

Science/4th Grade

Curriculum Guide

Tennessee's K-12 science standards are intended to guide the development and delivery of educational experience that prepare all students for the challenges of the 21st Century. You may access these documents using the **Best for All Central** website:

<https://bestforall.tnedu.gov/lessons-and-learning-item?content-id=9109>

First Quarter- Physical Science: Energy (44 Days) Aug. 11 – October 9

Standard(s)	Learning Objective(s)	CCC/SEP	McGraw Hill Alignment	Assessments	Pacing
4.PS3.1 4.PS3.2 4.ETS2.1 4.PS3.3	Students will construct an explanation to describe the cause-and-effect relationship between forces and motion.	Crosscutting Concepts: Energy and Matter <i>Energy can be transferred in various ways and between objects.</i> Science and Engineering Practices: <i>Students engage in argument from evidence to identify strengths and weaknesses in a line of reasoning, to identify best explanations, to resolve problems, and to identify best solutions.</i>	Unit 1: Forces and Energy Module: Energy in Motion Lesson 1: Forces and Motion -Day 1: pgs.6-7 Encounter the Phenomenon: Forces and Motion (interactive presentation online) -Day 2-3: Pgs. 10-13 reading. (interactive presentations: position and motion, forces change motion, balanced and unbalanced forces and lesson vocabulary online) -Day 4: Close Reading pgs. 14&15. (interactive presentation online) -Day 5: Elaborate: pgs. 18&19. (STEM interactive presentation: robotics engineer and read about: soft landing)	<u>Module Review and Test after Lessons 1-3.</u> <i><u>Inquiry Activities may be at the end of Module or embedded.</u></i>	5 Days

4.PS3.1 4.PS3.2 4.ETS2.1	Students will use evidence to explain the cause-and-effect relationship between the speed of an object and the energy of an object. 4.PS3.1 <i>use evidence to explain the cause-and-effect relationship between the speed of an object and the energy of an object.</i>	Crosscutting Concepts: Energy and Matter <i>Energy can be transferred in various ways and between objects.</i> Science and Engineering Practices: <i>Use evidence (e.g., measurements, observations, patterns) to construct an explanation.</i>	Unit 1: Forces and Energy Module: Energy in Motion Lesson 2: Speed and Energy -Day 1: pgs. 24 & 25 Encounter the Phenomenon: What determines the speed of a race car? (Go Online- <i>Race Cars</i>) -Day 2: Explore pgs. 26-29 Inquiry Activity- The Moving Ball -Days 3-5: Explain pgs. 30-33 (Go Online- video <i>Speed and Energy</i>, lesson vocabulary, notebook foldables pg. EM14) -Day 6: Elaborate pg. 34 STEM connection	<u>Module Review and Test after Lessons 1-3.</u> <i><u>Inquiry Activities may be at the end of Module or embedded.</u></i>	6 Days
4.PS3.1 4.PS3.2 4.ETS2.1	Students will ask questions and construct an explanation to describe the transfer of energy when objects collide. 4.PS3.2 Carry out an investigation to show how faster speeds during a collision can cause a bigger change in the shape of the colliding objects. 4.ETS2.1 Explain how existing technologies have been designed or improved to increase their benefits, to decrease known risks, and to meet societal demands (e.g., artificial limbs, seatbelts, cell phones)	Crosscutting Concepts: Energy and Matter <i>Energy can be transferred in various ways and between objects.</i> Science and Engineering Practices: <i>Ask questions that can be investigated and predict reasonable outcomes based on patterns such as cause-and-effect relationships.</i>	Unit 1: Forces and Energy Module: Energy in Motion Lesson 3: Energy Transfer and in Collisions -Day 1: Encounter the Phenomenon pgs. 42&43 How does the motion of cars change when they collide? (Go online- <i>Rear End Collision</i>) -Day2: Explore pgs. 44-47 Inquiry Activity- Explore Toy Car Crashes -Days 3-5: Explain pgs. 48 &49, Go online read about and lesson vocabulary, close	<u>Module Review and Test after Lessons 1-3.</u> <i><u>Inquiry Activities may be at the end of Module or embedded.</u></i>	6 Days

