

Mystery Science Alignment with Texas Essential Knowledge and Skills



Mystery Science is a hands-on curriculum that aligns with Texas Essential Knowledge and Skills for Science (TEKS) 2021.

Mystery Science's units of study contain:

- Hands-on, easy-prep activities with EVERY lesson
- Engaging, real-world investigative phenomena
- Thoughtful discussions to build background knowledge
- Assessments to evaluate comprehension
- Curated, cross-curricular extensions

Lessons that have shifted grade level due to TEKS 2021 alignment are indicated for each unit to help guide you in your teaching this 2024-2025 school year!

mystery science

Updated 08/30/2024

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All Kindergarten Units • Units may be taught in any order



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Science TEKS 2021

- K.6
- K.7
- K.8A

Scientific and Engineering Practices

- K.1E
- K.1F
- K.2B

Unit Breakdown:

- 2 Lessons & Activities
- 2 Lesson Assessments
- 2 Extension Blocks
- 1 Mini-lesson

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Science TEKS 2021

- K.8B
- K.9A
- K.9B

Scientific and Engineering Practices

- K.1E
- K.1G
- K.2B
- K.3A

Unit Breakdown:

- 4 Lessons & Activities
- 4 Lesson Assessments
- 4 Extension Blocks

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Science TEKS 2021

- K.9B
- K.10B
- K.10C

Scientific and Engineering Practices

- K.1E
- K.1F
- K.2B
- K.2C

Unit Breakdown:

- 3 Lessons & Activities
- 3 Lesson Assessments
- 3 Extension Blocks

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Science TEKS 2021

- K.12B
- K.13B

Scientific and Engineering Practices

- K.1E
- K.2B

Unit Breakdown:

- 4 Lessons & Activities
- 4 Lesson Assessments
- 4 Extension Blocks

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Science TEKS 2021

- K.12A
- K.13A
- K.13C
- K.13D


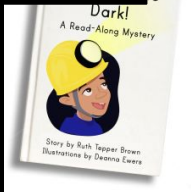
Scientific and Engineering Practices

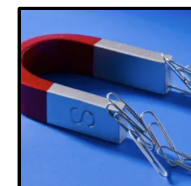
- K.1A
- K.1B
- K.1E
- K.1F
- K.1G

Unit Breakdown:

- 6 Lessons & Activities
- 6 Lesson Assessments
- 6 Extension Blocks
- 2 Mini-lessons

Light & Material Properties Unit (Light & Dark)


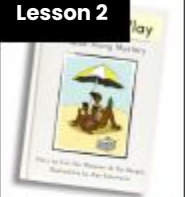


	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1</p>	<p>Light, Materials, Transparent & Opaque</p> <p>What if there were no windows?</p>	<p>Students investigate the properties of different materials that they can and cannot see through. Then they create a stained glass window using tissue paper to explore how materials interact with light.</p>	<p>K.1F Record and organize data using pictures, numbers, words, symbols, and simple graphs.</p> <p>K.2B Analyze data by identifying significant features and patterns.</p>	<p>K.8A Communicate the idea that objects can only be seen when a light source is present and compare the effects of different amounts of light on the appearance of objects.</p> <p>K.6 Identify and record observable physical properties of objects, including shape, color, texture, and material, and generate ways to classify objects.</p>
 <p>Lesson 2</p>	<p>Light & Illumination Read-Along</p> <p>Can you see in the dark?</p>	<p>Students look inside a completely dark box to determine if they can see the shape of the object inside. They allow more light into the box to illuminate the object and allow them to see it. Students use their observations explain that objects need light to be seen.</p>	<p>K.1E Collect observations and measurements as evidence.</p>	<p>K.8A Communicate the idea that objects can only be seen when a light source is present and compare the effects of different amounts of light on the appearance of objects.</p>



TEKS K.7

How are magnets made?

Sun & Shadows Unit (Day Patterns)




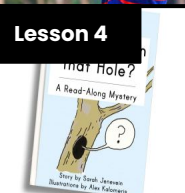
	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1</p>	<p>✓ Sun, Shadows, & Daily Patterns</p> <p>Could a statue's shadow move?</p>	<p>Students observe how shadows change as time passes, or as the Sun moves across the sky. They analyze how to move a light source to change the shape and direction of shadows, constructing an explanation of what causes a shadow to move.</p>	<p>K.2B Analyze data by identifying significant features and patterns.</p> <p>K.3A Develop explanations and propose solutions supported by data and models.</p>	<p>K.8B Demonstrate and explain that light travels through some objects and is blocked by other objects, creating shadows.</p> <p>K.9A Identify, describe, and predict the patterns of day and night and their observable characteristics.</p>
 <p>Lesson 2</p>	<p>✓ Sun, Shadows, & Daily Patterns Read-Along</p> <p>What does your shadow do when you're not looking?</p>	<p>Students conduct an investigation to gather information about how their shadow changes throughout the day.</p>	<p>K.1E Collect observations and measurements as evidence.</p> <p>K.2B Analyze data by identifying significant features and patterns.</p>	<p>K.8B Demonstrate and explain that light travels through some objects and is blocked by other objects, creating shadows.</p> <p>K.9A Identify, describe, and predict the patterns of day and night and their observable characteristics.</p>
 <p>Lesson 3</p>	<p>✓ Sun & Daily Patterns</p> <p>How can the Sun help you if you're lost?</p>	<p>Students develop a Sun Finder, a model of the Sun's movement across the sky. They use this model to reason about how the Sun can help guide them during the day.</p>	<p>K.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p>	<p>K.9A Identify, describe, and predict the patterns of day and night and their observable characteristics.</p> <p>K.9B Observe, describe, and illustrate the Sun, Moon, stars, and objects in the sky such as clouds.</p>
 <p>Lesson 4</p>	<p>✓ Daylight & Seasonal Patterns Read-Along</p> <p>Why do you have to go to bed early in the summer?</p>	<p>Students obtain information about the seasonal patterns of sunrise and sunset.</p>	<p>K.1E Collect observations and measurements as evidence.</p> <p>K.2B Analyze data by identifying significant features and patterns.</p>	<p>K.9A Identify, describe, and predict the patterns of day and night and their observable characteristics.</p>

✓ Lesson Shifted Grade for the 2024-2025 School Year

Severe Weather Unit (Wild Weather)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
<p>Lesson 1 Severe Weather & Preparation Read-Along How can you get ready for a big storm?</p>	<p>Students obtain information of different types of severe weather to observe and describe how the weather changes during these events and what students can do to prepare and stay safe.</p>	<p>K.1E Collect observations and measurements as evidence.</p>	<p>K.10B Observe and describe weather changes from day to day and over seasons.</p>	
<p>Lesson 2 Wind & Storms Have you ever watched a storm?</p>	<p>Students create a simple tool that allows them to observe how hard the wind is blowing. They use this tool to observe weather changes and describe the pattern of faster wind speeds right before a storm.</p>	<p>K.2B Analyze data by identifying significant features and patterns. K.2C Use mathematical concepts to compare two objects with common attributes.</p>	<p>K.10B Observe and describe weather changes from day to day and over seasons. K.10C Identify evidence that supports the idea that air is all around us and demonstrate that wind is moving air using items such as a windsock, pinwheel, or ribbon.</p>	
<p>Lesson 3 Weather Conditions How many different kinds of weather are there?</p>	<p>Students obtain information through observations of the weather. They communicate the information by acting as weather watchers and creating drawings of the weather conditions.</p>	<p>K.1F Record and organize data using pictures, numbers, words, symbols, and simple graphs.</p>	<p>K.10B Observe and describe weather changes from day to day and over seasons. K.9B Observe, describe, and illustrate the Sun, Moon, stars, and objects in the sky such as clouds.</p>	

Animal Needs Unit (Animal Secrets)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1</p>	<p>Animal Needs: Food</p> <p>Why do woodpeckers peck wood?</p>	<p>Students obtain information through virtual observations of different animal behaviors. They use this evidence to explain that one of the basic needs of animals is food.</p>	<p>K.2B Analyze data by identifying significant features and patterns.</p>	<p>K.12B Observe and identify the dependence of animals on air, water, food, space, and shelter.</p> <p>K.13B Identify the different structures that animals have that allow them to interact with their environment such as seeing, hearing, moving, and grasping objects.</p>
 <p>Lesson 2</p>	<p>Animal Needs: Shelter Read-Along</p> <p>Where do animals live?</p>	<p>Students obtain information through media about how different animal homes are built. They use this evidence to explain that animals need shelter.</p>	<p>K.1E Collect observations and measurements as evidence.</p>	<p>K.12B Observe and identify the dependence of animals on air, water, food, space, and shelter.</p>
 <p>Lesson 3</p>	<p>Animal Needs: Safety</p> <p>How can you find animals in the woods?</p>	<p>Students obtain information through virtual observations of different animal behaviors. They use this evidence to explain that one of the basic needs of animals is shelter.</p>	<p>K.2B Analyze data by identifying significant features and patterns.</p>	<p>K.12B Observe and identify the dependence of animals on air, water, food, space, and shelter.</p>
 <p>Lesson 4</p>	<p>Animals & Changing the Environment Read-Along</p> <p>How do animals make their homes in the forest?</p>	<p>Students take a nature walk to look for evidence of animal homes.</p>	<p>K.1E Collect observations and measurements as evidence.</p>	<p>K.12B Observe and identify the dependence of animals on air, water, food, space, and shelter.</p> <p>K.13B Identify the different structures that animals have that allow them to interact with their environment such as seeing, hearing, moving, and grasping objects.</p>


