

Science / Grade 3

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>

1 st Quarter					
Standard(s)	Learning Objective(s)	CCC/SEP	McGraw Hill Alignment	Assessments	Pacing
3.PS1.3 Construct an argument based on evidence that materials have both fixed and changing properties, some of which are useful for the identification of a material	Students will plan and conduct. Investigations to observe patterns in how materials can be described and classified by their observable properties.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standards for Science: SEP - Planning and Carrying out controlled Investigations - Students carry out investigations in groups, where conditions and variables are controlled, utilize appropriate instruments, and deliberately plan multiple trials. DCI - 3.PS1 Matter and its Interactions CCC - Scale, proportion, and quantity - Students make measurements of physical properties of objects using base units.	Unit 1: Properties of Materials Module: Describe Materials Lesson 1: Properties of Matter	Module overview - Phenomenon Photo Projectable - cliff house - Phenomenon - <i>Building Materials</i> - Talk About It questions page 3 (TE)	1 week
				Assess Prior Knowledge - SEP and CCC Prompts on pages 4-5 - Page Keeley Science Probe on page 5	
				Engage - Phenomenon Photo Projectable – natural playground - Phenomenon – examples of the phenomenon of different materials - Talk About It page 7 (TE) - Encounter the Phenomenon Pages 6-7	

				Explore <i>Soak It Up</i> activity	
				Explain - Inquiry Rewind video – <i>Soak It Up</i> - Video - <i>Properties of Recyclables</i> - Read <i>Properties of Materials</i> and <i>Observe Properties</i> on pages 12-15 - Review Vocabulary	
				Evaluate Lesson 1 Review on page 25	
3.PS1.1 Develop a model of solids liquids and gases to describe each state of matter is made of particles too small to be seen.	Students will use models to show the scale and organization of particles in matter. Students will investigate how the arrangement of particles affect the properties of matter.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standards for Science: SEP - Developing and Using Models - Student models begin to become abstract and metaphorical, incorporating relationships between events and predictive aspects fir recurring events. DCI - 3.PS1 Matter and its Interactions CCC - Pattern - Students use patterns as evidence in an argument or to make predictions, construct explanations, and engage in arguments.	Unit 1: Properties of Materials Module: Describe Materials Lesson 2: Particles of Matter	Module overview - Phenomenon Photo Projectable - cliff house - Phenomenon - <i>Building Materials</i> - Talk About It questions page 3 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 4-5 - Page Keeley Science Probe on page 27 Engage - Phenomenon Photo Projectable - glass with ice and water - Phenomenon – <i>Ice Melting</i> - Talk About It page 29 (TE) - Encounter the Phenomenon Pages 8-9 Explore <i>Observe Matter</i> activity	1 week
				Explain - Inquiry Rewind video - <i>Observe Matter</i> - Video – <i>States of Matter</i>	

				- Read <i>Changing States of Matter</i> and <i>Model Matter</i> on pages 34-35 - Review Vocabulary	
				Evaluate Lesson 2 Review on page 39	
3.PS1.1 Develop a model of solids liquids and gases to describe each state of matter is made of particles too small to be seen.	Students will construct explanations about how an object made of small pieces can break into pieces and be made into a new object.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standards for Science: SEP - Constructing Explanations and Designing Solutions - Students can design a device utilizing scientific ideas as well as compare competing solutions based on constraints and criteria for success. DCI - 3.PS1 Matter and its Interactions CCC - Energy and Matter - Students begin to recognize types of energy present in a system and the ability to transfer this energy between objects.	Unit 1: Properties of Materials Module: Changes to Materials Lesson 1: Build with Materials	Module overview - Phenomenon Photo Projectable - brick wall - Demonstrate the phenomenon of sturdy bricks - Talk About It questions page 49 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 18-19 - Page Keeley Science Probe on page 51 Engage - Phenomenon Photo Projectable – mosaic art - Phenomenon – <i>Mosaic Art</i> - Talk About It page 53 (TE) - Encounter the Phenomenon Pages 20-21 Explore <i>Get Connected</i> activity	1 week
3.PS1.2 Construct an explanation	Students will construct an argument from evidence that some changes caused	In this lesson, students will explore content and develop skills leading to	Unit 1: Properties of Materials	Module overview Review phenomenon Photo Projectable - brick wall Evaluate Lesson 1 Review on page 67	1 week