			reading pgs. 50 & 51, pgs. 52 and 53 with notebook foldables pg. EM15 and go online read about -Day 6- pg. 56 and go online read about and investigation. STEM connection pg. 57 with leveled reader- <i>Cars, Crashes, and Collisions</i>.		
4.PS3.1 4.PS3.2 4.ETS2.1	4.PS3.1 <i>use evidence to explain the cause-and-effect relationship between the speed of an object and the energy of an object.</i> 4.PS3.2 <i>Carry out an investigation to show how faster speeds during a collision can cause a bigger change in the shape of the colliding objects.</i> 4.ETS2.1 <i>Explain how existing technologies have been designed or improved to increase their benefits, to decrease known risks, and to meet societal demands (e.g., artificial limbs, seatbelts, cell phones)</i>		Unit 1: Forces and Energy Module: Energy in Motion -Day 1: STEM Module Project pgs. 61-67 -Day 2: finish STEM module and Go Online- Module Wrap- Up: Energy and Motion -Day 3: Module Test: Energy and Motion (Go Online)		3 Days
4.PS3.3	Students will make observations and explain how different types of energy transform. 4.PS3.3 <i>Describe how stored energy can be converted into another form for practical use in a system.</i>	Crosscutting Concepts: Energy and Matter <i>Energy can be transferred in various ways and between objects</i> Science and Engineering Practices: <i>Planning and carrying out controlled investigations to collect data that is used to test existing theories and explanations, revise and develop new theories and</i>	Unit 2: Using Energy Module: Energy Transformations Lesson 1- Energy Transformations -Day 1: pg. 71 Lesson 1 Launch and Encounter the Phenomenon pgs. 72&73. (Go Online video) -Day 2: Explore pgs. 77&78 (Go online- Pinball Energy Challenge Game, read Forms of Energy, and lesson vocabulary) and Explain pg. 79.	<u>Combined Module Review and Test after Lesson 4 of Natural Resources.</u> <i><u>Inquiry Activities may be at the end of Module or embedded.</u></i>	3 Days

		<i>explanations, or assess the effectiveness, efficiency, and durability of designs under various conditions.</i>	Day 3: Elaborate pgs. 82&83 and Lesson review pgs. 84&85. (Go online optional resources- lesson review, lesson check, and vocabulary check)		
4.PS3.3	Students investigate the transformation of energy in a system. 4.PS3.3 <i>Describe how stored energy can be converted into another form for practical use in a system.</i>	Crosscutting Concepts: Energy and Matter Science and Engineering Practices: <i>Planning and carrying out controlled investigations to collect data that is used to test existing theories and explanations, revise and develop new theories and explanations, or assess the effectiveness, efficiency, and durability of designs under various conditions.</i>	Unit 2: Using Energy Module: Energy Transformations Lesson 2- Energy and Systems -Day 1: pg. 87 launch and encounter the phenomenon pgs. 88 and 89. (Go Online- video). <i>Optional Explore pgs. 90&91 with the Inquiry Activity.</i> -Day 2: Explain pgs. 92&93. (Go Online- read about sound energy and lesson vocabulary). Elaborate pgs. 94&95. (Go Online- read about light energy) -Day3: Lesson review pgs. 96&97. (Go online optional resources- lesson check and vocabulary check)	<u>Combined Module Review and Test after Lesson 4 of Natural Resources.</u> <i><u>Inquiry Activities may be at the end of Module or embedded.</u></i>	3 Days
4.PS3.3 4.ESS3.1 4.ESS3.2	Students will obtain and combine information about the source of nonrenewable resources, and how their uses affect humans. 4.PS3.3 <i>Describe how stored energy can be converted into another form for practical use in a system.</i>	Crosscutting Concepts: Cause and Effect/ Energy and matter Science and Engineering Practices: <i>Constructing explanations and designing solutions to</i>	Unit 2: Using Energy Module: Natural Resources in the Environment Lesson 1- Energy from Nonrenewable Resources -Day1: Lesson launch pg. 109 (Go Online- science probes)	<u>Combined Module Review and Test after Lesson 4 of Natural Resources.</u>	3 days

