

Science / 2nd

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:

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1 st Quarter					
Standard(s)	Learning Objective(s)	CCC/SEP	McGraw Hill Alignment	Assessments	Pacing
Unit 1 Lesson 1 2.PS2.1 2.PS2.2 2.ETS1.1	I can analyze the push or pull that occurs when objects collide or are connected. I can plan and carry out an investigation to demonstrate how a push or pull affects the motion of an object. I can apply an engineering design approach to identify and solve problems. Essential Question – What happens when objects are pushed or pulled and collide?	SEP – Analyzing and Interpreting Data, Planning and Carrying out Investigations DCI – PS2 Motion and Stability CCC – Cause and Effect, Scale, Proportion, and Quantity	Lesson 1 – Pushes, Pulls, and Collisions – pgs. 2-15 Module Opener: - Phenomenon – Broken Window – pg. 3 Science Probe: - Online resource Engage: - Phenomenon – Girl on Trampoline pg. 5 - Talk About It questions pg. 5 Explore/Explain/Elaborate: - Moving Objects – pg. 6 - Moving the Car – pg. 10 - Objects Collide – pg.12	Lesson Review - pgs. 13-15	1.5 Weeks (Weeks 4-5) S.S. Weeks 1-3

			Elaborate - online		
Unit 1 Lesson 2 2.PS2.2 2.PS3.1 2.PS3.2 2.ETS1.1 2.ETS1.2	I can explain how objects push on each other and may change shape when they collide. Essential Question – What happens when objects are pushed or pulled and collide?	SEP - Asking Questions and Designing Problems, Developing and Using Models, Planning and Carrying Out Investigations DCI – PS2 Motion and Stability, PS3 Energy, ETS Engineer Design CCC - Cause and Effect, Systems and System Models	Lesson 2 – Pushes, Pulls, and Collisions – pgs. 16 -25 Science Probe: - Online resource Engage: - Phenomenon – What affects the motion of an object? pg. 17 - Talk About It questions pg. 17 Explore/Explain/Elaborate: - Investigating Pushes and Pulls – pg. 18 - On the Move – pg. 22 - Speed and Collisions – pg.24 - Elaborate - online	Lesson Review - pgs. 26-28 Unit 1 Module Assessment	1.5 Weeks (Weeks 4-5)
Unit 3 Lesson 1 2.LS1.1	I can explain the structure and function of different animal body parts. Essential Question – What structures do animals have?	SEP - Obtaining, Evaluating, and Communicating Information DCI - LS1 From Molecules to Organisms: Structures and Processes CCC - Patterns	Lesson 1 – Animal Structures – pgs. 58-66 Module Overview: - Phenomenon – Ridgeway Rail – pg. 58D Science Probe: - Online resource Engage: - Phenomenon – Birds – pg. 59 - Talk About It questions pg. 59 Explore/Explain/Elaborate:	Lesson Review – pgs. 67-69	1 Week (Week 6-7)

			• Animal Parts – pg. 60 • Animal Sorts – pg. 65 • Elaborate - online		
Unit 3 Lesson 2 2.LS.1.1 2.ETS.1.1	I can explain how animal body parts help them and their young survive. Essential Question – What are the functions of different animal body parts?	SEP- Engaging in Argument from Evidence DCI- LS1 From Molecules to Organisms: Structures and Processes ETS - Engineering and Design CCC - Structure and Function, Systems and System Models	Lesson 2 – Functions of Animal Structures – pg. 70-81 Science Probe: • Online resource Engage: • Phenomenon – Functions of Animal Structures – pg. 71 • Talk About It questions pg. 71 Science Probe: • Online resource Explore/Explain/Elaborate: • Animal Move – pg. 72 • Animal Use Their Parts – pg. 75 • Explore Animal Structures – pg. 77 • Elaborate - online	Lesson Review – pgs. 79-81	1 Week (Week 8)
Unit 3 Lesson 3 2.LS1.3	I can identify the similarities and differences between an animal and their offspring. Essential Question – How are animals similar to and different from their offspring?	SEP- Developing and Using Models DCI- LS1 From Molecules to Organisms: Structures and Processes CCC -	Lesson 3 – Functions of Animal Structures – pgs. 82-90 Science Probe: • Online resource Engage: • Phenomenon – Which of these eggs does not belong in the nest? pg. 83	Lesson Review – pgs. 91-93 Unit 3 Module Assessment	1 Week (Week 9)