about the effects of heating and cooling a substance differentiating between changes that can be reversed (i.e., freezing and melting) and those that cannot (e.g., baking a cake or burning fuel).	by heating or cooling materials can be reversed and some cannot.	mastery of the following Tennessee Academic Standards for Science: SEP – Engaging in Argument from Evidence - Students can create evidence-based explanations for relationships seen in the natural world as well as identify evidence that supports other explanations. DCI - 3.PS1 Matter and its Interactions CCC – Cause and Effects - Students routinely search for cause-and-effect relationships in systems they study.	Module: Changes to Materials Lesson 2: Materials Can Change	- Review the phenomenon of sturdy bricks - Talk About It questions page 49 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 18-19 - Page Keeley Science Probe on page 69 Engage - Phenomenon Photo Projectable – natural playground - Phenomenon – <i>Glass Blowing Art</i> - Talk About It page 71 (TE) - Encounter the Phenomenon Pages 22-23 Explore <i>Heat and Materials</i> activity Explain - Inquiry Rewind video – <i>Heat and Materials</i> - Video – <i>How Materials Change</i> - Read <i>Temperature and Changes Are Not Reversible</i> on pages 76-77 and 81 - Review Vocabulary Evaluate Lesson 2 Review on page 87	
3.PS2.1 Explain cause and effect relationships of forces that cannot be seen including interactions between two objects not in contact with each other (i.e.,	Students will ask questions that can be investigated to explore the effects of electricity on objects.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standards for Science: SEP – Planning and Carrying Out Controlled Investigations Students carry out investigations in groups where conditions and variables are controlled, utilize appropriate instruments, and deliberately plan multiple trials	Unit 2: Forces Around Us Module: Electricity and Magnetism Lesson 1: Electricity and Designing Solutions	Module overview - Project phenomenon Photo Projectable - electromagnet - Discuss the phenomenon of electromagnet - Talk About It questions page 97 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 32-22 - Page Keeley Science Probe on page 99	1 week

static electricity, magnetism and gravity).		DCI - 3.PS2 Motion and Stability forces and Interactions CCC – Cause and Effects Students use patterns as evidence in an argument or to make predictions, construct explanations, and engage in arguments		Engage - Phenomenon Photo Projectable – <i>Static electricity</i> - Phenomenon – <i>Static Electricity</i> - Talk About It page 101 (TE) - Encounter the Phenomenon Pages 34-35 Explore <i>Static Charge</i> activity Explain - Inquiry Rewind video – <i>Static Charge</i> - Read <i>Electrical Energy</i> and <i>Static Energy</i> on pages 106 and 107 - Review Vocabulary pages 106-107 Evaluate Lesson 1 Review on page 115	
3.PS2.1 Explain cause and effect relationships of forces that cannot be seen including interactions between two objects not in contact with each other (i.e., static electricity, magnetism and gravity). 3.PS3.3	Students will explain how magnetic forces can be used in designing solutions to problems.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standards for Science: SEP Asking Questions and Defining Problems - Students explicitly describe a design problem that can be solved using a new object or device Analyzing and Interpreting Data - Students should be able to organize experimental data to reveal patterns and utilize data using simple graph to form explanations Planning and carrying out controlled investigations	Unit 2: Forces Around Us Module: Electricity and Magnetism Lesson 2: Magnetism	Module overview - Review the module phenomenon Photo Projectable - electromagnet - Review the phenomenon of electromagnet - Talk About It questions page 97 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 32-22 - Page Keeley Science Probe on page 117 Engage - Phenomenon Photo Projectable – <i>Iron Fillings</i> - Phenomenon – <i>Magnetic Interactions</i> - Talk About It page 119 (TE) - Encounter the Phenomenon Pages 36-37	1 week

Evaluate how magnets cause changes in the motion and position of objects, even when the objects are not touching the magnet.		- students carry out investigations in groups, where conditions and variables are controlled, utilize appropriate instruments, and deliberately plan multiple trials. DCI - 3.PS2 Motion and Stability forces and Interactions 3.PS3 Energy CCC – Cause and Effects - Students use patterns as evidence in an argument or to make predictions, construct explanations, and engage in arguments		Explore <i>Magnetic Investigation</i> activity Explain - Inquiry Rewind video – Magnetic Investigation - Watch the video <i>Magnets Solve Problems</i> - Read <i>Magnets</i> and Magnetic Fields on pages 122 and 123 - Review Vocabulary pages 122 and 123 Evaluate Lesson 2 Review on page 133	
3.PS3.1 Make observations of sound, light, heat, and motion to collect evidence that energy is present in a system.	Students will plan and carry out investigations to describe and model how energy transfers with sound and light.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standards for Science: SEP - Develop and Using Models - Modeling in 3- 5 builds K-2 experiences and progresses to building and revising simple models and using models to represent events and design solutions - Use models to describe phenomena. DCI – PS3.B: Conservation of Energy and Energy Transfer CCC – Energy and Matter Energy can be transferred in various ways and between objects.	Unit 3: Energy Module: Energy Lesson 1: Sound and Light	Module overview - Review the module phenomenon Photo Projectable – cars in traffic - Review the phenomenon of <i>traffic</i> - Talk About It questions page 143 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 46-47 - Page Keeley Science Probe on page 145 Engage - Phenomenon Photo Projectable – fireworks - Phenomenon – <i>Fireworks</i> - Talk About It page 147 (TE) - Encounter the Phenomenon Pages 48-49 Explore <i>Make Sound</i> activity Explain - Inquiry Rewind video – <i>Make Sound</i>	1 week