	4.ESS3.1 <i>Obtain and combine information to describe that energy, fuels, and materials are derived from natural resources and that some resources are renewable (e.g., sunlight, wind, water, and some are not (e.g., fossil fuels and minerals).</i> 4. ESS3.2 <i>Engage in an argument, using evidence from research, that human activity (e.g., farming, mining, building) can affect the land and ocean in positive and/or negative ways.</i>	<i>explain phenomena or solve problems.</i> <i>Obtaining, evaluating, and communicating information from scientific texts in order to derive meaning, evaluate validity, and integrate information.</i>	Encounter the Phenomenon pgs. 110&111 (Go Online- Locomotive) -Day 2: Explain pgs. 114-117 (Go Online- video, lesson vocabulary, read about energy changes) and Notebook Foldables pg. EM15 -Day3: (<i>optional Inquiry Activity pgs. 118&119</i>) STEM Connection pg. 120, and page 121. Lesson 1 review pgs. 122&123 (Go Online- lesson review, science probes, vocabulary flashcards, lesson check, and vocab check)	<u><i>Inquiry Activities may be at the end of Module or embedded.</i></u>	
4.ESS3.1	Students will obtain and combine information about the source of renewable resources, and how their uses affect humans. 4.ESS3.1 <i>Obtain and combine information to describe that energy, fuels, and materials are derived from natural resources and that some resources are renewable (e.g., sunlight, wind, water, and some are not (e.g., fossil fuels and minerals).</i>	Crosscutting Concepts: Cause and Effect/ Energy and matter Science and Engineering Practices: Constructing explanations and designing solutions to explain phenomena or solve problems. <i>Obtaining, evaluating, and communicating information from scientific texts in order to derive meaning, evaluate validity, and integrate information.</i>	Unit 2: Using Energy Module: Natural Resources in the Environment Lesson 2- Energy from Renewable Resources -Day 1: Lesson launch pg. 125 (Go Online science probe). Encounter the Phenomenon pg. 127 (Go Online- Eruption) -Day 2: Explain pgs. 130130-135 (Go Online- lesson vocab), Leveled Reader- Mission: Green Earth. (Go Online- read about Hydropower and Wind Energy). -Day 3: STEM Connection pg. 136, Inquiry Activity pg.	<u>Combined Module Review and Test after Lesson 4 of Natural Resources.</u> <u><i>Inquiry Activities may be at the end of Module or embedded.</i></u>	3 days

			137. Lesson 2 Review pgs. 138-140. (Go Online- vocab flashcards, science probe, lesson check, and vocabulary check).		
4.ESS3.2	Students will obtain and combine information about the effects of nonrenewable resources on the environment. 4. ESS3.2 <i>Engage in an argument, using evidence from research, that human activity (e.g., farming, mining, building) can affect the land and ocean in positive and/or negative ways.</i>	Crosscutting Concepts: Cause and Effect/ Energy and matter Science and Engineering Practices: <i>Constructing explanations and designing solutions to explain phenomena or solve problems.</i> <i>Obtaining, evaluating, and communicating information from scientific texts in order to derive meaning, evaluate validity, and integrate information.</i>	Unit 2: Using Energy Module: Natural Resources in the Environment Lesson 3- Impact of Energy Use -Day 1: Lesson launch pg. 141 (Go Online- science probe). Encounter the Phenomenon pg. 143 (Go Online- Oil Rig). -Day 2: Explain pgs. 148&149. (Go Online- read about effects of obtaining and using energy resources and lesson vocabulary). Close Reading pgs. 150&152. -Day 3: Explain pgs. 152&153 (Go Online- read about conservation). STEM Connection pgs. 154&155 (Go Online- read about energy choices) Lesson 3 Review pgs. 156-158 (Go Online- vocab flashcards, science probe, lesson check, and vocab check)	<u>Combined Module Review and Test after Lesson 4 of Natural Resources.</u> <i><u>Inquiry Activities may be at the end of Module or embedded.</u></i>	3 days
	Students will use their observations to construct an explanation and design a device that converts energy from one form to another.	Crosscutting Concepts: Cause and Effect/ Energy and matter Science and Engineering Practices:	Unit 2: Using Energy Module: Natural Resources in the Environment Lesson 4- Design Energy Solutions -Day 1: Lesson launch pg. 159 (Go Online- science probe). Encounter the	<u>Combined Module Review and Test after Lesson 4 of</u>	3 days

		<i>Constructing explanations and designing solutions to explain phenomena or solve problems.</i>	Phenomenon pg. 161 (Go Online- <i>Wind Farm</i>). -Day 2: Explain pgs. 164-167 (Go Online- read about: solve energy problems, lesson vocabulary, read about: the design process). -Day 3: STEM Connection pg. 168. Lesson 4 review pgs. 170-172 (Go Online- lesson review, vocab flash cards, science probe, lesson check, and vocab check).	<u>Natural Resources.</u> <u><i>Inquiry Activities may be at the end of Module or embedded.</i></u>	
4.PS3.3 4.ESS3.1 4.ESS3.2	4.PS3.3 <i>Describe how stored energy can be converted into another form for practical use in a system.</i> 4.ESS3.1 <i>Obtain and combine information to describe that energy, fuels, and materials are derived from natural resources and that some resources are renewable (e.g., sunlight, wind, water, and some are not (e.g., fossil fuels and minerals)).</i> 4. ESS3.2 <i>Engage in an argument, using evidence from research, that human activity (e.g., farming, mining, building) can affect the land and ocean in positive and/or negative ways.</i>		Unit 2: Using Energy - Module: Energy Transformations - Module: Natural Resources in the Environment -Day 1: STEM Module Project (Choose 1) pgs. 99-105 “Designing a Community Warning System or pgs. 173-179 “Build a Solar Oven”. -Day 2: (Go Online- Wrap up energy transfer and natural resources in the environment) **can start this during day 1** -Day 3: Combine Module Test: Energy Transfer with Module Test: Natural Resources in the Environment	STEM Modules Module Tests for Unit 2	3 days