Plant Needs & Growth Unit (Plant Secrets)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
Lesson 1 	Living & Nonliving Are plants alive?	Students make observations of plants in order to identify their needs and that they are, in fact, living things.	K.1A Ask questions and define problems based on observations or information from text, phenomena, models, or investigations.	K.12A Observe and identify the dependence of plants on air, sunlight, water, nutrients in the soil, and space to grow.
Lesson 2 	Plant Needs: Water & Light How do plants and trees grow?	Students investigate to determine the basic needs of plants. They observe to identify ways young plants resemble the parent plant and how the plant changes as it proceeds through its life cycle.	K.1B Plan and conduct simple descriptive investigations and use engineering practices to design solutions to problems.	K.12A Observe and identify the dependence of plants on air, sunlight, water, nutrients in the soil, and space to grow. K.13A Identify the structures of plants, including roots, stems, leaves, flowers, and fruits. K.13C Identify and record the changes from seed, seedling, plant, flower, and fruit in a simple plant life cycle.
Lesson 3 	Human Impacts on the Environment Read-Along Why would you want an old log in your backyard?	Students obtain evidence of living organisms by virtually keeping watch of a log and the living things that visit it.	K.1E Collect observations and measurements as evidence.	K.12A Observe and identify the dependence of plants on air, sunlight, water, nutrients in the soil, and space to grow.
Lesson 4 	✓ Plant Traits & Offspring What will a baby plant look like when it grows up?	Students observe seedlings and adult plants and use their observations to identify the pattern that young plants are similar to their parent plants.	K.1F Record and organize data using pictures, numbers, words, symbols, and simple graphs.	K.13D Identify ways that young plants resemble the parent plant. K.13C Identify and record the changes from seed, seedling, plant, flower, and fruit in a simple plant life cycle.
Lesson 5 	✓ Plant Survival & Engineering Why don't trees blow down in the wind?	Students learn how plants respond to light. They conduct an investigation to compare how the parts of a plant respond to light.	K.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.	K.13A Identify the structures of plants, including roots, stems, leaves, flowers, and fruits. K.10C Identify evidence that supports the idea that air is all around us and demonstrate that wind is moving air using items such as a windsock, pinwheel, or ribbon.

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Plant Needs & Growth Unit (Plant Secrets)

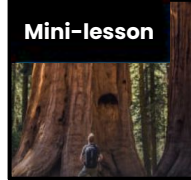
	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
Lesson 6 	✓ Plant Movement & Survival Read-Along What do sunflowers do when you're not looking?	Students learn how plants respond to light. They conduct an investigation to compare how the parts of a plant respond to light.	K.1E Collect observations and measurements as evidence.	K.13A Identify the structures of plants, including roots, stems, leaves, flowers, and fruits.



Mini-lesson

TEKS K.13A

What's the biggest apple in the world?



Mini-lesson

TEKS K.13A

What's the biggest tree in the world?

✓ Lesson Shifted Grade for the 2024-2025 School Year

All 1st Grade Units • Units may be taught in any order



Sunlight & Warmth

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Science TEKS 2021

- 1.6B
- 1.8A
- 1.8B

Scientific and Engineering Practices

- 1.1E
- 1.1G
- 1.3A

Unit Breakdown:

- 3 Lessons & Activities
- 3 Lesson Assessments
- 3 Extension Blocks
- 1 Mini-lesson



Pushes & Pulls

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Science TEKS 2021

- 1.7A
- 1.7B

Scientific and Engineering Practices

- 1.1B
- 1.1E
- 1.1G

Unit Breakdown:

- 6 Lessons & Activities
- 6 Lesson Assessments
- 6 Extension Blocks



Weather Patterns

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Science TEKS 2021

- 1.9
- 1.10D

Scientific and Engineering Practices

- 1.1F
- 1.1G
- 1.2A
- 1.2B
- 1.3A

Unit Breakdown:

- 3 Lessons & Activities
- 3 Lesson Assessments
- 3 Extension Blocks
- 2 Mini-lessons



Water & Soil

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Science TEKS 2021

- 1.6A
- 1.10A
- 1.10C
- 1.11A

Scientific and Engineering Practices

- 1.1B
- 1.1G
- 1.2A
- 1.2B

Unit Breakdown:

- 2 Lessons & Activities
- 2 Lesson Assessments
- 2 Extension Blocks
- 4 Mini-lessons



Animal Traits & Survival

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Science TEKS 2021

- 1.12C
- 1.13A
- 1.13C

Scientific and Engineering Practices

- 1.1E
- 1.1F
- 1.1G
- 1.2B
- 1.3A

Unit Breakdown:

- 5 Lessons & Activities
- 5 Lesson Assessments
- 5 Extension Blocks
- 5 Mini-lessons

Sunlight & Warmth Unit (Sunny Skies)







	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
Lesson 1 	Sunlight, Heat, & Earth's Surface Read-Along How could you walk barefoot across hot pavement without burning your feet?	Students make observations of the pavement heating up after being warmed by the Sun. Then, they design a solution to build a shade structure that can reduce the warming effect of sunlight.	1.1E Collect observations and measurements as evidence. 1.3A Develop explanations and propose solutions supported by data and models.	1.6B Explain and predict changes in materials caused by heating and cooling. 1.8B Describe how some changes caused by heat may be reversed such as melting butter and other changes cannot be reversed such as cooking an egg or baking a cake.
Lesson 2 	Sunlight, Warming, & Engineering How could you warm up a frozen playground?	Students carry out an investigation to test which materials can redirect the light and heat of sunlight. (*This lesson has students increase the warming effect of sunlight on an area.)	1.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.	1.6B Explain and predict changes in materials caused by heating and cooling. 1.8A Investigate and describe applications of heat in everyday life such as cooking food or using a hair dryer.
Lesson 3 	Sunlight & Warmth Why does it get cold in winter?	Students construct an explanation for why marshmallows melt in one car and not in another car. Then, they conduct a virtual investigation to determine that the warmth of the Sun is the cause of the melted marshmallows.	1.1E Collect observations and measurements as evidence.	1.8A Investigate and describe applications of heat in everyday life such as cooking food or using a hair dryer. 1.8B Describe how some changes caused by heat may be reversed such as melting butter and other changes cannot be reversed such as cooking an egg or baking a cake.

Mini-lesson




TEKS 1.8B


Can you make lava?

Pushes & Pulls Unit (Force Olympics)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1</p>	<p>✓ Pushes & Pulls</p> <p>What's the biggest excavator?</p>	<p>Students observe different machines and use those observations as evidence for why machines make work easier.</p>	<p>1.1E Collect observations and measurements as evidence.</p>	<p>1.7A Explain how pushes and pulls can start, stop, or change the speed or direction of an object's motion. 1.7B Plan and conduct a descriptive investigation that predicts how pushes and pulls can start, stop, or change the speed or direction of an object's motion.</p>
 <p>Lesson 2</p>	<p>✓ Pushes, Pulls, & "Work Words" Read-Along</p> <p>Why do builders need so many big machines?</p>	<p>Students observe construction equipment being used in different ways to move objects.</p>	<p>1.1E Collect observations and measurements as evidence.</p>	<p>1.7A Explain how pushes and pulls can start, stop, or change the speed or direction of an object's motion. 1.7B Plan and conduct a descriptive investigation that predicts how pushes and pulls can start, stop, or change the speed or direction of an object's motion.</p>
 <p>Lesson 3</p>	<p>✓ Motion, Speed, & Strength</p> <p>How can you knock down a wall made of concrete?</p>	<p>Students carry out an investigation to determine how far back they should pull a model wrecking ball to knock down a wall, but not the houses behind it.</p>	<p>1.1B Plan and conduct simple descriptive investigations and use engineering practices to design solutions to problems.</p>	<p>1.7A Explain how pushes and pulls can start, stop, or change the speed or direction of an object's motion. 1.7B Plan and conduct a descriptive investigation that predicts how pushes and pulls can start, stop, or change the speed or direction of an object's motion.</p>
 <p>Lesson 4</p>	<p>✓ Speed & Direction of Force Read-Along</p> <p>How can you knock down the most bowling pins?</p>	<p>Students play a game of bumper bowling to observe the way that objects can move in straight lines, zigzags, and back and forth.</p>	<p>1.1E Collect observations and measurements as evidence.</p>	<p>1.7A Explain how pushes and pulls can start, stop, or change the speed or direction of an object's motion. 1.7B Plan and conduct a descriptive investigation that predicts how pushes and pulls can start, stop, or change the speed or direction of an object's motion.</p>
 <p>Lesson 5</p>	<p>✓ Direction of Motion & Engineering</p> <p>How can we protect a mountain town from falling rocks?</p>	<p>Students conduct an investigation of how to protect a town from a falling boulder. They design a solution to safely guide the direction of the boulder away from the town.</p>	<p>1.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p>	<p>1.7A Explain how pushes and pulls can start, stop, or change the speed or direction of an object's motion. 1.7B Plan and conduct a descriptive investigation that predicts how pushes and pulls can start, stop, or change the speed or direction of an object's motion.</p>
 <p>Lesson 6</p>	<p>✓ Forces & Engineering Read-Along</p> <p>How could you invent a trap?</p>	<p>Students define a problem they would like to solve and then design a solution using what they know about the locations of objects and how they can move.</p>	<p>1.1E Collect observations and measurements as evidence.</p>	<p>1.7A Explain how pushes and pulls can start, stop, or change the speed or direction of an object's motion. 1.7B Plan and conduct a descriptive investigation that predicts how pushes and pulls can start, stop, or change the speed or direction of an object's motion.</p>

