

1st Grade- Science

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 (9 weeks)						
Unit/Module	Standard(s)	Learning Objective(s)	CCC/SEP	McGraw Hill Alignment	Assessments	Pacing
Weeks 1-3 Social Studies: Rules and Laws (Weeks 1&2), Culture (Week 3)						
Weeks 4-5 Science: Unit 1- Light & Shadows						
Big Idea: What happens when light hits an object?						
Essential Question: Do we need light to see?						
Unit 1: Light & Shadows Module: See Objects Lesson 1: Light	1.PS4.1 Make observations to construct an evidence-based account that objects are visible when light shines on them or if they produce their own light (e.g., very hot objects), and that different amounts of light influence what we can see. 1.ETS1.2 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved.	In this module, students will explore the interaction of light and materials. They will learn that light illuminates, passes through some objects, and casts shadows. I can explain how shadows are made. Students will make observations and construct explanations to observe what causes	Science & Engineering Practices Asking Questions & Defining Problems Constructing Explanations & Designing Solutions Crosscutting Concepts Cause & Effect	Module Opener: Discover the Phenomenon: How does light interact with materials? Engage: Encounter the Phenomenon: Why can you see some objects in the photo and not others? Explore/Explain: Inquiry Activity (Hands-On): Observe Light	Evaluate: Lesson Review- Explain the Phenomenon Three-Dimensional Thinking Extend It Lesson Check: Light Vocabulary Check: Light	Weeks 4-5

		objects to be seen when illuminated. I can observe and explain what causes objects to be seen when illuminated.		Light Light Lets Us See Objects Make Light Vocabulary: Illuminate, light Read Aloud: A Constant Friend Light and Shadows Leveled Readers: Shadows		
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Weeks 6-7 Social Studies: Culture

Weeks 8-9 Science: Unit 1- Light & Shadows

Big Idea: What happens when light hits an object?

Essential Question: How does light interact with materials?

Unit 1: Light & Shadows Module: See Objects Lesson 2: Light and Materials	1.PS4.2 Conduct an investigation to describe how the path of a beam of light can be changed by interactions with different materials (i.e. light passes through, some light passes through, light changes directions, or light is blocked which can cause shadows). 1.ETS1.1 Apply an engineering design approach to identify and solve practical problems.	Students will carry out investigations to determine the effect of placing objects in the path of a beam of light. I can investigate what happens when objects are in the path of a beam of light. Students will use what they learned throughout the module to explain how light and how it is interacting with the materials of the structure.	Science & Engineering Practices Analyzing and Interpreting Data Planning and Carrying Out Controlled Investigations Crosscutting Concepts Cause & Effect Pattern	Engage: Encounter the Phenomenon: Where is the plane? Explore/Explain: Inquiry Activity (Demonstrate): Explore Light Materials Light Passes Through Some Objects Different Types of Materials	Evaluate: Lesson Review- Explain the Phenomenon Three-Dimensional Thinking Extend It Module Wrap-Up: Rediscover the Phenomenon Module Test: See Objects	Weeks 8-9
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		I can explain how light interacts with different materials.		Module Wrap-Up: Revisit the Phenomenon Vocabulary: material, opaque, shadow, translucent, transparent Read Aloud: A Constant Friend Light and Shadows Leveled Readers: Shadows		
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2nd Quarter (8 weeks)						
Unit/Module	Standard(s)	Learning Objective(s)	CCC/SEP	McGraw Hill Alignment	Assessments	Pacing
Weeks 1-2 Social Studies: History/Good Citizens						
Weeks 3-4 Science: Unit 5 Weather & the Sun						
Big Idea: What does the Sun do?						
Essential Question: How does the Sun affect Earth's surface?						
Unit 5: Weather & the Sun Module: The Sun and Earth's Surface Lesson 1: Sunlight on Earth's Surface	1.PS3.1 Make observations to determine how sunlight warms Earth's surfaces (i.e. sand, soil, rocks, and water). 1.PS4.1 Make observations to construct an evidence-based account that objects are visible when light shines on them or if they produce their own light (e.g., very hot objects), and that different amounts of light influence what we can see.	In this module, students will determine how sunlight affects Earth's surface and how to reduce the warming effect of sunlight. I can determine how sunlight affects Earth's surface. Students will carry out investigations to explain the effect of sunlight on Earth's surface. I can make observations and complete investigations to explain the effect of sunlight on Earth's surface.	Science & Engineering Practices Constructing Explanations and Designing Solutions Engaging in Arguments from Evidence Crosscutting Concepts Cause & Effect Pattern	Module Opener: Discover the Phenomenon: What is shining on the pinecone? Engage: Discover the Phenomenon: How will the sunlight change the water? Explore/Explain: Inquiry Activity (Hands-On): Sunlight and Water Sunlight in the Desert Inquiry Activity: The Sun Inquiry Activity (Hands-On): Surfaces & Sunlight	Evaluate: Lesson Review- Explain the Phenomenon Lesson Check: Sunlight on Earth's Surface	Weeks 3-4