Second Quarter: Physical Science cont'd/ Life Science (41 Days) Oct. 20- Dec. 19

Standard(s)	Learning Objective(s)	CCC/SEP	McGraw Hill Alignment	Assessments	Timeframe
4.PS4.1	Students will explore mechanical wave properties, by modeling mechanical waves. 4.PS4.1 <i>Use a model of a simple wave to describe amplitude, wavelength, and explain how waves can add or cancel each other as they cross.</i>	Crosscutting Concepts: Structure and Function Science and Engineering Practices: <i>Developing and using models to develop explanations for phenomena, to go beyond the observable and make predictions or to test designs.</i>	Unit 3: Waves and Technology Module: Wave Module Lesson 1- Parts of a Wave -Day 1: Lesson launch pg. 183 (Go Online- science probe). Encounter the problem pg. 185 (Go Online- parts of a wave) -Day 2: Explain pgs. 189-192 -Day 3: STEM Connection pg. 193 -Day 4: Lesson 1 review pgs. 194&195 (Go Online- lesson review, lesson check, and vocab check)	Lesson 1 review on day 4	4 days
4.PS4.2	To construct an explanation for how the colors of available light sources and the bending of light waves determine what we see. 4.PS4.2 <i>Construct an explanation for how the colors of available light sources and the bending of light waves determine what we see.</i>	Crosscutting Concepts: Structure and Function Science and Engineering Practices: <i>Developing and using models to develop explanations for phenomena, to go beyond the observable and make predictions or to test designs.</i>	Unit 3: Waves and Technology Module: Wave Module Lesson 2- Light -Day 1: Lesson launch pg. 197 (Go Online- science probe). Encounter the Phenomenon pg. 199 (Go Online- video on light) -Day 2: Inquiry Activity pgs. 200&201 (Concepts of Color) -Day 3: Explain pgs. 202-204 -Day 4: STEM Careers pg. 205	Lesson 2 review on day 5	5 days

			-Day 5: Lesson 2 review pgs. 206-208 (Go Online- lesson review, lesson check, vocab check)		
4.PS4.3	To allow students to explore the ways that lenses and waves are used by humans. 4.PS4.3 <i>Investigate how lenses enhance human senses and digital devices (e.g., computers and cell phones) use waves to receive and decode information over distances.</i>	Crosscutting Concepts: Structure and Function Science and Engineering Practices: <i>Developing and using models to develop explanations for phenomena, to go beyond the observable and make predictions or to test designs.</i>	Unit 3: Waves and Technology Module: Wave Module Lesson 3- Technology -Day 1: Lesson launch pg. 209 (Go Online- science probe) Encounter the Phenomenon pg. 211 (Go Online- video on technology) Day 2: Inquiry Activity pgs. 212&213 (It's Time to Focus) -Day 3: Explain pgs. 215-218 -Day 4: STEM Connection pg. 219 -Day 5: Lesson 3 review pgs. 220-222 (Go Online- lesson review, lesson check, vocab check)	Lesson 3 review on day 5	5 days
4.PS4.1 4.PS4.2 4.PS4.3	4.PS4.1 <i>Use a model of a simple wave to describe amplitude, wavelength, and explain how waves can add or cancel each other as they cross.</i> 4.PS4.2 <i>Construct an explanation for how the colors of available light sources and the bending of light waves determine what we see.</i> 4.PS4.3 <i>Investigate how lenses enhance human senses and digital devices (e.g., computers and cell phones) use waves to receive and decode information over distances.</i>	Crosscutting Concepts: Structure and Function Science and Engineering Practices: <i>Developing and using models to develop explanations for phenomena, to go beyond the observable and make predictions or to test designs.</i>	Unit 3: Waves and Technology Module: Wave Module -Day 1: STEM Module Project pgs. 223-226 -Day 2: STEM module project cont'd and module wrap-up pg. 227. (Go Online- wrap-up) -Day 3: Module Test (Online)	Module Review and Test	3 days