		Pattern	- Talk About It questions pg. 83 Explore/Explain/Elaborate: - Compare Birds and Their Offspring – pg. 84 - Dogs Change as they Grow – pg. 89 - Elaborate - online		
2nd Quarter					
Standard(s)	Learning Objective(s)	CCC/SEP	HQIM Alignment	Assessments	Timeframe
Unit 3 Lesson 4 2.LS.1.3	I can explain how an animal's behavior helps them survive. Essential Question – How does an animal's behavior help it survive?	SEP - Obtaining, Evaluating, and Communicating Information DCI - LS1 From Molecules to Organisms: Structures and Processes CCC – Pattern	Lesson 4 – Animal Behaviors – pgs. 94-100 Science Probe: - Online resource Engage: - Phenomenon – What do you think these animals are doing? pg. 95 - Talk About It questions pg. 95 Explore/Explain/Elaborate: - What Animals Do – pg. 96 - Animals and Thier Young – pg. 100 - Elaborate - online	Lesson Review – pgs. 101-103	1 Week (Week 1)
Unit 3 Lesson 5 2.LS.1.3	I can explain how an animal communicates. Essential Question – How do animals communicate?	SEP - Developing and Using Models DCI -	Lesson 2 – Animal Communication – pgs. 104-111 Science Probe:	Lesson Review – pgs. 112-114 Unit 3 Module Assessment	1 Week (Week 2) <i>S.S. Weeks 3-4</i>

		LS1 From Molecules to Organisms: Structures and Processes CCC - Pattern	- Online resource Engage: - Phenomenon – What are the sea lions doing? pg. 105 - Talk About It questions pg. 105 Explore/Explain/Elaborate: - Animal Sounds – pg. 106 - Animal Messages – pg. 110 - Elaborate - online		
Unit 2 Lesson 1 2.PS4.1 2.PS4.2 2.PS4.3 2.ETS1.3 2.ETS2.2	I can explain how you can use sound to communicate over a distance. Essential Question – How do we use sound to communicate over a distance?	SEP – Constructing Explanations and Designing Solutions, Planning and Carrying Out Investigations DCI – 2.PS.4 Waves and their Applications ETS1 Engineering Design, ETS2 Links Among Engineering, Technology, Science, and Society CCC- Cause and Effect	Lesson 1 – Sound and its Uses – pgs.30-40 Module Overview: - Phenomenon – Sound and Light – pg. 31 Science Probe: - Online resource Engage: - Phenomenon – Sound and its Uses – pg. 32 - Talk About It questions pg. 32 Explore/Explain/Elaborate: - Vibrating Throat – pg. 34 - Sound Messages – pg. 38 - Elaborate - online	Lesson Review – pgs. 41-43	1 Week (Week 5)
Unit 2 Lesson 2	I can explain how you can use light to communicate over a distance.	SEP – Constructing Explaining as and designing	Lesson 2 – Light and it Uses – pgs. 44-51	Lesson Review – pgs. 52-54 Unit 2 Module Assessment	1 Week (Week 6)

2.PS4.2 2.PS4.3 2.ETS1.3	Essential Question – How do we use light to communicate over a distance?	Solutions, Obtain, Evaluate and Communicate Information DEC – PS4 Waves and Thier Applications, ETS1 Engineer Design CCC – Cause and Effect, Structure and Function	Science Probe: • Online resource Engage: • Phenomenon – Light and its Uses – pg. 45 • Talk About It questions pg. 45 Explore/Explain/Elaborate: • Light and Mirrors – pg. 46 • Objects that Communicate – pg. 51 • Elaborate – online		S.S. Weeks 7-8
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3rd Quarter