				Inquiry Activity (Hands-On): Melt in th Sunlight Vocabulary: Earth, Sun, surface Read Aloud: Tortoise Is Hot Earth & the Sun Leveled Readers: Melting Snow		
Weeks 5-6 Social Studies: Culture/History						
Week 7 Science: Unit 2 All About Plants						
Big Idea: What are the functions of common plant structures?						
Essential Question: What patterns can you find between different plants?						
Unit 2: All About Plants Module: Plant Structures and Functions Lesson 1: Plant Parts	1.LS1.1 Develop and use a model to explain the structure of plants (i.e., roots, stems, leaves, flowers, fruits) and describe the function of the parts (taking in water and air, producing food, making new plants).	In this module, students will learn how plant structures help plants live. I can explain how plant parts help plants survive. Students will make observations of plants to construct explanations of their external parts and how their structures help them survive. I can construct explanations of the plants external parts	Science & Engineering Practices Developing and Using Models Crosscutting Concepts Structure & Function	Module Opener: Discover the Phenomenon: How does this plant stay upright? Engage: Encounter the Phenomenon: How is this sequoia tree different from other plants? Explore/Explain: Inquiry Activity (Hands-On): Observe Plant Parts Plants Have Parts	Evaluate: Lesson Review- Explain the Phenomenon Three-Dimensional Thinking Extend It Lesson Check: Plant Parts Vocabulary Check: Plant Parts	Week 7

		and how they help keep the plants alive.		Plant Structures (Hands-On) Vocabulary: structure Read Aloud: Comparing Plant Parts Plant Parts Around the World Leveled Readers: Parts of Plants		
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Week 8 Science: Unit 2 All About Plants

Big Idea: What are the functions of common plant structures?

Essential Question: What do plant structures do?

Unit 2: All About Plants Module: Plant Structures and Functions Lesson 2: Functions of Plant Parts	1.LS1.1 Develop and use a model to explain the structure of plants (i.e., roots, stems, leaves, flowers, fruits) and describe the function of the parts (taking in water and air, producing food, making new plants). 1.LS1.3 Analyze and interpret data from observations to describe how plants respond to changes in the environment (e.g., turn leaves toward the sun). 1.ETS1.3 Develop a simple sketch, drawing, or physical model that communicates solutions to others.	Students will make observations of plants to construct explanations of their external parts and how plant structures are related to their functions and help them survive. I can explain how a plants structures are related to their functions and help keep them alive. Students will use what they learned throughout the module to explain how structures of a pant help it to survive.	Science & Engineering Practices Analyzing and Interpreting Data Constructing Explanations & Designing Solutions Developing and Using Models Crosscutting Concepts Cause & Effect Structure & Function	Engage: Encounter the Phenomenon: Where is the Sun in this photo? Explore/Explain: Inquiry Activity (Hands-On): Plants & Light Plant Parts & Their Functions Plants Use Their Parts to Live and Grow Inquiry Activity (Hands-On): Celery Stems Vocabulary:	Evaluate: Lesson Review- Explain the Phenomenon Three-Dimensional Thinking Extend It Module Wrap-Up: Rediscover the Phenomenon Module Test: Plant Structures & Functions	Week 8
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		I can explain how structures of a plant help it to survive.		flower, fruit, function, leaf, root, seed, stem Read Aloud: Which Way to Sprout How Plants Use Their Parts to Live & Grow Leveled Readers: Parts of Plants		
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3rd Quarter (10 weeks)						
Unit/Module	Standard(s)	Learning Objective(s)	CCC/SEP	McGraw Hill Alignment	Assessments	Pacing
Week 1 Science: Unit 2 All About Plants						
Big Idea: How do plants grow and survive?						
Essential Question: How are plants similar and different from their offspring?						
Unit 2: All About Plants Module: Plant Parents and Their Offspring Lesson 1: Plants and Their Parents	1.LS1.2 Observe and analyze how living organisms grow and change over time. 1.ETS1.1 Apply an engineering design approach to identify and solve practical problems.	In this module, students will develop the understanding that plants have almost identical structures to their parents and that these structures help the plants survive. I can develop an understanding that plants structures and their parents structures are the same. Students will construct explanations about patterns found when exploring plants and their offspring. I can explain the patterns found when exploring plants and their offspring.	Science & Engineering Practices Analyzing and Interpreting Data Crosscutting Concepts Pattern	Module Opener: Discover the Phenomenon: What happens when you blow on a dandelion? Engage: Encounter the Phenomenon: Are these plants the same? Explore/Explain: Inquiry Activity (Data Analysis): Compare an Adult Plant and a Young Plant Seedlings Grow Offspring Are Like Their Parents Inquiry Activity (Simulation): Plants Grow and Change Vocabulary: inherit, offspring, parent, seedling	Evaluate: Lesson Review- Explain the Phenomenon Three-Dimensional Thinking Lesson Check: Plants & Their Parents Vocabulary Check: Plants & Their Parents	Week 1