4.LS2.1	Students will develop and use models to show how energy is transferred through and ecosystem. <i>4.LS2.1 Develop and use models to illustrate the flow of matter through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers.</i>	Crosscutting Concepts: Systems and system models Science and Engineering Practices: <i>Developing and using models to develop explanations for phenomena, to go beyond the observable and make predictions or to test designs.</i>	Unit 4: Organisms and Ecosystems Module: Food Webs and Ecosystems Lesson 1- Food Chains -Day 1: Lesson 1 launch pg. 5 (Go Online- science probe). Encounter the phenomenon pg. 7 (Go Online- watch video). -Day 2: Explain pgs. 10-13. Inquiry Activity pgs. 14&15 STEM Connection pgs. 16&17. -Day 3: Lesson 1 review pgs. 18-20. (Go Online- lesson review, lesson check, vocab check)	<u>Module review and test after unit 4 lesson 4.</u>	3 days
4.LS2.2	Students describe the cycling of matter and flow of energy through food webs. <i>4.LS2.2 Using information about the roles of organisms (producers, consumers, decomposers) in an ecosystem, evaluate how those roles are interconnected in a food web, and communicate how the organisms are continuously able to meet their needs in a stable food web.</i>	Crosscutting Concepts: Systems and system models Science and Engineering Practices: <i>Developing and using models to develop explanations for phenomena, to go beyond the observable and make predictions or to test designs.</i>	Unit 4: Organisms and Ecosystems Module: Food Webs and Ecosystems Lesson 2- Food Webs -Day 1: Lesson 2 launch pg. 21 (Go Online- science probe). Encounter the phenomenon pg. 23 (Go Online- watch video). Inquiry Activity pgs. 24&25 -Day 2: Explain pgs. 26-30. STEM Connection pg. 31. -Day 3: Lesson 2 review pgs. 32-34 (Go Online- lesson review, lesson check, vocab check)	<u>Module review and test after unit 4 lesson 4.</u>	3 days

4.LS2.3	Students predict how changes in the ecosystem affect the cycling of matter and flow of energy in a food web. 4.LS2.3 <i>Develop and use models to determine the effects of introducing a species to, or removing a species from, an ecosystem and how either one can damage the balance of an ecosystem.</i>	Crosscutting Concepts: Systems and system models/ energy and matter Science and Engineering Practices: <i>Developing and using models to develop explanations for phenomena, to go beyond the observable and make predictions or to test designs.</i>	Unit 4: Organisms and Ecosystems Module: Food Webs and Ecosystems Lesson 3- Changes to Ecosystems -Day 1: Lesson 3 launch pg. 35 (Go Online- science probe). Encounter the Phenomenon pg. 37 (Go Online- video) -Day 2: Explain pgs. 40-44. STEM Connection pg. 45. -Day 3: Lesson 3 review pgs. 46-48 (Go Online- lesson review, lesson check, vocab check).	<u>Module review and test after unit 4 lesson 4.</u>	3 days
4.LS2.4	Students describe how differences in living things cause them to either survive or die when their environment changes. 4.LS2.4 <i>Analyze and interpret data about changes in the environment to explain how some organisms may survive and reproduce, some may not survive, others move to new locations, yet others move into transformed environment.</i>	Crosscutting Concepts: Systems and system models/ energy and matter Science and Engineering Practices: <i>Developing and using models to develop explanations for phenomena, to go beyond the observable and make predictions or to test designs.</i>	Unit 4: Organisms and Ecosystems Module: Food Webs and Ecosystems Lesson 4- Changes Affect Organisms -Day 1: Lesson 4 launch pg. 49 (Go Online- science probe). Encounter the Phenomenon pg. 51 (Go Online- video). Inquiry Activity pgs. 52&53. -Day 2: Explain pgs. 54- 58. STEM Connection pg. 59. -Day 3: Lesson 4 review pgs. 60-62 (Go Online- lesson review, lesson check, and vocab check).	<u>Module review and test after unit 4 lesson 4.</u>	3 days

4.LS2.1 4.LS2.2 4.LS2.3 4.LS2.4	4.LS2.1 <i>Develop and use models to illustrate the flow of matter through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers.</i> 4.LS2.2 <i>Using information about the roles of organisms (producers, consumers, decomposers) in an ecosystem, evaluate how those roles are interconnected in a food web, and communicate how the organisms are continuously able to meet their needs in a stable food web.</i> 4.LS2.3 <i>Develop and use models to determine the effects of introducing a species to, or removing a species from, an ecosystem and how either one can damage the balance of an ecosystem.</i> 4.LS2.4 <i>Analyze and interpret data about changes in the environment to explain how some organisms may survive and reproduce, some may not survive, others move to new locations, yet others move into transformed environment.</i>	Crosscutting Concepts: Systems and system models/energy and matter Science and Engineering Practices: <i>Developing and using models to develop explanations for phenomena, to go beyond the observable and make predictions or to test designs.</i>	Unit 4: Organisms and Ecosystems Module: Food Webs and Ecosystems -Day 1: Module Wrap-Up pg. 69 (Go Online- module wrap up) -Day 2: review content and vocabulary -Day 3: Module Test (online)	Module Review and Test	3 days
4.PS3.1 4.PS3.2 4.ETS2.1 4.PS3.3 4.PS3.3 4.ESS3.1 4.ESS3.2 4.PS4.1 4.PS4.2 4.PS4.3 4.LS2.1 4.LS2.2 4.LS2.3 4.LS2.4			Units 1- 4 Review <i>Teachers will use this time to work on any inquiry activities not done in the previous weeks, STEM modules, and Kahoot games.</i> <i>Optional: review previous tests and results. MOY data point</i>	No Tests	9 Days