Weather Patterns Unit (Circle of Seasons)


	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
Lesson 1 	Daily Weather Patterns Read-Along How do you know what to wear for the weather?	Students track the weather daily and analyze the data by collecting, recording, and sharing their observations to observe patterns of weather changing throughout the day and from day-to-day.	1.2B Analyze data by identifying significant features and patterns. 1.3A Develop explanations and propose solutions supported by data and models.	1.10D Describe and record observable characteristics of weather, including hot or cold, clear or cloudy, calm or windy, and rainy or icy, and explain the impact of weather on daily choices.
Lesson 2 	Seasonal Weather Patterns What will the weather be like on your birthday?	Students evaluate information in a series of unnamed drawings of each season. They use these clues to identify characteristics of each season and describe the yearly cyclical pattern.	1.1F Record and organize data using pictures, numbers, words, symbols, and simple graphs. 1.2B Analyze data by identifying significant features and patterns..	1.9 Describe and predict the patterns of seasons of the year such as order of occurrence and changes in nature.
Lesson 3 	Animals Changing Their Environment Why do birds lay eggs in the spring?	Students identify the reasons why birds lay eggs in the spring. Then, they develop a bird nest model and use this model as evidence for how animals can change the environment to meet their needs.	1.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem. 1.2A Identify basic advantages and limitations of models such as their size, properties, and materials.	1.9 Describe and predict the patterns of seasons of the year such as order of occurrence and changes in nature.



Mini-lesson

TEKS 1.9

Why do leaves change color in the fall?





Mini-lesson

TEKS 1.9

Does any place not have fall?


Water & Soil Unit (Land & Sea)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
Lesson 1 	Mapping & Earth's Surface Features If you floated down a river, where would you end up?	Students develop a model of the Earth's surface and use it to discover an important principle about how rivers work: rivers flow downhill, from high places to low places.	1.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem. 1.2B Analyze data by identifying significant features and patterns.	1.10C Compare the properties of puddles, ponds, streams, rivers, lakes, and oceans, including color, clarity, size, shape, and whether it is freshwater or saltwater.
Lesson 2 	Soil Properties How do you build a city out of mud?	Students conduct an investigation where they examine three different soil models. They use this information to determine which type of soil has the properties that will result in the best mud that can be used to build a house.	1.1B Plan and conduct simple descriptive investigations and use engineering practices to design solutions to problems. 1.2A Identify basic advantages and limitations of models such as their size, properties, and materials.	1.6A Classify objects by observable physical properties, including shape, color, and texture, and attributes such as larger and smaller and heavier and lighter. 1.10A Investigate and document the properties of particle size, shape, texture, and color and the components of different types of soils such as topsoil, clay, and sand. 1.11A Identify and describe how plants, animals, and humans use rocks, soil, and water.

Mini-lesson

TEKS 1.10C


How deep does the ocean go?



Mini-lesson

TEKS 1.10C


What's at the bottom of the ocean?



Mini-lesson

TEKS 1.11A


Where does salt come from?








Mini-lesson

TEKS 1.11A


How is glass made?





Animal Traits & Survival Unit (Animal Superpowers)


	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
Lesson 1 	Parent & Offspring Traits How can you help a lost baby animal find its parents?	Students observe the traits of adult and baby animals in order to construct an explanation that most young animals are like, but not exactly like, their parents.	1.1F Record and organize data using pictures, numbers, words, symbols, and simple graphs.	1.13C Compare ways that young animals resemble their parents.
Lesson 2 	Animal Structures & Survival Why do birds have beaks?	Students investigate how different bird beaks are well suited for eating different kinds of food. They explain which beak would help a particular bird survive in a particular environment.	1.1F Record and organize data using pictures, numbers, words, symbols, and simple graphs. 1.2B Analyze data by identifying significant features and patterns.	1.12C Identify and illustrate how living organisms depend on each other through food chains. 1.13A Identify the external structures of different animals and compare how those structures help different animals live, move, and meet basic needs for survival.
Lesson 3 	Animal Behavior & Offspring Survival Read-Along Why do baby ducks follow their mother?	Students obtain information about the behaviors of animal parents that help their offspring survive.	1.1E Collect observations and measurements as evidence.	1.13C Compare ways that young animals resemble their parents.
Lesson 4 	Camouflage & Animal Survival Why are polar bears white?	Students use observations of animal parents and their offspring to construct an explanation about young plants and animals being similar, but not identical, to their parents.	1.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem. 1.3A Develop explanations and propose solutions supported by data and models.	1.13A Identify the external structures of different animals and compare how those structures help different animals live, move, and meet basic needs for survival.
Lesson 5 	Inheritance & Variation of Traits Read-Along Why do family members look alike?	Students identify parts of plants such as roots, branches, and leaves. They evaluate these plant parts and apply that information to design an umbrella that won't blow down in the wind.	1.1E Collect observations and measurements as evidence.	1.13C Compare ways that young animals resemble their parents.


Animal Traits & Survival Unit (Animal Superpowers)

Mini-lesson  **TEKS 1.13A**
Why are butterflies so colorful?

Mini-lesson  **TEKS 1.13A**
What is the biggest spider in the world?

Mini-lesson  **TEKS 1.12C**
Why are flamingos pink?

Mini-lesson  **TEKS 1.13A**
Why do penguins have wings if they don't fly?

Mini-lesson  **TEKS 1.12C**
Do bats really drink blood?

All 2nd Grade Units • Units may be taught in any order



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Science TEKS 2021

- 2.6A
- 2.6B
- 2.6C

Scientific and Engineering Practices

- 2.1A
- 2.1B
- 2.1F
- 2.1G
- 2.2B
- 2.2D

Unit Breakdown:

- 5 Lessons & Activities
- 5 Lesson Assessments
- 5 Extension Blocks
- 1 Mini-lesson

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Science TEKS 2021

- 2.8A
- 2.8B
- 2.8C

Scientific and Engineering Practices

- 2.1A
- 2.1E
- 2.1G
- 2.2D

Unit Breakdown:

- 4 Lessons & Activities
- 4 Lesson Assessments
- 4 Extension Blocks
- 1 Mini-lesson

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Science TEKS 2021

- 2.9A
- 2.9B

Scientific and Engineering Practices

- 2.1A
- 2.1E
- 2.1F
- 2.1G
- 2.2B

Unit Breakdown:

- 3 Lessons & Activities
- 3 Lesson Assessments
- 3 Extension Blocks
- 2 Mini-lessons

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Science TEKS 2021

- 2.10A
- 2.11A

Scientific and Engineering Practices

- 2.1E
- 2.1G

Unit Breakdown:

- 1 Lesson & Activity
- 1 Lesson Assessment
- 1 Extension Block
- 5 Mini-lessons

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Science TEKS 2021

- 2.10B
- 2.10C

Scientific and Engineering Practices

- 2.1B
- 2.1F
- 2.1G
- 2.2B

Unit Breakdown:

- 3 Lessons & Activities
- 3 Lesson Assessments
- 3 Extension Blocks
- 3 Mini-lessons

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Science TEKS 2021

- 2.12A
- 2.12B
- 2.13B
- 2.13C
- 2.13D

Scientific and Engineering Practices

- 2.1E
- 2.1F
- 2.2B
- 2.2C
- 2.2D
- 2.3A

Unit Breakdown:

- 5 Lessons & Activities
- 5 Lesson Assessments
- 5 Extension Blocks
- 4 Mini-lessons

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Science TEKS 2021

- 2.12A
- 2.12C
- 2.13A






Scientific and Engineering Practices


- 2.1B
- 2.1F
- 2.1G
- 2.2B

Unit Breakdown:

- 4 Lessons & Activities
- 4 Lesson Assessments
- 4 Extension Blocks

Material Properties Unit (Material Magic)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
Lesson 1 	Material Properties & Engineering Why do we wear clothes?	Students investigate different material properties, such as flexibility and absorbency, and use those properties to design and build a hat that protects them from the sun.	2.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem. 2.2D Evaluate a design or object using criteria to determine if it works as intended.	2.6A Classify matter by observable physical properties, including texture, flexibility, and relative temperature, and identify whether a material is a solid or liquid.
Lesson 2 	Classify Materials: Insulators Can you really fry an egg on a hot sidewalk?	Students conduct an investigation of conductors and insulators in order to determine which are best suited for allowing people to handle hot items.	2.1F Record and organize data using pictures, numbers, words, symbols, and simple graphs. 2.2B Analyze data by identifying significant features and patterns.	2.6B Conduct a descriptive investigation to explain how physical properties can be changed through processes such as cutting, folding, sanding, melting, or freezing.
Lesson 3 	Heating, Cooling, & Phases of Matter Why are so many toys made out of plastic?	Student conduct an investigation of different materials in order to determine which are most and least easily melted.	2.1F Record and organize data using pictures, numbers, words, symbols, and simple graphs. 2.2B Analyze data by identifying significant features and patterns.	2.6B Conduct a descriptive investigation to explain how physical properties can be changed through processes such as cutting, folding, sanding, melting, or freezing.
Lesson 4 	Inventions & Engineering What materials might be invented in the future?	Students design a new invention that takes advantage of the unique properties of a futuristic material.	2.1A Ask questions and define problems based on observations or information from text, phenomena, models, or investigations.	2.6A Classify matter by observable physical properties, including texture, flexibility, and relative temperature, and identify whether a material is a solid or liquid.
Lesson 5 	Materials, Properties, & Engineering Could you build a house out of paper?	Students construct an evidence-based account of how a structure built of paper can be disassembled and rebuilt in new ways.	2.1B Plan and conduct simple descriptive investigations and use engineering practices to design solutions to problems. 2.2D Evaluate a design or object using criteria to determine if it works as intended.	2.6B Conduct a descriptive investigation to explain how physical properties can be changed through processes such as cutting, folding, sanding, melting, or freezing. 2.6C Demonstrate that small units such as building blocks can be combined or reassembled to form new objects for different purposes and explain the materials chosen based on their physical properties.