				• Watch the video <i>Sound and Light Energy</i> • Read <i>Magnets and Magnetic Fields</i> on pages 150-153 • Review Vocabulary pages 150-153	
				Evaluate Lesson 1 Review on page 159	
2nd Quarter					
Standard(s)	Learning Objective(s)	CCC/SEP	McGraw Hill Alignment	Assessments	Pacing
3.PS3.1 Make observations of sound, light, heat, and motion to collect evidence that energy is present in a system.	Students will plan and carry out investigations to explain how energy can be transferred by heat.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standards for Science: SEP - Develop and Using Models • Modeling in 3- 5 builds K-2 experiences and progresses to building and revising simple models and using models to represent events and design solutions ○ Use models to describe phenomena. DCI – PS3.B: Conservation of Energy and Energy Transfer CCC – Energy and Matter • Energy can be transferred in various ways and between objects.	Unit 3: Energy Module: Energy Lesson 2: Heat and Motion	Module overview • Review the module phenomenon Photo Projectable – cars in traffic • Review the phenomenon of <i>traffic</i> • Talk About It questions page 143 (TE)	1 week
				Assess Prior Knowledge • Review SEP and CCC prompts on pages 46-47 • Page Keeley Science Probe on page 161	
				Engage • Phenomenon Photo Projectable – mirage • Phenomenon – <i>Mirage</i> • Talk About It page 147 (TE) • Encounter the Phenomenon Pages 50-51	
				Explore <i>Particles on the Move</i> activity	
				Explain • Inquiry Rewind video – <i>Particles on the Move</i> • Watch the video <i>Everyday Thermal Energy</i>	

				- Read <i>Using Heat Energy</i> and <i>Energy of Motion</i> on pages 168-172 - Review Vocabulary pages 168-171	
				Evaluate Lesson 2 Review on page 175	
3.PS3.2 Develop a model to show that energy can be transferred from place to place by electric currents in a system (e.g., open, closed, simple, parallel, series circuits)	Students will use their observations from their investigations to describe how energy is transferred by electric currents.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standards for Science: SEP - Develop and Using Models - Modeling in 3- 5 builds K-2 experiences and progresses to building and revising simple models and using models to represent events and design solutions - Use models to describe phenomena. DCI – PS3.B: Conservation of Energy and Energy Transfer CCC – Energy and Matter - Energy can be transferred in various ways and between objects.	Unit 3: Energy Module: Energy Lesson 3: Electricity	Module overview - Review the module phenomenon Photo Projectable – cars in traffic - Review the phenomenon of <i>traffic</i> - Talk About It questions page 143 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 46-47 - Page Keeley Science Probe on page 177 Engage - Phenomenon Photo Projectable – trolley - Phenomenon – <i>Trolley</i> - Talk About It page 179 (TE) - Encounter the Phenomenon Pages 52-53 Explore <i>Make It Work</i> activity Explain - Inquiry Rewind video – <i>Make It Work</i> - Watch the video <i>Uses of Electricity</i> - Read <i>Electric Current</i> and <i>Circuit Diagram</i> on pages 182-184 - Review Vocabulary pages 182-184 Evaluate Lesson 3 Review on page 193	1 week