Third Quarter: Earth Science (44 days) Jan. 6 – Mar. 13

Standard(s)	Learning Objective(s)	CCC/SEP	McGraw Hill Alignment	Assessments	Timeframe
4. ESS2.1	Students model and identify how changes to earth's surface by wind, water, and ice result in the formation of landforms. 4.ESS2.1 <i>Collect and analyze data from observations to provide evidence that rocks, soils, and sediments are broken into smaller pieces through mechanical weathering (e.g., frost wedging, abrasion, tree root wedging) and are transported by water, ice, wind, gravity, and vegetation.</i>	Crosscutting Concepts: Patterns Science and Engineering Practices: Constructing explanations and designing solutions	Unit 5: Our Dynamic Earth Module: Earth and Its Changing Features Lesson 1: Weathering -Day 1: Lesson launch pg. 73 (Go Online- science probe). Encounter the Phenomenon pg. 75 (Go Online- video) -Day 2: Explain pgs. 78-83. STEM Connection pgs. 84&85. -Day 3: Lesson 1 review pg. 86-88 (Go Online- lesson review, lesson check, and vocab check)	<u>Module Review and Test after lesson 3</u>	3 days
4.ESS1.1 4.ESS2.3	Students will plan and carry out investigations to observe the effects to earth's surface by living and nonliving things. 4.ESS1.1 <i>Generate and support a claim with evidence that over long periods of time, erosion (i.e., weathering and transportation) and deposition have changed landscapes and created new landforms.</i> 4.ESS2.3 <i>Provide examples to support the claim that organisms affect the physical characteristics of their regions (e.g., plants' roots hold soil in place, beaver shelters alter the flow of water, paved surfaces runoff, leaves from trees can obstruct waterways).</i>	Crosscutting Concepts: Cause and Effect Science and Engineering Practices: Planning and carrying out controlled investigations	Unit 5: Our Dynamic Earth Module: Earth and Its Changing Features Lesson 2: Changes to landscapes Over Time -Day 1: Lesson launch pg. 89 (Go Online- science probe). Encounter the Phenomenon pg. 91 (Go Online- video) -Day 2: Explain pgs. 94-98. STEM Connection pg. 99 -Day 3: Lesson 3 review pgs. 100-102 (Go Online- lesson review, lesson check, and vocab check).	<u>Module Review and Test after lesson 3</u>	3 days

4.LS4.1 4.ESS1.2	Students will construct an explanation about how rock and fossil formations change a landscape over time. <i>4.LS4.1 Obtain, evaluate, and communicate information about what a fossil is and ways a fossil can provide information about the past such as a) the nature of environments and b) animals that existed long ago but no longer exist.</i> <i>4.ESS1.2 Use evidence from the presence and location of fossils to determine the order in which rock strata were formed.</i>	Crosscutting Concepts: Patterns Patterns can be used as evidence to support an explanation. Connections to nature of Scientific Knowledge Assumes and Order and Consistency in natural Systems Science assumes consistent patterns in natural systems. Science and Engineering Practices: Constructing explanations and designing solutions to explain phenomena or solve problems.	Unit 5: Our Dynamic Earth Module: Earth and Its Changing Features Lesson 3: Evidence from Rocks and Fossils -Day 1: Lesson launch pg. 103 (Go Online- science probe and strategy). Encounter the Phenomenon pg. 105 (Go Online- <i>Rocky Peak</i>). Inquiry Activity pgs. 106&107. -Day 2: Explain pgs. 108&109 (Go Online- <i>Fossil Dig</i>, lesson vocab, graphic organizer), Close Reading pgs. 110&111. STEM Connection pg. 112. -Day 3: Lesson 3 review pgs. 116-118 (Go Online- lesson review, vocab flashcards, science probe, lesson check, and vocab check).	<u>Module Review and Test after lesson 3</u>	3 days
4. ESS2.1 4.ESS1.1 4.ESS2.3 4.LS4.1 4.ESS1.2	<i>4.ESS2.1 Collect and analyze data from observations to provide evidence that rocks, soils, and sediments are broken into smaller pieces through mechanical weathering (e.g., frost wedging, abrasion, tree root wedging) and are transported by water, ice, wind, gravity, and vegetation.</i> <i>4.ESS1.1 Generate and support a claim with evidence that over long periods of time, erosion (i.e., weathering and transportation) and deposition have changed landscapes and created new landforms.</i> <i>4.ESS2.3 Provide examples to support the claim that organisms affect the physical characteristics of their regions (e.g., plants’</i>		Unit 5: Our Dynamic Earth Module: Earth and Its Changing Features -Day 1: STEM Module Project pgs. 119-124 (Go Online- project plan, rubric, <i>Movers and Shapers</i>, project complete) -Day 2: Module Wrap- Up pg. 125 (Go Online- wrap-up) -Day 3: Module Test online	Module Wrap-Up and Test	3 days