Mini-lesson

TEKS 2.6C

How were LEGO bricks invented?

Sound & Communication Unit (Sounds All Around)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
<p>Lesson 1</p>	<p>✓ Sounds & Vibrations</p> <p>How do they make silly sounds in cartoons?</p>	<p>Students explore how to make different sounds with everyday objects. They construct an explanation that objects vibrate when they make a sound, and if the vibration stops, the sound stops as well.</p>	<p>2.1E Collect observations and measurements as evidence.</p>	<p>2.8A Demonstrate and explain that sound is made by vibrating matter and that vibrations can be caused by a variety of means, including sound.</p> <p>2.8B Explain how different levels of sound are used in everyday life such as a whisper in a classroom or a fire alarm.</p>
<p>Lesson 2</p>	<p>✓ Sounds & Vibrations Read-Along</p> <p>Where do sounds come from?</p>	<p>Students create three different sound makers and construct an explanation about where the vibrations are happening in each sound experiment.</p>	<p>2.1A Ask questions and define problems based on observations or information from text, phenomena, models, or investigations.</p>	<p>2.8A Demonstrate and explain that sound is made by vibrating matter and that vibrations can be caused by a variety of means, including sound.</p> <p>2.8B Explain how different levels of sound are used in everyday life such as a whisper in a classroom or a fire alarm.</p>
<p>Lesson 3</p>	<p>✓ Light, Communication, & Engineering</p> <p>How could you send a secret message to someone far away?</p>	<p>Students are presented with the problem that they need to send a message at night, without using noise. They design a solution to create a color-coded message system and communicate with light signals.</p>	<p>2.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p> <p>2.2D Evaluate a design or object using criteria to determine if it works as intended.</p>	<p>2.8C Design and build a device using tools and materials that uses sound to solve the problem of communicating over a distance.*</p> <p>*Students design a device that uses light to communicate over a distance in this lesson</p>
<p>Lesson 4</p>	<p>✓ Lights, Sounds, & Communication Read-Along</p> <p>How do boats find their way in the fog?</p>	<p>Students obtain information about light and sound signals. They analyze different sounds with their eyes closed to determine which type of sound they hear.</p>	<p>2.1A Ask questions and define problems based on observations or information from text, phenomena, models, or investigations.</p>	<p>2.8C Design and build a device using tools and materials that uses sound to solve the problem of communicating over a distance.</p>

Mini-lesson

TEKS 2.8A

How do cicadas make so much noise?

✓ Lesson Shifted Grade for the 2024-2025 School Year

Night Patterns Unit (Moon & Stars)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
Lesson 1 	Moon Phases & Patterns When can you see the full moon?	Students record observations of the Moon's shape using a series of photos collected over the course of four weeks. Using this information, students discover that the Moon follows a cyclical pattern, which they can use to predict when a full moon will appear.	2.1F Record and organize data using pictures, numbers, words, symbols, and simple graphs. 2.2B Analyze data by identifying significant features and patterns.	2.9A Describe the Sun as a star that provides light and heat and explain that the Moon reflects the Sun's light.
Lesson 2 	Stars & Daily Patterns Why do stars come out at night?	Students develop and use a model of the Big Dipper in the night sky. After conducting a simple investigation, students construct an explanation for why stars are only visible in the night sky.	2.1E Collect observations and measurements as evidence. 2.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.	2.9A Describe the Sun as a star that provides light and heat and explain that the Moon reflects the Sun's light. 2.9B Observe and compare how objects in the sky are more visible and can appear different with a telescope than with an unaided eye.
Lesson 3 	Stars & Seasonal Patterns Read-Along How can stars help you if you get lost?	Students observe that groups of stars in the sky form a pattern: constellations. Even though the Big Dipper changes its spot in the sky in different seasons, it always points to the North Star.	2.1A Ask questions and define problems based on observations or information from text, phenomena, models, or investigations.	2.9B Observe and compare how objects in the sky are more visible and can appear different with a telescope than with an unaided eye.

Mini-lesson

TEKS 2.9B


Who created the constellations?


Mini-lesson

TEKS 2.9A

What would it be like to live on the Moon?

Earth Materials Unit (Rocks & Minerals)


	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
Lesson 1 	Rocks, Sand, & Erosion Why is there sand at the beach?	Students investigate the effects of rocks tumbling in a river. Based on their observations, they construct an explanation for why rocks on the top of mountains are much bigger than the sand at the beach.	2.1E Collect observations and measurements as evidence. 2.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.	2.10A Investigate and describe how wind and water move soil and rock particles across the Earth's surface such as wind blowing sand into dunes on a beach or a river carrying rocks as it flows.



Mini-lesson

TEKS 2.10A


Why is the ocean salty?



Mini-lesson

TEKS 2.11A


Where does metal come from?



Mini-lesson

TEKS 2.11A


How are diamonds made?



Mini-lesson

TEKS 2.11A

How is gold made?







Mini-lesson

TEKS 2.11A

How is plastic made?

Weather & Storms Unit (Stormy Skies)


	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
Lesson 1 	✓ Local Weather Patterns & Weather Prediction How can we predict when it's going to storm?	Students make observations of clouds and develop a tool to make predictions about what kind of weather might happen next.	2.1F Record and organize data using pictures, numbers, words, symbols, and simple graphs.	2.10B Measure, record, and graph weather information, including temperature and precipitation.
Lesson 2 	✓ Mapping & Severe Weather Where do flash floods happen?	Students use a model (i.e. a map) to examine the different factors, including the shapes and kinds of land, that contribute to flash floods. They use this to predict where flash floods are most likely to happen.	2.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem. 2.2B Analyze data by identifying significant features and patterns.	2.10C Investigate different types of severe weather events such as a hurricane, tornado, or flood and explain that some events are more likely than others in a given region.
Lesson 3 	✓ Natural Hazards & Engineering How can you keep a house from blowing away in a windstorm?	Students design and build solutions that reduce the hazards associated with strong winds that could damage buildings.	2.1B Plan and conduct simple descriptive investigations and use engineering practices to design solutions to problems.	2.10C Investigate different types of severe weather events such as a hurricane, tornado, or flood and explain that some events are more likely than others in a given region.



Mini-lesson

TEKS 2.10C


Why are tornadoes so hard to predict?



Mini-lesson

TEKS 2.10C

What makes hurricanes so dangerous?



Mini-lesson






TEKS 2.10C

What's worse: a hurricane or a tornado?

✓ Lesson Shifted Grade for the 2024-2025 School Year

mysteryscience.com/docs/texas


Animal Biodiversity Unit (Animal Adventures)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1</p>	<p>Biodiversity & Classification</p> <p>How many different kinds of animals are there?</p>	<p>Students observe the traits of different animals and use that information to organize them into groups based on their characteristics.</p>	<p>2.1F Record and organize data using pictures, numbers, words, symbols, and simple graphs.</p>	<p>2.13B Record and compare how the structures and behaviors of animals help them find and take in food, water, and air.</p>
 <p>Lesson 2</p>	<p>✓ Habitat Diversity</p> <p>Why would a wild animal visit a playground?</p>	<p>Students observe animals, plants, and the physical characteristics of two different habitats. They collect and analyze data to compare the biodiversity between the two habitats.</p>	<p>2.2B Analyze data by identifying significant features and patterns.</p> <p>2.2C Use mathematical concepts to compare two objects with common attributes.</p>	<p>2.12A Describe how the physical characteristics of environments, including the amount of rainfall, support plants and animals within an ecosystem.</p>
 <p>Lesson 3</p>	<p>✓ Animal Groups & Survival</p> <p>Why do dogs wag their tails?</p>	<p>Students observe animals that live in groups in order to obtain, evaluate, and communicate information about animal social behavior. Students use evidence to show how animals form groups to help them survive.</p>	<p>2.1E Collect observations and measurements as evidence.</p> <p>2.1F Record and organize data using pictures, numbers, words, symbols, and simple graphs.</p>	<p>2.13C Record and compare how being part of a group helps animals obtain food, defend themselves, and cope with changes.</p>
 <p>Lesson 4</p>	<p>Biodiversity, Habitats, & Species</p> <p>Why do frogs say “ribbit”?</p>	<p>Students identify frogs based on their unique calls and use that information to determine the level of frog species diversity within multiple habitats.</p>	<p>2.1F Record and organize data using pictures, numbers, words, symbols, and simple graphs.</p> <p>2.2C Use mathematical concepts to compare two objects with common attributes.</p>	<p>2.13B Record and compare how the structures and behaviors of animals help them find and take in food, water, and air.</p>
 <p>Lesson 5</p>	<p>Biodiversity & Engineering</p> <p>How could you get more birds to visit a bird feeder?</p>	<p>Students investigate which kinds of birds are likely to visit a bird feeder based on what they eat and design and build a prototype bird feeder that attracts a specific type of bird.</p>	<p>2.2D Evaluate a design or object using criteria to determine if it works as intended.</p> <p>2.3A Develop explanations and propose solutions supported by data and models.</p>	<p>2.12B Create and describe food chains identifying producers and consumers to demonstrate how animals depend on other living things.</p> <p>2.13B Record and compare how the structures and behaviors of animals help them find and take in food, water, and air.</p>

✓ Lesson Shifted Grade for the 2024–2025 School Year

Animal Biodiversity Unit (Animal Adventures)

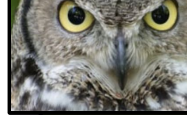
Mini-lesson



TEKS 2.13D

Are butterflies the only animals that start out as caterpillars?