3.LS1.1 Use graphical representations to compare how species including humans and other organisms have unique and diverse life cycles.	Students will develop and use models to describe patterns in plant life cycles.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standards for Science: SEP - Develop and Using Models - Develop models to describe phenomena DCI – 3.LS1.1: From molecules to Organisms: Structures and Processes CCC – Patterns - Patterns of change can be used to make predictions.	Unit 4: Life Cycles and Traits Module: Plants Lesson 1: Plant Life Cycle	Module overview - Project the module phenomenon Photo Projectable – maple tree seeds - Review the phenomenon of <i>Helicopter</i> - Talk About It questions page 203 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 62-63 - Page Keeley Science Probe on page 205 Engage - Phenomenon Photo Projectable – dandelion - Phenomenon – <i>Growing seed</i> - Talk About It page 207 (TE) - Encounter the Phenomenon Pages 64-65 Explore <i>Seed Growth</i> activity Explain - Inquiry Rewind video – <i>Growth</i> - Watch the video <i>Strange but True: Plant Life Cycles</i> - Read <i>From Seed to plant and Reproducing with Flowers</i> on pages 210- 212 - Review Vocabulary pages 210-211 Evaluate Lesson 1 Review on page 219	1 week
3.LS1.2 Analyze the internal and external structures that aquatic and land organisms have to support	Students will construct an argument to explain how plants use their structures to survive, grow, and reproduce.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standards for Science: SEP - Engaging in Argument from Evidence	Unit 4: Life Cycles and Traits Module: Plants Lesson 2: Structures and Functions of Plants	Module overview - Project the module phenomenon Photo Projectable – monarch butterflies - Review the phenomenon of <i>Butterfly</i> - Talk About It questions page 203 (TE)	1 week

survival, growth, behavior and reproduction		- Construct an argument with evidence, data, and/or a model. DCI – 3.LS1.2: From molecules to Organisms: Structures and Processes CCC – Systems and System Models - A system can be described in terms of its components and their interactions.		Assess Prior Knowledge - Review SEP and CCC prompts on pages 62-63 - Page Keeley Science Probe on page 221 Engage - Phenomenon Photo Projectable –redwood forest - Phenomenon – <i>Forest</i> - Talk About It page 223 (TE) - Encounter the Phenomenon Pages 66-67 Explore <i>Plant Parts</i> activity Explain - Inquiry Rewind video – <i>Plant Parts</i> - Watch the video <i>Plant Structure and Function</i> - Read <i>Plant Needs</i> and <i>Plant Parts</i> on pages 226-229 - Review Vocabulary pages 13, and 16-17 Evaluate Lesson 2 Review on page 239	
3.LS1.1 Use graphical representations to compare how species including humans and other organisms have unique and diverse life cycles.	Students will use models to describe patterns in animal life cycles.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standards for Science: SEP Developing and Using Models Students models begin to become abstract and metaphorical, incorporating relationships between events and predictive aspects for recurring events.	Unit 4: Life Cycles and Traits Module: Animals Lesson 1: Animal Life Cycles	Module overview - Project the module phenomenon Photo Projectable – goats in a tree - Review the phenomenon of <i>Climbing Goats</i> - Talk About It questions page 248 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 76-77 - Page Keeley Science Probe on page 251	1 week

		Constructing Explanations and Designing Solutions - Students can create evidence-based explanations for relationships seen in the natural world as well as identify evidence that supports other explanations. DCI – 3.LS1: From Molecules to Organisms: Structures and Processes CCC Patterns - Students use patterns as evidence in an argument or to make predictions, construct explanations, and engage in arguments. Structure and Function - Students begin to recognize that objects have smaller substructures which determine the property of a material or system.		Engage - Phenomenon Photo Projectable – mountain lion and cub - Phenomenon – <i>Forest</i> - Talk About It page 253 (TE) - Encounter the Phenomenon Pages 78-79 Explore <i>Grow a Caterpillar</i> activity Explain - Inquiry Rewind video – <i>Grow a Caterpillar</i> - Watch the video <i>Plant Metamorphosis</i> - Read <i>Animal Life Cycles</i> and <i>More Animal Life Cycles</i> on pages 256-257 and 260-261 - Review Vocabulary pages 256 and 261 Evaluate Lesson 1 Review on page 256	
3.LS1.2 Analyze the internal and external structures that aquatic and land organisms have to support survival, growth, behavior and reproduction.	Students will construct an argument to explain how animals use their structures to survive, grow, and reproduce.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standards for Science: SEP - Engaging in Argument from Evidence Students create and identify evidence-based arguments and consider whether an argument is supported by evidence or relies on opinions or incomplete representation of relevant evidence. DCI – 3.LS1: From Molecules to Organisms: Structures and Processes	Unit 4: Life Cycles and Traits Module: Animals Lesson 2: Structure and Functions of Animals	Module overview - Project the module phenomenon Photo Projectable – goats in a tree - Review the phenomenon of <i>Climbing Goats</i> - Talk About It questions page 248 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 76-77 - Page Keeley Science Probe on page 267 Engage - Phenomenon Photo Projectable – grizzly bears - Phenomenon – <i>Grizzly Bear</i> - Talk About It page 269 (TE)	1 week