Standard(s)	Learning Objective(s)	CCC/SEP	HQIM Alignment	Assessments	Timeframe
Unit 5 Lesson 1 2.ESS1.1 2.ESS2.2	I can make observations and construct explanations for changes to Earth’s landscape that can happen very slowly. Essential Question: How can wind and water change Earth’s landscape?	SEP- Constructing explanations and designing solutions; Using mathematical and computational thinking DCI- Earth’s place in the universe and Earth’s systems CCC- Scale, Proportion, and Quantity; Stability and change; Systems	Lesson 1: Slow changes to Earth’s landscape-pages 162-183 Module Opener: • Encounter the phenomenon- How did this canyon form? Pgs. 162-163 Science Probe: • Online resource Engage: • Encounter the Phenomenon: How did this rock get its shape? Pg. 165 Explore/Explain/Elaborate:	Lesson Review pgs. 181-183	SS-Week 1 Review Rules and Procedures SS Weeks 2-3 1 Week (Week 4)

		and system models	• Inquiry Activity- Changing rocks pg. 166-168 • Weathering pg. 169-170 • Inquiry Activity- Moving sand pg. 171-174 • Erosion pg. 175-176 • Inquiry Activity- Changing landforms pg. 177-180 • Elaborate online resource		
Unit 5 Lesson 2 2.ESS1.1 2.ESS2.2	I can make observations and construct explanations for changes to Earth's landscape that can happen very quickly. Essential Question: How can Earth's landscape change quickly?	SEP- Constructing explanations and designing solutions DCI- Earth's place in the universe and Earth's systems CCC- Scale, proportion, and quantity; stability and change; systems and system models	Lesson 2: Quick Changes to Earth's Landscape pgs. 184-201 Science Probe: • Online Resource Engage: • Encounter the Phenomenon- What happened to the land? Pg. 185 Explore/Explain/Elaborate: • Inquiry activity: Hands on Earthquake pg. 186-188 • Landscapes can change quickly pg. 189-190 • Floods pg. 191-192 • Inquiry Activity: Volcano eruption pg. 193-195 • Underwater volcanoes pg. 196 • Inquiry Activity: Changing landscapes pg. 197-198	Lesson Review pgs. 199-201	1 Week (Week 5)

			Elaborate-online resource		
Unit 5 Lesson 3 2.ESS2.1 2.ETS1.1 2.ETS1.3 2.ETS2.2	I can develop and use models to compare multiple solutions to slow or prevent changes to Earth's landscape. Essential Question: How can people help to slow or prevent changes to Earth's landscape?	SEP- Asking questions and defining problems; engaging in argument from evidence; using mathematics and computational thinking DCI- Earth's systems, engineering design, and links among engineering, technology, science, and society CCC- Cause and effect; scale, proportion, and quantity; systems and system models	Lesson 3: Design Solutions to Slow Landscape Changes pgs. 202-214 Science Probe: - Online resource Engage: - Encounter the Phenomenon- How can people slow erosion? Pg. 203 Explore/Explain/Elaborate: - Inquiry activity- Prevent erosion pgs. 204-205 - Ways to slow landscape changes pg. 206-207 - Inquiry activity- Wind erosion pgs. 208-209 - Inquiry Activity- Design a way to reduce wind erosion pgs. 210-211 - Elaborate online resource	Lesson review pgs. 212-214 Module wrap up pg. 215 Unit 5 Module Assessment	1 Week (Week 6) SS Weeks 7-8
Unit 4 Lessons 1 and 2 2.LS2.1 2.ETS2.1	I can make observations of plants and animals to compare the diversity of life in their local habitat and what they need to survive. Essential Questions: What do the living things near us need to survive? What do the living things in land habitats need to survive?	SEP- Developing and using models; engaging in argument from evidence; constructing explanations and designing solutions DCI- Ecosystems:	Lesson 1: Local Habitats pgs. 118-129 Module Opener: - Encounter the phenomenon- What could live here? Pg. 117 Science probe: - online resource Engage:	Lesson 1 Review pgs. 127-129 Lesson 2 Review pgs. 141-143	1.5 (Week 9/10)