				Read Aloud: Little Seed's Journey Every Plant Is Different Leveled Readers: Parts of Plants		
Week 2 Science: Unit 2 All About Plants						
Big Idea: How do plants grow and survive?						
Essential Question: How do plants use their parts to meet their needs?						
Unit 2: All About Plants Module: Plant Parents and Their Offspring Lesson 2: Plant Survival	1.LS2.1 Conduct an experiment to show how plants depend on air, water, minerals from soil, and light to grow and thrive.	Students will analyze and interpret data about how a plant's structure and function helps it survive and grow. I can explain how a plant's structure and function helps it survive and grow. Students will use what they have learned throughout the module to explain how plants survive and reproduce. I can explain how plants survive and reproduce.	Science & Engineering Practices Planning and Carrying Out Controlled Investigations Crosscutting Concepts Energy and Matter Structure and Function	Engage: Discover the Phenomenon: What happened to this plant? Explore/Explain: Inquiry Activity (Simulation): Plants and Shade Seeds People Can Help Plants Survival Structures Inquiry Activity (Hands-On): Plant Needs Vocabulary: need, pollen, survive Read Aloud:	Evaluate: Lesson Review- Explain the Phenomenon Three-Dimensional Thinking Extend It Module Wrap-Up: Revisit the Phenomenon Module Test: Plant Survival	Week 2

				Little Seed's Journey Every Plant Is Different Leveled Readers: Parts of Plants		
Weeks 3-5 Social Studies: History						
Weeks 6-7 Science: Unit 3 Living Things and Habitats						
Big Idea: What do plants need from their habitats?						
Essential Question: What do plants need to grow?						
Unit 3: Living Things & Habitats Module: Plants in Landscapes Lesson 1: What Plants Need	1.LS2.1 Conduct an experiment to show how plants depend on air, water, minerals from soil, and light to grow and thrive. 1.LS2.2 Obtain and communicate information to classify plants by where they grow (i.e., water, land) and the plant's physical characteristics.	In this module, students will make observations to learn about the needs of plants and how plants help to make more plants. I can explain how plants are used to make more plants. Students will plan and conduct investigations to determine if plants need sunlight and water to grow. I can plan and conduct an investigation to see if plants need sunlight and water to grow.	Science & Engineering Practices Obtaining, Evaluating, and Communicating Information Planning and Carrying Out Controlled Investigations Crosscutting Concepts Energy and Matter Pattern	Module Opener: Encounter the Phenomenon: Why are there specks of yellow on the butterfly? Engage: Encounter the Phenomenon: How do these plants get what they need? Explore/Explain: Inquiry Activity (Hands-On): More or Less Sunlight Plants Inquiry Activity (Hands-On): Plants and Sunlight Plants in Dry Places	Evaluate: Lesson Review- Explain the Phenomenon Three-Dimensional Thinking Extend It Lesson Check: What Plants Need Vocabulary Check: What Plants Need	Weeks 6-7