Mini-lesson



TEKS 2.13B

Why do owls say "hoo"?


Mini-lesson



TEKS 2.13B

Why can't fish breathe on land?





Mini-lesson



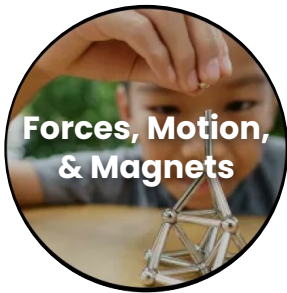
TEKS 2.13B

Can animals get a sunburn?

Plant Adaptations Unit (Plant Adventures)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1</p>	<p>Seed Dispersal</p> <p>How did a tree travel halfway around the world?</p>	<p>Students develop physical models of seed structures. They observe how structure affects the seed's function in dispersing away from the tree.</p>	<p>2.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p>	<p>2.12C Explain and demonstrate how some plants depend on other living things, wind, or water for pollination and to move their seeds around. 2.13A Identify the roots, stems, leaves, flowers, fruits, and seeds of plants and compare how those structures help different plants meet their basic needs for survival.</p>
 <p>Lesson 2</p>	<p>Animal Seed Dispersal</p> <p>Why do seeds have so many different shapes?</p>	<p>Students develop a model of a furry animal and then use it to test how far seed models with different structures can travel.</p>	<p>2.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem. 2.2B Analyze data by identifying significant features and patterns;</p>	<p>2.12C Explain and demonstrate how some plants depend on other living things, wind, or water for pollination and to move their seeds around. 2.13A Identify the roots, stems, leaves, flowers, fruits, and seeds of plants and compare how those structures help different plants meet their basic needs for survival.</p>
 <p>Lesson 3</p>	<p>Water, Sunlight, & Plant Growth</p> <p>Could a plant survive without light?</p>	<p>Students conduct an investigation to determine that plants need water and light to grow.</p>	<p>2.1B Plan and conduct simple descriptive investigations and use engineering practices to design solutions to problems.</p>	<p>2.13A Identify the roots, stems, leaves, flowers, fruits, and seeds of plants and compare how those structures help different plants meet their basic needs for survival. 2.12A Describe how the physical characteristics of environments, including the amount of rainfall, support plants and animals within an ecosystem.</p>
 <p>Lesson 4</p>	<p>Plant Needs & Habitats</p> <p>How much water should you give a plant?</p>	<p>Students plan and conduct a series of virtual experiments in order to determine how much water and sunlight a set of mystery plants need in order to stay healthy and survive.</p>	<p>2.1F Record and organize data using pictures, numbers, words, symbols, and simple graphs.</p>	<p>2.12A Describe how the physical characteristics of environments, including the amount of rainfall, support plants and animals within an ecosystem.</p>

3rd Grade Units (pg 1 of 2) • Units may be taught in any order



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Science TEKS 2021

- 3.7A
- 3.7B

Scientific and Engineering Practices

- 3.1B
- 3.1E
- 3.1G
- 3.2B
- 3.2D

Unit Breakdown:

- 5 Lessons & Activities
- 5 Lesson Assessments
- 5 Extension Blocks



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Science TEKS 2021

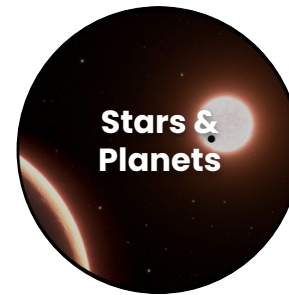
- 3.8A
- 3.8B

Scientific and Engineering Practices

- 3.1E
- 3.1G
- 3.2B
- 3.3A

Unit Breakdown:

- 2 Lessons & Activities
- 2 Lesson Assessments
- 2 Extension Blocks



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Science TEKS 2021

- 3.9A
- 3.9B

Scientific and Engineering Practices

- 3.1E
- 3.1G
- 3.3B
- 3.3C

Unit Breakdown:

- 2 Lessons & Activities
- 2 Lesson Assessments
- 2 Extension Blocks
- 6 Mini-lessons



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Science TEKS 2021

- 3.10C

Scientific and Engineering Practices

- 3.1F
- 3.1G
- 3.2A
- 3.2B
- 3.3B

Unit Breakdown:

- 3 Lessons & Activities
- 3 Lesson Assessments
- 3 Extension Blocks
- 1 Mini-lesson

3rd Grade Units (pg 2 of 2) • Units may be taught in any order



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Science TEKS 2021

- 3.10A
- 3.12A
- 3.13A

Scientific and Engineering Practices

- 3.1F
- 3.2B

Unit Breakdown:

- 1 Lessons & Activity
- 1 Lesson Assessment
- 1 Extension Block
- 4 Mini-lessons



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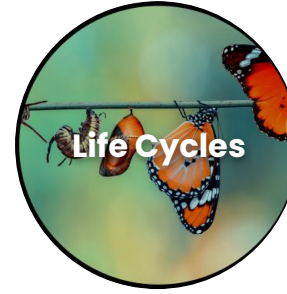
- 3.12B
- 3.12D

Scientific and Engineering Practices

- 3.1E
- 3.1G
- 3.2B
- 3.2C
- 3.3B
- 3.3C

Unit Breakdown:

- 4 Lessons & Activities
- 4 Lesson Assessments
- 4 Extension Blocks
- 1 Mini-lesson



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Science TEKS 2021

- 3.12C
- 3.13B

Scientific and Engineering Practices

- 3.1F
- 3.1G
- 3.2B
- 3.3A
- 3.3B
- 3.3C

Unit Breakdown:

- 5 Lessons & Activities
- 5 Lesson Assessments
- 5 Extension Blocks



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Science TEKS 2021

- 3.13A

Scientific and Engineering Practices

- 3.1G
- 3.2A
- 3.2B



Unit Breakdown:

- 2 Lessons & Activities
- 2 Lesson Assessments
- 2 Extension Blocks
- 4 Mini-lessons



Forces, Motion, & Magnets Unit (Invisible Forces)

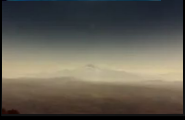
	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
<p>Lesson 1</p>	<p>Balanced & Unbalanced Forces</p> <p>How could you win a tug-of-war against a bunch of adults?</p>	<p>Students develop a mental model of the nature of forces and motion and use that model to explain the behavior of an elastic jumper.</p>	<p>3.1B Plan and conduct descriptive investigations and use engineering practices to design solutions to problems.</p>	<p>3.7B Plan and conduct a descriptive investigation to demonstrate and explain how position and motion can be changed by pushing and pulling objects such as swings, balls, and wagons.</p>
<p>Lesson 2</p>	<p>Balanced Forces & Engineering</p> <p>What makes bridges so strong?</p>	<p>Students develop and design a bridge to be as strong as possible while working with limited materials.</p>	<p>3.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p> <p>3.2D Evaluate a design or object using criteria.</p>	<p>3.7B Plan and conduct a descriptive investigation to demonstrate and explain how position and motion can be changed by pushing and pulling objects such as swings, balls, and wagons.</p>
<p>Lesson 3</p>	<p>Patterns of Motion, Gravity, & Friction</p> <p>How high can you swing on a flying trapeze?</p>	<p>Students explore the patterns of motion of a trapeze. They build their own model of a trapeze, observe patterns of how it moves, and make predictions.</p>	<p>3.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p> <p>3.2B Analyze data by identifying any significant features, patterns, or sources of error.</p>	<p>3.7B Plan and conduct a descriptive investigation to demonstrate and explain how position and motion can be changed by pushing and pulling objects such as swings, balls, and wagons.</p>
<p>Lesson 4</p>	<p>Magnets & Forces</p> <p>What can magnets do?</p>	<p>Students investigate the properties of magnets and the fact that they exert forces that act at a distance.</p>	<p>3.1E Collect observations and measurements as evidence.</p>	<p>3.7A Demonstrate and describe forces acting on an object in contact or at a distance, including magnetism, gravity, and pushes and pulls.</p>
<p>Lesson 5</p>	<p>Magnets & Engineering</p> <p>How can you unlock a door using a magnet?</p>	<p>Students investigate magnetic attraction and repulsion, and design a magnetic lock in the hands-on activity.</p>	<p>3.1B Plan and conduct descriptive investigations and use engineering practices to design solutions to problems.</p> <p>3.2D Evaluate a design or object using criteria.</p>	<p>3.7A Demonstrate and describe forces acting on an object in contact or at a distance, including magnetism, gravity, and pushes and pulls.</p>

Energy & Speed Unit

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
Lesson 1 	Speed & Energy How is your body similar to a car?	Students learn about stored energy and about the relationship between motion and energy. Students build models of an amusement park ride and discover how energy can be stored in materials. Stored energy can be converted to speed.	3.1E Collect observations and measurements as evidence. 3.2B Analyze data by identifying any significant features, patterns, or sources of error.	3.8A Identify everyday examples of energy, including light, sound, thermal, and mechanical. 3.8B Plan and conduct investigations that demonstrate how the speed of an object is related to its mechanical energy.
Lesson 2 	Gravitational Energy, Speed, & Collisions What makes roller coasters go so fast?	Students build a model of a roller coaster and carry out an investigation using marbles. Students learn that lifting an object up stores energy in the object. When the object falls, that stored energy is released. They realize that energy is transferred when objects collide.	3.3A Develop explanations and propose solutions supported by data and models. 3.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.	3.8A Identify everyday examples of energy, including light, sound, thermal, and mechanical. 3.8B Plan and conduct investigations that demonstrate how the speed of an object is related to its mechanical energy.