		CCC – Systems and System Models Student groups and describes interactions of the components that define a larger system.		Encounter the Phenomenon Pages 80-81 Explore <i>Animal Parts</i> activity	
				Explain - Inquiry Rewind video – <i>Animal Parts</i> - Watch the video Plant <i>Animal Structures</i> - Read <i>Animal Needs and Structures</i> on pages 274-275 - Review Vocabulary pages 275-276	
				Evaluate Lesson 2 Review on page 285	
3.LS2.1 Obtain information to compare various ways that groups organize (e.g., specialize roles for members vs same roles for members) to explain the benefits of animal group behavior.	Students will engage in argument to explain how some animals form groups that help them survive.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standards for Science: SEP - Engaging in Argument from Evidence - Students create and identify evidence-based arguments and consider whether an argument is supported by evidence or relies on opinions or incomplete representation of relevant evidence. DCI – 3.LS2: Ecosystems: Interactions, Energy, and Dynamics CCC Cause and Effect - Students routinely search for cause-and-effect relationships in systems they study. Systems and System Models	Unit 4: Life Cycles and Traits Module: Animals Lesson 3: Animal Group Survival	Module overview - Project the module phenomenon Photo Projectable – goats in a tree - Review the phenomenon of <i>Climbing Goats</i> - Talk About It questions page 248 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 76-77 - Page Keeley Science Probe on page 287 Engage - Phenomenon Photo Projectable – school of fish - Phenomenon – <i>School of Fish</i> - Talk About It page 289 (TE) - Encounter the Phenomenon Pages 82-83 Explore <i>Ant Workers</i> activity	1 week
				Explain - Inquiry Rewind video – <i>Ant Workers</i> - Watch the video <i>Ant Colony</i>	

		Student groups and describes interactions of the components that define a larger system.		- Read <i>Animal Groups, Flying Solo</i>, and <i>All Different Sizes</i> on pages 294-296 - Review Vocabulary pages 294	
				Evaluate Lesson 3 Review on page 303	

3rd Quarter

Standard(s)	Learning Objective(s)	CCC/SEP	McGraw-Hill Alignment	Assessments	Pacing
3.LS2.1 Obtain information to compare various ways that groups organize (e.g., specialized roles for members vs same roles for members) to explain the benefits of animal group behavior.	Students will use evidence to explain what causes organisms to survive in their environment.	In this lesson, students will explore content and develop skill leading to master to the following Tennessee Academic Standard for Science. SEP – Constructing Explanations and Defining Solutions - Use evidence (e.g., observations, patterns) to support an explanation SEP – Planning and Carrying Out Controlled Investigations - Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered. DCI – LS1.A Structure and Function. LS4.C Adaptation. CCC Cause and Effect - Cause and effect relationships are routinely identified and used to explain changes	Unit 5: Different Environments Module: Organisms and the Environment Lesson 1: Survival of Organisms	Module overview - Encounter the module phenomenon – coyote in the desert - Review the phenomenon of <i>Hunting</i> Talk About It questions page 3 (TE)	1 week
				Assess Prior Knowledge Review SEP and CCC prompts on pages 6A-6B Page Keeley Science Probe on page 5	
				Engage - Phenomenon Photo Projectable – Bristlecone Pine Tree - Phenomenon – <i>Bristlecone Pine Tree</i> - Talk About It page 7 (TE) Encounter the Phenomenon Pages 6-7	
				Explore <i>Plant Hunt</i> activity	
				Explain - Inquiry Rewind video – <i>Plant Hunt</i> - Watch the video <i>Needs of Plants</i> - Read <i>Animal Needs, Ecosystems, Native Birds</i> on pages 10-17 Review Vocabulary pages 14-15	

