<ol style="list-style-type: none"> <li>1. Identify some changes in genetic traits that have occurred over several generations through natural selection and selective breeding such as the Galapagos Medium Ground Finch (<i>Geospiza fortis</i>) or domestic animals</li> <li>2. Identify the main functions of the systems of the human organism, including the circulatory, respiratory, skeletal, muscular, digestive, excretory, reproductive, integumentary, nervous, and endocrine systems</li> <li>3. Differentiate between structure and function in plant and animal cell organelles, including cell membrane, cell wall, nucleus, cytoplasm, mitochondrion, chloroplast, and vacuole</li> </ol>	7.11 C identify some changes in genetic traits that have occurred over several generations through natural selection and selective breeding such as the Galapagos Medium Ground Finch ( <i>Geospiza fortis</i> ) or domestic animals. 7.12 B identify the main functions of the systems of the human organism, including the circulatory, respiratory, skeletal, muscular, digestive, excretory, reproductive, integumentary, nervous, and endocrine systems; 7.12D differentiate between structure and function in plant and animal cell organelles, including cell membrane, cell wall, nucleus, cytoplasm, mitochondrion, chloroplast, and vacuole;



4th Quarter

Resources:

Week	Unit/Lesson	Learning Objectives	Reporting Categories
<b>8th:</b>	<p><b>Supporting standards</b></p> <p>STAAR Review</p>	<p>Recognize that according to cell theory all organisms are composed of cells and cells carry on similar functions such as extracting energy from food to sustain life</p> <p>Compare the results of uniform or diverse offspring from sexual reproduction or asexual reproduction</p> <p>Recognize that inherited traits of individuals are governed in the genetic material found in the genes within chromosomes in the nucleus</p>	<p>7.12 F recognize that according to cell theory all organisms are composed of cells and cells carry on similar functions such as extracting energy from food to sustain life.</p> <p>7.14 B compare the results of uniform or diverse offspring from sexual reproduction or asexual reproduction;</p> <p>7.14 C recognize that inherited traits of individuals are governed in the genetic material found in the genes within chromosomes in the nucleus.</p>
<b>9th:</b>	<p>STAAR Testing</p>	<p>Use of critical thinking, scientific reasoning, and problem solving to make informed decisions about scientific research done by scientists.</p>	<p>SCI.8.3A in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;</p>