	roots hold soil in place, beaver shelters alter the flow of water, paved surfaces runoff, leaves from trees can obstruct waterways). 4.LS4.1 Obtain, evaluate, and communicate information about what a fossil is and ways a fossil can provide information about the past such as a) the nature of environments and b) animals that existed long ago but no longer exist. 4.ESS1.2 Use evidence from the presence and location of fossils to determine the order in which rock strata were formed.				
			Unit 5: Our Dynamic Earth Module: Earthquakes • Module Opener -Pages 126-128. (Go Online: STEM Connections, Storylines- Earthquakes, Module Pretest, <i>California Earthquakes</i>, STEM Module Project Launch, science and engineering handbook).	<u>Module Review and Wrap-Up after Lesson 4.</u>	1 day
4.ESS2.2	Students will use maps to interpret and analyze data to describe patterns in landforms. 4.ESS2.2 Explain how data from maps and other reliable sources can be used to determine patterns for the locations of mountain ranges, deep ocean trenches, volcanoes, and earthquakes.	Crosscutting Concepts: Patterns Patterns can be used as evidence to support an explanation. Science and Engineering Practices: Analyzing and interpreting data with appropriate data presentation (graph, table, statistics, etc.), identifying sources of error and the degree of certainty. Data analysis is used to derive	Unit 5: Our Dynamic Earth Module: Earthquakes • Lesson 1- Map Earth's Features -Day 1: Lesson 1 Launch pg. 129 (Go Online- science probe and science probe strategy). Encounter the Phenomenon pg. 131 (Go Online- <i>Land Features</i>). -Day 2: Explain pgs. 136-143 (Go Online- Landforms, lesson vocab, Earth's Ocean Features, Map Earth's Features, Our Puzzle Planet).	<u>Module Review and Wrap-Up after Lesson 4.</u>	5 days

		meaning or evaluate solutions.	-Day 3: STEM Connections (Go Online- physical Geographer). Inquiry Activity pgs. 145-147. -Day 4: Lesson 1 review pgs. 148-150 (Go Online- lesson review, vocab flashcards, science probes strategy). -Day 5: Go Online- lesson check and vocab check.		
4.ESS2.2	Students will analyze and interpret data from maps to observe patterns of earthquake occurrences. 4.ESS2.2 <i>Explain how data from maps and other reliable sources can be used to determine patterns for the locations of mountain ranges, deep ocean trenches, volcanoes, and earthquakes.</i>	Crosscutting Concepts: Patterns Patterns can be used as evidence to support an explanation. Science and Engineering Practices: Developing and using models to develop explanations for phenomena, to go beyond the observable and make predictions or to test designs.	Unit 5: Our Dynamic Earth Module: Earthquakes Lesson 2: Map Earthquakes -Day 1: Lesson 2 Launch pg. 151 (Go Online- science probes and science probes strategy). Encounter the Phenomenon pg. 153 (Go Online- <i>Earthquake Occurrences</i>). -Day 2: Inquiry Activity pgs. 154-157 (Go Online- Plot Earthquakes, CER: Make Your Claim) Day 3: Explain pgs. 158&159 (Go Online- read about earthquakes, lesson vocab, read about patterns of earth's features). Close Reading pgs. 160&161. STEM Connection pg. 162. Leveled Reader- How earthquakes and volcanoes shape earth. -Day 4: Inquiry Activity pg. 163. Lesson 2 review pgs.	<u>Module Review and Wrap-Up after Lesson 4.</u>	5 days