				Evaluate Lesson 1 Review on page 20	
3.LS4.1 Use evidence to explain the cause and effect relationship between a naturally changing habitat and how well an organism survives.	Students will argue from evidence that some animals survive better in certain environments.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standard for Science: SEP – Asking Questions and Defining Problems - Define a simple design problem that can be solved through the development of an object, tool, process, or system and includes several criteria for success and constraints on materials, time, or cost. SEP – Engaging in Argument from Evidence - Make a claim about the merit of solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem. DCI – ETS1.A: Defining and Delimiting Engineering Problems. LS4.C: Adaptation. LS4.D: Biodiversity and Humans. CCC – Systems and System Models - A system can be described in terms of its components and their interactions.	Unit 5: Different Environments Module: Organisms and the Environment Lesson 2: Changes Affect Organisms	Module overview - Encounter the module phenomenon – coyote in the desert - Review the phenomenon of <i>Hunting</i> Talk About It questions page 3 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 24A-B Page Keeley Science Probe on page 23 Engage - Phenomenon Photo Projectable – Oroville Dam Beach - Phenomenon – <i>Oroville Dam Beach</i> - Talk About It page 25 (TE) Encounter the Phenomenon Pages 24-25 Explore <i>Changes by Humans</i> activity Explain - Inquiry Rewind video – <i>Changes by Humans</i> - CER: <i>Make Your Claim</i> - Read <i>Ecosystems, Changes in Ecosystems, Southwest Forest Fires</i> on pages 28-33 Review Vocabulary pages 28-29 Evaluate Lesson 2 Review on page 36	1 week
3.LS4.2 Use evidence to determine the changes between an environment's biodiversity	Students will analyze and interpret data about fossils to provide evidence about where they lived long ago.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standard for Science: SEP – Analyzing and Interpreting Data	Unit 5: Different Environments Module: Organisms and the Environment Lesson 3: Fossils	Module overview - Encounter the module phenomenon – coyote in the desert - Review the phenomenon of <i>Hunting</i> Talk About It questions page 3 (TE)	1 week

and human resources.		- Analyze and interpret data to make sense of phenomena using logical reasoning SEP – Engaging in Argument from Evidence - Construct an argument with evidence DCI – LS4.C: Adaptation. CCC – Cause and Effect - Cause and effect relationships are routinely identified and used to explain changes CCC – Scale, Proportion, and Quantity - Observable phenomena exist from very short to very long time periods		Assess Prior Knowledge - Review SEP and CCC prompts on pages 40A-40B Page Keeley Science Probe on page 39 Engage - Phenomenon Photo Projectable – Fish Fossils - Phenomenon – <i>Fish Fossils</i> - Talk About It page 41 (TE) Encounter the Phenomenon Pages 40-41 Explore <i>Layers and Fossils, Part 1&2</i> activity <i>Fossil Dig</i> activity Explain - Inquiry Rewind video – <i>Layers and Fossils, Part 1</i> - Read <i>Animal Fossils What Fossils Tell Us, Learning from Fossils</i> on pages 44 Review Vocabulary pages 44-45 Evaluate Lesson 3 Review on page 54	
3.ESS2.1 Develop a model to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.	Students will use a model to identify matter on Earth as part of Earth’s systems.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standard for Science: SEP – Developing and Using Models - Student models begin to become abstract and metaphorical, incorporating relationships between events and predictive aspects for recurring events. DCI – 3.ESS2: Earth’s Systems CCC – Systems and System Models - Students group and describe interactions of the components that define a larger system.	Unit 6: Ecosystems Module: Energy in Ecosystems Lesson 1: Earth’s Major Systems	Module overview - Encounter the module phenomenon Baleen Whales Feeding - Encounter the Phenomenon: Energy in Ecosystems Talk About It questions page 65 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 68 A-B Page Keeley Science Probe on page 67 Engage - Encounter the module phenomenon Yosemite National Park - Encounter the Phenomenon: Earth’s Major Systems Talk About It questions page 69 (TE) Explore <i>Types of Matter on Earth</i> activity	1 week

				Explain - Inquiry Rewind video – <i>Types of Matter on Earth</i> - Read <i>Earth's Systems, What Does a Systems Engineer Do?</i> on pages 72-77 Review Vocabulary pages 72-73	
				Evaluate Lesson 1 Review on page 78	
3.ESS2.2 Develop a model to describe the cycling of water through Earth's spheres driven by energy from the sun.	Students will develop and use models of how matter cycles through ecosystems. Students will also be able to explain how these cycles affect the ecosystem.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standard for Science: SEP – Developing and Using Models - Student models begin to become abstract and metaphorical, incorporating relationships between events and predictive aspects for recurring events. SEP – Analyzing and Interpreting Data - Students organize data (observations and measurements) in a manner which facilitates further analysis and comparisons. DCI – 3.ESS2: Earth's Systems CCC – Systems and System Models - Students group and describe interactions of the components that define a larger system. CCC – Patterns - Students recognize, classify, and record patterns involving rates of change.	Unit 6: Ecosystems Module: Energy in Ecosystems Lesson 2: Cycles of Matter in Ecosystems	Module overview - Encounter the module phenomenon Baleen Whales Feeding - Encounter the Phenomenon: Energy in Ecosystems Talk About It questions page 65 (TE)	1 week
				Assess Prior Knowledge Review SEP and CCC prompts on pages 82 A-B Page Keeley Science Probe on page 81	
				Engage - Encounter the module phenomenon Yellowstone Hot Springs - Encounter the Phenomenon: Cycles of Matter in Ecosystems Talk About It questions page 83 (TE)	
				Explore <i>Cycling of Matter</i> activity	
				Explain - Inquiry Rewind video – <i>Cycling of Matter</i> - CER: Make a Claim - Read: <i>Water Cycle, Oxygen-Carbon Cycle</i>, on pages 88-91 Review Vocabulary pages 88-89	
				Evaluate Lesson 2 Review on page 92	