Stars & Planets Unit (Our Solar System)

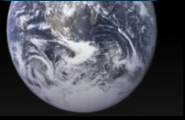
	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1 Solar System & Sun Brightness How can the Sun help us explore other planets?</p>	<p>Students gather evidence to support an argument that the apparent brightness of the Sun is dependent upon an observer's distance from the Sun. They construct a model of the solar system and gather observations of the Sun's apparent brightness from each planet within their model.</p>	<p>3.1E Collect observations and measurements as evidence.</p> <p>3.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p>	<p>3.9B Identify the sequence of the planets in Earth's solar system in relation to the Sun.</p>	
 <p>Lesson 2 Star Brightness & Habitable Planets Could there be life on other planets?</p>	<p>Students discover that the Earth is in the "Goldilocks Zone" — a distance from the Sun with the right amount of light and heat for life to exist. Students evaluate other solar systems, comparing their stars to our Sun. Based on their analysis, students plan a space mission to a planet with conditions similar to those on Earth.</p>	<p>3.3B Communicate explanations and solutions individually and collaboratively in a variety of settings and formats.</p> <p>3.3C Listen actively to others' explanations to identify relevant evidence and engage respectfully in scientific discussion.</p>	<p>3.9B Identify the sequence of the planets in Earth's solar system in relation to the Sun.</p>	



Mini-lesson

TEKS 3.9A

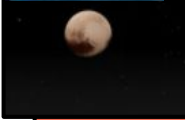
Why does it get dark during a solar eclipse?



Mini-lesson

TEKS 3.9B

Is Earth the only planet with life?



Mini-lesson

TEKS 3.9B

Is Pluto a planet?



Mini-lesson

TEKS 3.9A


Why does the Moon turn blood red during a lunar eclipse?



Mini-lesson

TEKS 3.9B

Why is Mars red?






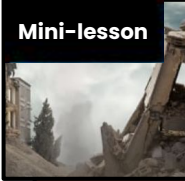
Mini-lesson

TEKS 3.9B

Why isn't Pluto a major planet anymore?

Rapid Changes to Earth’s Surface Unit (Volcanoes & Landslides)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
	<p>Volcanoes & Patterns of Earth’s Features</p> <p>Could a volcano pop up where you live?</p>	<p>Students use coordinates to develop a map of volcanoes to discover a pattern of where volcanoes exist on Earth. Students identify the pattern of volcanoes in the “Ring of Fire.”</p>	<p>3.1F Construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect.</p> <p>3.2B Analyze data by identifying any significant features, patterns, or sources of error.</p>	<p>3.10C Model and describe rapid changes in Earth’s surface such as volcanic eruptions, earthquakes, and landslides.</p>
	<p>Volcanoes & Rock Cycle</p> <p>Why do some volcanoes explode?</p>	<p>Students investigate the properties of thin and thick lava by attempting to create air bubbles. Students realize that thick lava will cause a volcano to explode, while thin lava will not.</p>	<p>3.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p> <p>3.2A Identify advantages and limitations of models such as their size, scale, properties, and materials.</p>	<p>3.10C Model and describe rapid changes in Earth’s surface such as volcanic eruptions, earthquakes, and landslides.</p>
	<p>Erosion, Natural Hazards, & Engineering</p> <p>How could you survive a landslide?</p>	<p>Students generate multiple possible solutions to protect homes from a landslide. Students realize that there are many causes for the erosion that causes rocks to fall in landslides.</p>	<p>3.3B Communicate explanations and solutions individually and collaboratively in a variety of settings and formats.</p>	<p>3.10C Model and describe rapid changes in Earth’s surface such as volcanic eruptions, earthquakes, and landslides.</p>




Mini-lesson


TEKS 3.10C

How do earthquakes happen?

Weather & Animals Unit (Weather & Animals)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
<p>Lesson 1</p> 	<p>Seasonal Weather Patterns</p> <p>Where's the best place to build a snow fort?</p>	<p>Students gather winter temperature data from three different towns. They represent the data in a table to compare the weather and decide which town is the best candidate to host a snow fort festival in future years.</p>	<p>3.1F Construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect.</p> <p>3.2B Analyze data by identifying any significant features, patterns, or sources of error.</p>	<p>3.10A Compare and describe day-to-day weather in different locations at the same time, including air temperature, wind direction, and precipitation.</p>


Mini-lesson



TEKS 3.13A

How do polar animals survive the cold?


Mini-lesson



TEKS 3.12A

Where do bugs go in winter?


Mini-lesson



TEKS 3.12A

Why do bears hibernate?





Mini-lesson




TEKS3.12A

Why do animals come back after going to warm places in the winter?

Fossils & Food Chains Unit (Animals Through Time)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1</p>	<p>✓ Habitats, Fossils, & Environments Over Time</p> <p>Where can you find whales in a desert?</p>	<p>Students explore the idea that the rock under our feet sometimes contains fossils, and investigate how these fossils reveal changes in habitats through time.</p>	<p>3.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p> <p>3.2B Analyze data by identifying any significant features, patterns, or sources of error.</p>	<p>3.12D Identify fossils as evidence of past living organisms and environments, including common Texas fossils.</p>
 <p>Lesson 2</p>	<p>✓ Fossil Evidence & Dinosaurs</p> <p>How do we know what dinosaurs looked like?</p>	<p>Students learn how we can infer what the outside of an animal looked like by using clues about their skeleton.</p>	<p>3.1E Collect observations and measurements as evidence.</p>	<p>3.12D Identify fossils as evidence of past living organisms and environments, including common Texas fossils.</p>
 <p>Lesson 3</p>	<p>✓ Fossil Evidence, Trace Fossils, & Animal Behavior</p> <p>Can you outrun a dinosaur?</p>	<p>Students learn how fossilized animal tracks can tell us a great deal about the animals that left them.</p>	<p>3.2C Use mathematical calculations to compare patterns and relationships.</p> <p>3.3C Listen actively to others' explanations to identify relevant evidence and engage respectfully in scientific discussion.</p>	<p>3.12D Identify fossils as evidence of past living organisms and environments, including common Texas fossils.</p>
 <p>Lesson 4</p>	<p>✓ Food Webs & Flow of Energy</p> <p>Why did the dinosaurs go extinct?</p>	<p>Students develop a model of a dinosaur food web. Students realize that blocking the Sun's energy would have disastrous effects on the organisms that rely on this energy in the food web and cause the extinction of some entire species.</p>	<p>3.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p> <p>3.3B Communicate explanations and solutions individually and collaboratively in a variety of settings and formats.</p>	<p>3.12B Identify and describe the flow of energy in a food chain and predict how changes in a food chain such as removal of frogs from a pond or bees from a field affect the ecosystem.</p>



Mini-lesson

TEKS 3.12D

Were dragons ever real?