		Interactions, energy, and dynamics; Links among engineering, technology, science, and society CCC- Scale, proportion, and quantity; Systems and system models; stability and change	• Encounter the phenomenon- What living things can you find here? Pg. 119 Explore/Elaborate/Explain: • Inquiry activity- Habitats near me pgs. 120-121 • Habitats pgs. 122-123 • Living things depend on their habitats pg. 124 • Inquiry activity- Living things in my habitat pgs. 125-126 • Elaborate online resources Lesson 2: Land Habitats pgs. 130-143 Science Probe: • Online resource Engage: • Encounter the phenomenon- What plants and animals live here? Pg. 131 Explore/Explain/Elaborate: • Inquiry Activity: Pill Bug habitat pgs. 132-133 • Land Habitats pgs. 134-137 • Inquiry Activity: Desert habitats pgs. 138-140 Lesson 2 continued: • Elaborate online resources		
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Unit 4 Lesson 2 and 3 2.LS2.1 2.ETS2.1	I can make observations of plants and animals to compare the diversity of life in their local habitat and what they need to survive. Essential Questions: What do the living things in land habitats need to survive? What do the living things in water habitats need to survive?	SEP- Developing and using models; engaging in argument from evidence DCI- Ecosystems: Interactions, energy, and dynamics CCC- Stability and change; Systems and system models	Lesson 3: Water Habitats pgs. 144-160 Science Probe: - Online resource Engage: - Encounter the phenomenon- What living things could be found in a tide pool and a river? Pg. 145 Explore/Elaborate/Explain: - Inquiry activity- Living things in coral reefs pgs. 146-147 - Water habitats pgs. 148-151 - Inquiry activity- Plants in water habitats pgs. 152-153 - River habitats pgs. 154-155 - Inquiry activity- Living things in coral reefs pgs. 156-157 - Elaborate online resources	Lesson 3 Review pgs. 158-160 Module Wrap Up pg. 161 Module Assessment	.5 (Week 10)
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4th Quarter

Standard(s)	Learning Objective(s)	CCC/SEP	HQIM Alignment	Assessments	Timeframe
Unit 6 Lesson 1 and 2 2.ESS2.3	I can develop and use models to observe patterns in where land and water are located. Essential Questions: How can we describe the land around us? How can we describe the shapes of land on Earth?	SEP- Developing and using models DCI- Earth's systems; map skills CCC-	Lesson 1: Local Landscapes pgs. 216-231 Module Opener: Encounter the Phenomenon: What kinds of land and bodies of water can be found on Earth? Pg. 217 Science probe:	Lesson 1 Review pgs. 229-231	SS Weeks 1-2 1.5 Weeks (Week 3, 4)

		Scale, proportion, and quantity	• Online resource Engage: • Encounter the Phenomenon- How can you describe this land? Pg. 219 Explore/Elaborate/Explain: • Inquiry Activity- Observe land pg. 220-221 • Landscapes pgs. 222-225 • Landscape shapes pg. 226 • Inquiry activity: Model your landscape pgs. 227-228 • Elaborate online resources Lesson 2: Land on Earth pgs. 232-245 Science Probe: • Online resource Engage: • Encounter the phenomenon- What do you observe about the land? Pg. 233 Explore/Elaborate/Explain: • Inquiry activity: Earth's Land pgs. 234-235 • Earth's surface pgs. 236-238 • Landforms on a map pg. 239 • Inquiry activity- Mountains everywhere pgs. 240-241		Lesson 2 Review pgs. 243-245
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			- Inquiry activity- Landforms on Earth pg 242 - Elaborate online resources		
Unit 6 Lesson 2 and 3 2.ESS2.2 2.ESS2.3 2.ESS2.4	I can develop and use models to observe patterns where land and water are located. I can obtain, evaluate, and communicate information to observe patterns in where water is found on Earth. Essential Questions: How can we describe the shapes of land on Earth? Where can we find water on Earth and is it solid or liquid?	SEP- Developing and using models; constructing explanations and designing solutions; obtaining evaluating, and communicating information DCI- Earth's systems; map skills CCC- Scale, proportion, and quantity; cause and effect; systems and system models	Lesson 3: Water on Earth pgs. 246-258 Science Probe: - Online resource Engage- - Encounter the phenomenon: What do the different colors on Earth's surface show? Pg. 247 Explore/Elaborate/Explain: - Inquiry activity- Earth's surface pgs. 248-250 - Bodies of water pgs. 251-253 - Inquiry activity- Moving water pgs. 254-255 - Elaborate online resource	Lesson 3 Review pgs. 256-258 Module Wrap Up pg. 259 Module 6 Assessment	1 Week (week 4) SS Weeks 5-6 Family Life- Week 7 SS Weeks 8-9