3.ESS2.1 Develop a model to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. 3.EES2.2 Develop a model to describe the cycling of water through Earth's spheres driven by energy from the sun.	Students will develop and use models to show how energy is transferred through an ecosystem.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standard for Science: SEP – Developing and Using Models - Student models begin to become abstract and metaphorical, incorporating relationships between events and predictive aspects for recurring events. CCC – Energy and Matter - Energy can be transferred in various ways and between objects..	Unit 6: Ecosystems Module: Energy in Ecosystems Lesson 3: Energy Transfer in Ecosystems	Module overview - Encounter the module phenomenon Baleen Whales Feeding - Encounter the Phenomenon: Energy in Ecosystems Talk About It questions page 65 (TE)	1 week
				Assess Prior Knowledge Review SEP and CCC prompts on pages 96 A-B Page Keeley Science Probe on page 95	
				Engage - Encounter the module phenomenon Sanderlings on the Beach - Encounter the Phenomenon: Energy Transfer in Ecosystems Talk About It questions page 97 (TE)	
				Explore <i>Ecosystem Tag</i> activity <i>Model a Food Chain and a Food Web</i> activity	
				Explain - Inquiry Rewind video – <i>Ecosystem Tag</i> - Read: <i>Organisms in Ecosystems, Food Chains and Food Webs, Building a Biome</i> on pages 100-103 Review Vocabulary pages 100-101	
				Evaluate Lesson 3 Review on page 108	

4th Quarter

Standard(s)	Learning Objective(s)	CCC/SEP	McGraw-Hill Alignment	Assessments	Pacing
3.ESS2.3 Use tables, graphs, and	Students will analyze and interpret data to describe different weather patterns.	In this lesson, students will explore content and develop skills leading to	Unit 6: Ecosystems	Module overview Build an Eco-Column Project Pages 111-117	1 week

tools to describe precipitation, temperature, clouds, and wind (i.e., direction and speed) to predict local weather and climate.		mastery of the following Tennessee Academic Standard for Science: SEP – Analyzing and Engineering Practices - Students organize data (observations and measurements) in manner which facilitates further analysis and comparisons. DCI – 3.ESS2: Weather and Climate CCC – Patterns - Students recognize, classify, and record patterns involving rates of change.	Module: Weather Impacts Lesson 1: Weather Patterns	- Encounter the Phenomenon Outrageous Weather Talk About It questions page 119 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 96 A-B Page Keeley Science Probe on page 121 Engage - Encounter the module phenomenon Moving Clouds - Encounter the Phenomenon: Weather Patterns Talk About It questions page 123 (TE) Explore <i>Predict Weather</i> activity Explain - Inquiry Rewind video – <i>Predict Weather</i> - Read: <i>Weather, Describing and Measuring Weather, Predicting Weather, Weather Map</i> on pages 126-131 Review Vocabulary pages 126-127 Evaluate Lesson 1 Review on page 124	
3.ESS2.4 Incorporate weather data to describe major climates (e.g., polar, temperate, tropical) in different regions of the world.	Students will obtain and combine information to describe climate in different regions.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standard for Science: SEP – Obtaining, Evaluating, and Communicating Information Students can read and summarize text and embedded, non-text elements from multiple sources synthesizing an understanding on a scientific idea. Students can communicate scientific information in writing utilizing embedded elements.	Unit 6: Ecosystems Module: Weather Impacts Lesson 2: Weather and Seasons	Module overview - Build an Eco-Column Project Pages 111-117 - Encounter the Phenomenon Outrageous Weather Talk About It questions page 119 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 96 A-B Page Keeley Science Probe on page 137 Engage - Encounter the module phenomenon Natural Changes - Encounter the Phenomenon: Weather and Seasons	1 week