				World's Largest Blooming Plant Inquiry Activity (Hands-On): Plants & Water Inquiry Activity (Research): Plants in Extreme Habitats Vocabulary: leaf, root, mineral, nutrient, stem Read Aloud: Growing Up Plant & Animal Needs Leveled Readers: Water Habitats What do we do without bees?		
Weeks 7-8 Science: Unit 3 Living Things and Habitats						
Big Idea: What do plants need from their habitats?						
Essential Question: What do animals do to help pollinate plants and disperse seeds?						
Unit 3: Living Things & Habitats Module: Plants in Landscapes Lesson 2: Plants Depend on Animals	1.LS2.3 Develop and use models to show how plants and animals depend on their surroundings and other living things to meet their needs in the places they live. 1.ETS1.2 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved.	Students will develop and use models to show that the structure of plant and animal parts aid in pollination and seed dispersal. I can create a model to show that plant structures and animal structures work	Science & Engineering Practices Obtaining, Evaluating, and Communicating Information Planning and Carryng Out Controlled Investigations	Engage: Encounter the Phenomenon: How do animals help plants? Explore/Explain: Inquiry Activity (Hands-On): Observe Seeds Seeds	Evaluate: Lesson Review- Explain the Phenomenon Three-Dimensional Thinking Extend It	Weeks 7-8

		together to help spread seeds. Students will revisit the module phenomenon and explain their reasoning. I can explain how plant structures work together with animal structures to help spread seeds.	Crosscutting Concepts Energy and Matter Pattern	How Seeds Travel Inquiry Activity (Simulation): Traveling Seeds Inquiry Activity (Hands-On): Flower Investigation Pollination Pollinators Inquiry Activity (Hands-On): Insect Pollination Vocabulary: disperse, pollen, seed, flower, pollination Read Aloud: Growing Up Plant & Animal Needs Leveled Readers: Water Habitats What do we do without bees?	Module Wrap-Up: Revisit the Phenomenon Module Test: Plants in Landscapes	
Weeks 9-10 Social Studies: History						

4 th Quarter (9 weeks)						
Unit/Module	Standard(s)	Learning Objective(s)	CCC/SEP	McGraw Hill Alignment	Assessments	Pacing
Week 1 Science: Unit 4 Sky Patterns						
Big Idea: What patterns can we observe in the sky?						
Essential Question: When can we see different objects in the sky?						
Unit 4: Sky Patterns Module: Observe the Sky Lesson 1: Objects in the Sky	1.ESS1.1 Use observations or models of the sun, moon, and stars to describe patterns that can be predicted. 1.ESS1.2 Observe natural objects in the sky that can be seen from Earth with the naked eye and recognize that a telescope, used as a tool, can provide greater detail of objects in the sky.	In this module, students will observe long and short term patterns in the sky. I can make observations about the short and long term patterns in the sky. Students will identify the objects in the sky and make observations about what objects are present during the day and night. I can identify the objects in the sky during the day and at night.	Science & Engineering Practices Analyzing and Interpreting Data Crosscutting Concepts Pattern Scale, Proportion, and Quantity	Module Opener: Discover the Phenomenon: What time of day is it? Engage: Discover the Phenomenon: What do you observe in the night sky? Explore/Explain: Inquiry Activity (Hands-On): Day and Night Sky Daytime and Nighttime Stars Telescopes and the Night Sky Inquiry Activity (Research): Up in the Sky Be an Astronomer Sky Patterns Vocabulary:	Evaluate: Lesson Review- Explain the Phenomenon Three-Dimensional Thinking Extend It Lesson Check: Objects in the Sky Vocabulary Check: Objects in the Sky	Week 1