✓ Lesson Shifted Grade for the 2024-2025 School Year

Life Cycles Unit (Circle of Life)


	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
<p>Lesson 1</p>	<p>Animal Life Cycles</p> <p>How is your life like an alligator's life?</p>	<p>Students create models of several different animal life cycles and compare them to one another. They use these models to discover the pattern that all animals are born, grow, can have babies, and eventually die.</p>	<p>3.1F Construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect.</p>	<p>3.13B Explore, illustrate, and compare life cycles in organisms such as beetles, crickets, radishes, or lima beans.</p>
<p>Lesson 2</p>	<p>Environmental Change & Engineering</p> <p>What's the best way to get rid of mosquitoes?</p>	<p>Students obtain and evaluate information about mosquitoes from different sources. They analyze and interpret information about the mosquito life cycle to reduce the number of mosquitoes that live in a certain area.</p>	<p>3.3A Develop explanations and propose solutions supported by data and models.</p> <p>3.3B Communicate explanations and solutions individually and collaboratively in a variety of settings and formats.</p>	<p>3.13B Explore, illustrate, and compare life cycles in organisms such as beetles, crickets, radishes, or lima beans.</p> <p>3.12C Describe how natural changes to the environment such as floods and droughts cause some organisms to thrive and others to perish or move to new locations.</p>
<p>Lesson 3</p>	<p>✓ Pollination & Plant Reproduction</p> <p>Why do plants grow flowers?</p>	<p>Students model the structure and function of flower parts that are responsible for creating seeds.</p>	<p>3.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p>	<p>3.13B Explore, illustrate, and compare life cycles in organisms such as beetles, crickets, radishes, or lima beans.</p>
<p>Lesson 4</p>	<p>✓ Fruit, Seeds, & Plant Reproduction</p> <p>Why do plants give us fruit?</p>	<p>Students explore the function of fruits in plants and practice classification.</p>	<p>3.3C Listen actively to others' explanations to identify relevant evidence and engage respectfully in scientific discussion.</p>	<p>3.13B Explore, illustrate, and compare life cycles in organisms such as beetles, crickets, radishes, or lima beans.</p>
<p>Lesson 5</p>	<p>Plant Life Cycles</p> <p>Why are there so many different kinds of flowers?</p>	<p>Students play a game that models the stages of the plant life cycle. After playing the game students use the model to show how changes to one part of the life cycle affect all other stages.</p>	<p>3.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p> <p>3.2B Analyze data by identifying any significant features, patterns, or sources of error.</p>	<p>3.13B Explore, illustrate, and compare life cycles in organisms such as beetles, crickets, radishes, or lima beans.</p>

✓ Lesson Shifted Grade for the 2024-2025 School Year

Human Body Unit (Human Machine)


	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1 Muscles & Skeleton</p> <p>Why do your biceps bulge?</p>	<p>Students construct a model of the human hand to explain how muscles pull on bones to create movement.</p>	<p>3.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem. 3.2A Identify advantages and limitations of models such as their size, scale, properties, and materials.</p>	<p>3.13A Explore and explain how external structures and functions of animals such as the neck of a giraffe or webbed feet on a duck enable them to survive in their environment.</p>	
 <p>Lesson 2 Brain, Nerves, & Information Processing</p> <p>How does your brain control your body?</p>	<p>Students investigate how their own brain works by testing their reflexes. They discover that the brain receives information from the senses, processes the information, and sends signals to the muscles to enable movement.</p>	<p>3.2B Analyze data by identifying any significant features, patterns, or sources of error.</p>	<p>3.13A Explore and explain how external structures and functions of animals such as the neck of a giraffe or webbed feet on a duck enable them to survive in their environment.</p>	

Mini-lesson **TEKS 3.13A**




Why does our skeleton have so many bones?

Mini-lesson **TEKS 3.13A**




Why does the heart pump blood?

Mini-lesson **TEKS 3.13A**



What would happen if you didn't have a skull?

Mini-lesson **TEKS 3.13A**



Why do we sweat when we play sports?

All 4th Grade Units • Units may be taught in any order



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Science TEKS 2021

- 4.8A

Scientific and Engineering Practices

- 4.1B
- 4.1G
- 4.2B

Unit Breakdown:

- 4 Lessons & Activities
- 4 Lesson Assessments
- 4 Extension Blocks
- 1 Mini-lesson

Science TEKS 2021

- 4.7
- 4.8A

Scientific and Engineering Practices

- 4.2B
- 4.2D

Unit Breakdown:

- 3 Lessons & Activities
- 3 Lesson Assessments
- 3 Extension Blocks

Science TEKS 2021

- 4.7
- 4.9A
- 4.9B

Scientific and Engineering Practices

- 4.1G
- 4.2A
- 4.2B
- 4.2C
- 4.3A

Unit Breakdown:

- 4 Lessons & Activities
- 4 Lesson Assessments
- 4 Extension Blocks

Science TEKS 2021

- 4.10A
- 4.10C

Scientific and Engineering Practices

- 4.1G
- 4.2B
- 4.3A

Unit Breakdown:

- 2 Lessons & Activities
- 2 Lesson Assessments
- 2 Extension Blocks

Science TEKS 2021

- 4.10B
- 4.11A

Scientific and Engineering Practices

- 4.1G
- 4.2C
- 4.3A
- 4.3B
- 4.3C

Unit Breakdown:

- 4 Lessons & Activities
- 4 Lesson Assessments
- 4 Extension Blocks
- 1 Mini-lesson

Science TEKS 2021

- 4.13B

Scientific and Engineering Practices

- 4.1E
- 4.1F
- 4.2B
- 4.2C

Unit Breakdown:

- 3 Lessons & Activities
- 3 Lesson Assessments
- 3 Extension Blocks

Science TEKS 2021

- 4.12A
- 4.13A
- 4.13B

Scientific and Engineering Practices

- 4.1A
- 4.1G
- 4.2A
- 4.2C
- 4.3A

Unit Breakdown:

- 3 Lessons & Activities
- 3 Lesson Assessments
- 3 Extension Blocks
- 1 Mini-lesson

Sounds, Waves, & Communication Unit

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
<p>Lesson 1</p>	<p>Pattern Transfer & Technology</p> <p>How do you send a secret code?</p>	<p>Students explore how digital devices encode complex information. They generate their own visual and sound codes and evaluate which work best given certain criteria and constraints.</p>	<p>4.1B Plan and conduct descriptive investigations and use engineering practices to design solutions to problems.</p>	<p>4.8A Investigate and identify the transfer of energy by objects in motion, waves in water, and sound.</p>
<p>Lesson 2</p>	<p>Sound, Vibration, & Engineering</p> <p>How far can a whisper travel?</p>	<p>Students investigate sound energy using paper cup telephones. Students figure out that sound is a vibration that can travel through a medium.</p>	<p>4.1B Plan and conduct descriptive investigations and use engineering practices to design solutions to problems.</p>	<p>4.8A Investigate and identify the transfer of energy by objects in motion, waves in water, and sound.</p>
<p>Lesson 3</p>	<p>Sound & Vibrations</p> <p>What would happen if you screamed in outer space?</p>	<p>Students construct a model of sound vibrations to explain how air is a medium that sound vibrations travel through.</p>	<p>4.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p>	<p>4.8A Investigate and identify the transfer of energy by objects in motion, waves in water, and sound.</p>
<p>Lesson 4</p>	<p>Sound Waves & Wavelength</p> <p>Why are some sounds high and some sounds low?</p>	<p>Students make observations of vibrations and sound waves to discover that high pitch sounds vibrate faster and have short wavelengths and low pitch sounds vibrate slower and have long wavelengths.</p>	<p>4.2B Analyze data by identifying any significant features, patterns, or sources of error.</p>	<p>4.8A Investigate and identify the transfer of energy by objects in motion, waves in water, and sound.</p>

Mini-lesson





TEKS 4.8A

How do phones work?



Energy Transfer Unit

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
<p>Lesson 1</p>	<p>✓ Collisions & Energy Transfer</p> <p>How can marbles save the world?</p>	<p>Students explore collisions and energy transfer with marbles. They build a collision game and make predictions about the distance marbles will travel after multiple collisions occur.</p>	<p>4.2B Analyze data by identifying any significant features, patterns, or sources of error.</p>	<p>4.8A Investigate and identify the transfer of energy by objects in motion, waves in water, and sound.</p>
<p>Lesson 2</p>	<p>Energy Transfer & Engineering</p> <p>Could you knock down a building using only dominoes?</p>	<p>Students experiment with ways to store and release energy, creating the beginning of a chain reaction machine with a lever and a ramp. Students figure out that a domino standing on end is storing energy, only requiring a small amount of energy (a tiny push) to release the stored energy.</p>	<p>4.2D Evaluate a design or object using criteria.</p>	<p>4.7 Plan and conduct descriptive investigations to explore the patterns of forces such as gravity, or magnetism in contact or at a distance on an object.</p> <p>4.8A Investigate and identify the transfer of energy by objects in motion, waves in water, and sound.</p>
<p>Lesson 3</p>	<p>Energy Transfer & Engineering</p> <p>Can you build a chain reaction machine?</p>	<p>Students continue to build a chain reaction machine – identifying a goal, brainstorming and testing multiple ideas, and determining an optimal solution. The chain reaction machine uses multiple components to transfer energy from one part to the next.</p>	<p>4.2D Evaluate a design or object using criteria.</p>	<p>4.7 Plan and conduct descriptive investigations to explore the patterns of forces such as gravity, or magnetism in contact or at a distance on an object.</p> <p>4.8A Investigate and identify the transfer of energy by objects in motion, waves in water, and sound.</p>