			164-166 (Go Online- lesson review, vocab flashcards, science probes strategy). -Day 5: Go Online- lesson check and vocab check.		
	Students will develop and use models to describe the patterns in waves and how waves cause objects to move.	Crosscutting Concepts: Patterns Similarities and differences in patterns can be used to sort, classify, and analyze simple rates of change for natural phenomena. Science and Engineering Practices: Developing and using models to develop explanations for phenomena, to go beyond the observable and make predictions or to test designs.	Unit 5: Our Dynamic Earth Module: Earthquakes Lesson 3- Model Earthquake Movement -Day 1: Lesson 3 Launch pg. 167 (Go Online- science probes and science probes strategy). Encounter the Phenomenon pg. 169 (Go Online- <i>Water Drop</i>). -Day 2: Explain pgs. 174- 177 (Go Online- read about waves, lesson vocab, read about features of waves, read about record and measure earthquakes). -Day 3: Inquiry Activity pgs. 178&179. STEM Connection pgs. 180&181. -Day 4: Lesson 3 Review pgs. 182-184 (Go Online- lesson review, vocab flashcards, science probes strategy). -Day 5: Go Online- lesson check and vocab check	<u>Module Review and Wrap-Up after Lesson 4.</u>	5 days
4.ETS2.1	Students will construct explanations about the effects of earthquakes on structures and design solutions to reduce earthquake damage.	Crosscutting Concepts: Cause and Effect Cause and effect relationships are	Unit 5: Our Dynamic Earth Module: Earthquakes Lesson 4- Reduce Earthquake Damage	<u>Module Review and Wrap-Up</u>	5 days

	4.ETS2.1 <i>Explain how existing technologies have been designed or improved to increase their benefits, to decrease known risks, and to meet societal demands (e.g., artificial limbs, seatbelts, cellphones).</i>	routinely identified, tested, and used to explain change. Connections to Engineering, Technology, and Applications of Science Influence of Engineering, Technology, and Science on Society and the Natural World People’s needs and wants change over time, as do their demands for new and improved technologies. Engineers improve existing technologies or develop new ones to increase their benefits, decrease known risks, and meet social demands. Science and Engineering Practices: Constructing explanations and designing solutions to explain phenomena or solve problems.	-Day 1: Lesson 4 Launch pg. 185 (Go Online- science probes and science probes strategy). Encounter the Phenomenon pg. 187 (Go Online- <i>Bridges</i>). -Day 2: Explain pgs. 190-193 (Go Online- read about: predict earthquakes, lesson vocabulary, read about: earthquake signs, read about: earthquake safety, read about: safe structures). -Day 3: Close Reading pgs. 194&195. STEM Connection pgs. 196&197. -Day 4: Inquiry Activity pgs. 198&199. Lesson Review pgs. 200-202 (Go Online- lesson review, vocab flashcards, science probes strategy). -Day 5: Go Online- lesson check and vocab check.	<u>after Lesson 4.</u>	
4.ESS2.2 4.ETS2.1	4.ESS2.2 <i>Explain how data from maps and other reliable sources can be used to determine patterns for the locations of mountain ranges, deep ocean trenches, volcanoes, and earthquakes.</i> 4.ETS2.1 <i>Explain how existing technologies have been designed or improved to increase their benefits, to decrease known risks, and to</i>		Unit 5: Our Dynamic Earth Module: Earthquakes -Day 1&2: STEM Module Project pgs. 203-208 (Go Online- project plan, rubric, investigator, project complete).	STEM Module, Module Wrap-Up, Module Test	4 days

	<i>meet societal demands (e.g., artificial limbs, seatbelts, cellphones).</i>		-Day 3: Module Wrap-Up pg.209 (Go Online- module wrap-up) -Day 4: Go Online- module test		
			Units 5 Review <i>Teachers will use this time to work on any inquiry activities not done in the previous weeks, STEM modules, and Kahoot games.</i> <i>Optional: review previous tests and results. EOY data point</i>	No Tests	7 days

Fourth Quarter: TCAP Review and Family Life

Standard(s)	Learning Objective(s)	CCC/SEP	McGraw Hill Alignment	Assessments	Timeframe
			Units 1-3 Review State Assessment Guide- Unit 1: Forces and Energy Module: Energy and Motion pg. 2. Unit 1 Test pg. 20 State Assessment Guide- Unit 2: Using Energy Module: Energy Transformations pg. 44 Module: Natural Resources in the Environment pg. 67 Unit 2 Test pg. 92 State Assessment Guide- Unit 3: Waves and Technology	State Assessment Guide Unit Test 1 pg. 20 Unit 2 Test pg. 92 Unit 3 Test pg. 143	14 days

			Module: Wave Module pg. 119 Unit 3 Test pg. 143		
			Units 4&5 Review- TCAP Week 1 State Assessment Guide- Unit 4: Organisms and Ecosystems Module: Food Webs and Ecosystems pg. 158 Unit 4 Test pg. 182 State Assessment Guide- Unit 5: Our Dynamic Earth Module: Earth and Its Changing Features pg. 198 Module: Earthquakes pg. 218 Unit 5 Test pg. 239	State Assessment Guide Unit 4 Test pg. 182 Unit 5 Test pg. 239	5 days
			Review- TCAP Week 2		5 days
			STEM Activities		5 days
			Family Life		5 days
			STEM Activities- End of Year		7 days