				Earth, moon, planet, star, Sun Read Aloud: Lights in the Sky Another Sun Leveled Readers: Earth, Sun, Moon and Stars		
Week 2 Science: Unit 4 Sky Patterns						
Big Idea: What patterns can we observe in the sky?						
Essential Question: What are the day and night patterns?						
Unit 4: Sky Patterns Module: Observe the Sky Lesson 2: Day and Night Patterns	1.ESS1.1 Use observations or models of the sun, moon, and stars to describe patterns that can be predicted. 1.ESS1.3 Make observations to predict patterns between sunrise and sunset, and the change of seasons.	Students will make observations and predict patterns of day and night. I can predict the patterns of day and night.	Science & Engineering Practices Analyzing and Interpreting Data Planning and Carryng Out Controlled Investigations Crosscutting Concepts Pattern	Engage: Discover the Phenomenon: What is this tool used for? Explore/Explain: Inquiry Activity (Hands-On): Sundial Patterns Earth Moves Different Times of Day Moon Phases Inquiry Activity (Hands-On): Moon Phases Vocabulary: horizon, Moon phases, sunrise, sunset	Evaluate: Lesson Review- Explain the Phenomenon Three-Dimensional Thinking Lesson Check: Day and Night Patterns Vocabulary Check: Day and Night Patterns	Week 2

				Read Aloud: Lights in the Sky Another Sun Leveled Readers: Earth, Sun, Moon and Stars		
Week 3 Science: Unit 4 Sky Patterns						
Big Idea: What long-term exist during the year?						
Essential Question: What long-term patterns exist during the year?						
Unit 4: Sky Patterns Module: Observe the Sky Lesson 3: Patterns During the Year	1.ESS1.3 Make observations to predict patterns between sunrise and sunset, and the change of seasons.	Students will recognize patterns that occur over several days, weeks, or months. I can see the patterns in the sky that occur over time. Students will revisit the module phenomenon and explain their reasoning. I can explain the patterns in the sky that occur over time.	Science & Engineering Practices Planning and Carryng Out Controlled Investigations Crosscutting Concepts Pattern	Engage: Discover the Phenomenon: What time of year do you think it is? Explore/Explain: Inquiry Activity (Simulation): Sunlight Sunlight During the Year Seasonal Patterns Season and Patterns Sunlight During the Year Inquiry Activity (Data Analysis): Seasons and the Sun Vocabulary: fall, season, spring, summer, winter	Evaluate: Lesson Review- Explain the Phenomenon Three-Dimensional Thinking Extend It Module Wrap-Up: Revisit the Phenomenon Module Test: Sky Patterns	Week 3

				Read Aloud: The Four Seasons The Other Half of the World Leveled Readers: Earth, Sun, Moon and Stars		
Weeks 4-5 Social Studies: Tennessee						
Weeks 6-7 Science: Unit 5 Weather and the Sun						
Big Idea: What does the Sun do?						
Essential Question: How can you stay safe from the Sun?						
Unit 5: Weather and the Sun Module: The Sun and Earth's Surface Lesson 2: Protection from the Sun	1.PS3.1 Make observations to determine how sunlight warms Earth's surfaces (i.e. sand, soil, rocks, and water). 1.PS4.2 Conduct an investigation to describe how the path of a beam of light can be changed by interactions with different materials (i.e. light passes through, some light passes through, light changes directions, or light is blocked which can cause shadows). 1.ETS1.1 Apply an engineering design approach to identify and solve practical problems. 1.ETS1.2 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved. 1.ETS1.3 Develop a simple sketch, drawing, or physical model that communicates solutions to others.	Students will construct explanations and design solutions to reduce the warming effect of sunlight. I can explain how sunlight warms Earth's surface. Students will revisit the module phenomenon and explain how sunlight warms Earth's surface and how to stay safe from sunlight. I can explain how sunlight warms Earth's surface and how to stay safe from sunlight.	Science & Engineering Practices Analyzing and Interpreting Data Asking Questions and Defining Problems Constructing Explanations and Designing Solutions Crosscutting Concepts Cause & Effect Structure & Function	Engage: Discover the Phenomenon: Why are the girls inside the tent? Explore/Explain: Inquiry Activity (Simulation): Temperatures Throughout the Day Stay Out of the Sunlight Shade Shadow Puppets Inquiry Activity (Simulation): Temperatures Throughout the Day	Evaluate: Lesson Review- Explain the Phenomenon Module Wrap-Up: Revisit the Phenomenon Module Test: The Sun and Earth's Surface	Weeks 6-7

				Inquiry Activity (Hands-On): Light Interactions Be Sun Wise Vocabulary: protect, shade, shelter Read Aloud: A Day at the Beach Made in the Shade Leveled Readers: Melting Snow		
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Week 8 Social Studies: Culture/Holidays