		DCI – 3.ESS2.D: Weather and Climate CCC – Scale, Proportion, and Quantity Students become familiar with sizes immensely large or small or durations extremely short or long.		Talk About It questions page 139 (TE) Explore <i>Compare Weather Patterns</i> activity Explain - Inquiry Rewind video – <i>Compare Weather Patterns</i> - Read: <i>Climate, Seasons, Earth and Climate, Factors that Affect Climate</i> on pages 142-149 Review Vocabulary pages 142-143 Evaluate Lesson 2 Review on page 152	
3.ESS3.1 Evaluate existing solutions that reduce the impact of natural hazards (e.g., fires, landslides, earthquakes, volcanic eruptions, floods, severe weather) on the environment.	Students will design and compare models to explain how to reduce the impact of natural hazards	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standard for Science: SEP – Obtaining, Evaluating, and Communicating Information - Students can read and summarize text and embedded, non-text elements from multiple sources synthesizing an understanding on a scientific idea. Students can communicate scientific information in writing utilizing embedded elements. SEP – Constructing Explanations and Designing Solutions - Students can design a device utilizing scientific ideas as well as compare competing solutions based on constraints and criteria for success.	Unit 6: Ecosystems Module: Weather Impacts Lesson 3: Prepare for Natural Hazards	Module overview - Encounter the Phenomenon Outrageous Weather Talk About It questions page 119 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 156 A-B Page Keeley Science Probe on page 155 Engage - Encounter the module phenomenon Storm - Encounter the Prepare for Natural Hazards Talk About It questions page 157 (TE) Explore <i>Build Sugar Structure</i> activity <i>Sandbags and Floods</i> activity Explain - Inquiry Rewind video – <i>Build Sugar Structures</i> - CER: <i>Make Your Claim</i> - Read: <i>Scientists Study Natural Hazards, Building Structures, Lightning Rods, Preparing for Natural Hazards</i> on pages 162-169 Review Vocabulary pages 162-163	1 week

		DCI – 3.ESS3.1: Natural Hazards. 3.ETS1.1: Defining and Delimiting Engineering Problems CCC – Cause and Effect - Students routinely search for cause and effect relationships in systems they study. CCC – Systems and Systems Models - Students group and describe interactions of the components that define a larger system.		Evaluate Lesson 3 Review on page 172	
3.ESS1.1 Use data to categorize different bodies in our solar system including inner and outer planets, moons, asteroids, comets, and meteoroids according to their physical properties and motion.	Students identify Earth's position in the solar system relative to its other objects.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standard for Science: SEP – Obtaining, Evaluating, and Communicating Information - Students can read and summarize text and embedded, non-text elements from multiple sources synthesizing an understanding on a scientific idea. Students can communicate scientific information in writing utilizing embedded elements. DCI – 3.ESS1.B: Earth and Solar System CCC – Scale, Proportion, and Quantity - Students become familiar with sizes immensely large or small or durations extremely short or long	Unit 7: Earth's Place in the Universe Module: Our Solar System Lesson 1: The Solar System	Module overview - Encounter the Phenomenon Our Solar System Talk About It questions page 183 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 186 A-B Page Keeley Science Probe on page 185 Engage - Encounter the module phenomenon The Solar System Talk About It questions page 187 (TE) Explore <i>Position the Planets</i> activity Explain - Inquiry Rewind video - Read: <i>The Solar System, Other Objects</i>, on pages 192-195 Review Vocabulary pages 192 Evaluate Lesson 1 Review on page 196	1 week

3.ESS1.1 Use data to categorize different bodies in our solar system including inner and outer planets, moons, asteroids, comets, and meteoroids according to their physical properties and motion.	Students recognize the major characteristics of all planets and compare and contrast the properties of inner and outer planets.	In this lesson, students will explore content and develop skills leading to mastery of the following Tennessee Academic Standard for Science: SEP – Obtaining, Evaluating, and Communicating Information - Students can read and summarize text and embedded, non-text elements from multiple sources synthesizing an understanding on a scientific idea. Students can communicate scientific information in writing utilizing embedded elements. DCI – 3.ESS1.B: Earth and Solar System CCC – Scale, Proportion, and Quantity - Students become familiar with sizes immensely large or small or durations extremely short or long.	Unit 7: Earth’s Place in the Universe Module: Our Solar System Lesson 1: The Planets	Module overview - Encounter the Phenomenon Our Solar System Talk About It questions page 183 (TE) Assess Prior Knowledge - Review SEP and CCC prompts on pages 200 A-B Page Keeley Science Probe on page 199 Engage - Encounter the module phenomenon The Planets Talk About It questions page 201 (TE) Explore <i>Size Up the Planets</i> activity Explain - Inquiry Rewind video - Read: <i>The Inner Planets, Planetary Discoveries</i> on pages 206-209 Review Vocabulary pages 206 Evaluate Lesson 2 Review on page 212	1 week
---	--	--	--	---	---------------