Space Patterns Unit (Patterns in Space)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1</p>	<p>Seasonal Changes & Shadow Length</p> <p>How can the Sun tell you the season?</p>	<p>Students examine photos taken at different times of year and figure out the time of year that each photo was taken. Students discover that the Sun's path changes with the seasons, as does the time of sunrise and sunset. The Sun is always highest in the sky at noon, but that height changes with the season.</p>	<p>4.2B Analyze data by identifying any significant features, patterns, or sources of error.</p>	<p>4.9A Collect and analyze data to identify sequences and predict patterns of change in seasons such as change in temperature and length of daylight .</p>
 <p>Lesson 2</p>	<p>Seasonal Patterns & Earth's Orbit</p> <p>Why do the stars change with the seasons?</p>	<p>Students build a model of the universe and use it to explain why different stars are visible at different times of year. Using evidence from this model, students make an argument that supports the claim that the Earth orbits the Sun.</p>	<p>4.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem. 4.2A Identify advantages and limitations of models such as their size, scale, properties, and materials.</p>	<p>4.9A Collect and analyze data to identify sequences and predict patterns of change in seasons such as change in temperature and length of daylight .</p>
 <p>Lesson 3</p>	<p>Moon Phases, Lunar Cycle</p> <p>Why does the Moon change shape?</p>	<p>Students use a physical model of the Sun and Moon to investigate how the Moon's phase relates to its position relative to the Sun. Students notice that the Moon's phases repeat in a predictable pattern.</p>	<p>4.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem. 4.2A Identify advantages and limitations of models such as their size, scale, properties, and materials.</p>	<p>4.9B Collect and analyze data to identify sequences and predict patterns of change in the observable appearance of the Moon from Earth.</p>
 <p>Lesson 4</p>	<p>Gravity</p> <p>Why is gravity different on other planets?</p>	<p>Using mathematics and computational thinking, students calculate how high they could jump on planets and moons that have stronger or weaker gravity than Earth. Students analyze and interpret this data to construct an explanation for why the amount of gravity is different on other planets.</p>	<p>4.2B Analyze data by identifying any significant features, patterns, or sources of error. 4.2C Use mathematical calculations to compare patterns and relationships. 4.3A Develop explanations and propose solutions supported by data and models.</p>	<p>4.7 Plan and conduct descriptive investigations to explore the patterns of forces such as gravity, or magnetism in contact or at a distance on an object.</p>

Weather & Climate Unit

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1</p>	<p>Water Cycle & States of Matter</p> <p>Where do clouds come from?</p>	<p>Students obtain and combine information that water can change from liquid to gas, but that it is always made of tiny drops. Clouds are made of water that has evaporated.</p>	<p>4.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p>	<p>4.10A Describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process.</p>
 <p>Lesson 2</p>	<p>✓ Climate & Global Weather Patterns</p> <p>Why are some places always hot?</p>	<p>Students obtain and combine information to describe the different climate regions of the world.</p>	<p>4.2B Analyze data by identifying any significant features, patterns, or sources of error.</p> <p>4.3A Develop explanations and propose solutions supported by data and models.</p>	<p>4.10C Differentiate between weather and climate.</p>

Earth's Natural Resources Unit (Water & Weathering)



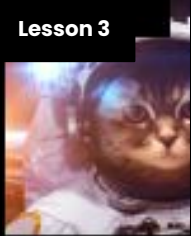
	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
Lesson 1 	Hydrosphere & Water Distribution How much water is in the world?	Students analyze and interpret data from world maps to determine the relative amounts of fresh, salt, and frozen water. Students figure out that while the Earth has a lot of water, most of Earth's water is not fresh or accessible.	4.2C Use mathematical calculations to compare patterns and relationships.	4.11A Identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas.
Lesson 2 	Groundwater as a Natural Resource When you turn on the faucet, where does the water come from?	Students learn most people get fresh water from underground sources. Students determine the best place to settle a town by considering features of the landscape & the characteristics of the plants that thrive there.	4.3C Listen actively to others' explanations to identify relevant evidence and engage respectfully in scientific discussion.	4.11A Identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas.
Lesson 3 	Weathering & Erosion Will a mountain last forever?	Students make observations of the effects of weathering to discover that rocks will become rounded and break into small pieces when they tumble down a mountain.	4.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem. 4.3A Develop explanations and propose solutions supported by data and models.	4.10B Model and describe slow changes to Earth's surface caused by weathering, erosion, and deposition from water, wind, and ice.
Lesson 4 	✨New!✨ Renewable Energy & Natural Resources What's the best way to light up a city?	Students evaluate the advantages and disadvantages of wind, water, and solar energy to power a town. Students obtain and evaluate information about the needs of each source of energy and analyze and interpret data about the town's resources.	4.2C Use mathematical calculations to compare patterns and relationships. 4.3B Communicate explanations and solutions individually and collaboratively in a variety of settings and formats	4.11A Identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas.

Mini-lesson




TEKS 4.10B

How old is the Earth?


Traits, Survival, & Selection Unit

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1</p>	<p>✨ New! ✨</p> <p>✓ Trait Variation, Inheritance, & Artificial Selection</p> <p>What do dogs and pigeons have in common?</p>	<p>Students analyze trait similarities and differences among parent, offspring, and sibling pigeons. They interpret this data to discover that the variation and inheritance of traits creates a pattern that explains why we see such extreme traits in artificially selected animal breeds.</p>	<p>4.1E Collect observations and measurements as evidence.</p> <p>4.1F Construct appropriate graphic organizers used to collect data.</p>	<p>4.13B Differentiate between inherited and acquired physical traits of organisms.</p>
 <p>Lesson 2</p>	<p>✨ New! ✨</p> <p>✓ Trait Variation, Survival, & Natural Selection</p> <p>How could a lizard's toes help it survive?</p>	<p>Students compare the structures of lizards that live on an island. They simulate multiple generations of these lizards, and analyze and interpret the data to understand how these structures aid in their survival.</p>	<p>4.1E Collect observations and measurements as evidence.</p> <p>4.2B Analyze data by identifying any significant features, patterns, or sources of error.</p>	<p>4.13B Differentiate between inherited and acquired physical traits of organisms.</p>
 <p>Lesson 3</p>	<p>✓ Traits & Environmental Variation</p> <p>How long can people (and animals) survive in outer space?</p>	<p>Students measure and compare their own physical traits (arm strength, balance, and height) and analyze the information to construct an explanation for how the environment can influence traits.</p>	<p>4.1E Collect observations and measurements as evidence.</p> <p>4.2C Use mathematical calculations to compare patterns and relationships.</p>	<p>4.13B Differentiate between inherited and acquired physical traits of organisms.</p>

Plant Traits & Growth Unit (Power of Plants)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1</p>	<p>✨New!✨</p> <p>Traits & Inheritance</p> <p>How do you identify a mysterious fruit?</p>	<p>Students examine plant traits and use that information as evidence to help them identify an unknown fruit. They look for similarities and differences in the leaves, flowers, and fruits of plants to sort them into groups and identify patterns of inheritance.</p>	<p>4.1A Ask questions and define problems based on observations or information from text, phenomena, models, or investigations</p>	<p>4.13B Differentiate between inherited and acquired physical traits of organisms.</p>
 <p>Lesson 2</p>	<p>✨New!✨</p> <p>Plant Adaptations</p> <p>Why don't the same trees grow everywhere?</p>	<p>Students use models of roots and branches to explore their functions and then construct an argument about how these structures must work together in order to support the survival of trees in the unique environment of the frozen taiga.</p>	<p>4.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p> <p>4.2A Identify advantages and limitations of models such as their size, scale, properties, and materials.</p>	<p>4.13A Explore and explain how structures and functions of plants such as waxy leaves and deep roots enable them to survive in their environment.</p>
 <p>Lesson 3</p>	<p>Matter & Plant Growth</p> <p>What do plants eat?</p>	<p>Students conduct an investigation and interpret data and figure out that water and air account for a plant's weight.</p>	<p>4.2C Use mathematical calculations to compare patterns and relationships.</p> <p>4.3A Develop explanations and propose solutions supported by data and models.</p>	<p>4.12A Investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matter.</p>

Mini-lesson



TEKS 4.13A

Why don't all trees lose their leaves in the fall?

All 5th Grade Units • Units may be taught in any order



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Science TEKS 2021

- 5.6A
- 5.6B
- 5.6C
- 5.6D

Scientific and Engineering Practices

- 5.1B
- 5.1E
- 5.1G

Unit Breakdown:

- 5 Lessons & Activities
- 5 Lesson Assessments
- 5 Extension Blocks

Science TEKS 2021

- 5.8A
- 5.8B
- 5.8C

Scientific and Engineering Practices

- 5.1B
- 5.1G
- 5.2A
- 5.2B

Unit Breakdown:

- 4 Lessons & Activities
- 4 Lesson Assessments
- 4 Extension Blocks
- 2 Mini-lessons

Science TEKS 2021

- 5.9

Scientific and Engineering Practices

- 5.1G
- 5.2B

Unit Breakdown:

- 2 Lessons & Activities
- 2 Lesson Assessments
- 2 Extension Blocks
- 1 Mini-lesson

Science TEKS 2021

- 5.6B
- 5.6C
- 5.10A

Scientific and Engineering Practices

- 5.1B
- 5.1E
- 5.1F
- 5.2C

Unit Breakdown:

- 3 Lessons & Activities
- 3 Lesson Assessments
- 3 Extension Blocks

Science TEKS 2021

- 5.10B
- 5.10C

Scientific and Engineering Practices

- 5.1E
- 5.1G

Unit Breakdown:

- 3 Lessons & Activities
- 3 Lesson Assessments
- 3 Extension Blocks
- 1 Mini-lesson

Science TEKS 2021

- 5.12A
- 5.12B
- 5.12C

Scientific and Engineering Practices

- 5.1B
- 5.1G
- 5.2A
- 5.3A
- 5.2B

Unit Breakdown:

- 5 Lessons & Activities
- 5 Lesson Assessments
- 5 Extension Blocks

Science TEKS 2021

- 5.13A
- 5.13B






Scientific and Engineering Practices

- 5.1E
- 5.1G
- 5.2A

Unit Breakdown:

- 2 Lessons & Activities
- 2 Lesson Assessments
- 2 Extension Blocks
- 1 Mini-lesson

Matter & Mixtures Unit (Chemical Magic)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1</p>	<p>Conservation of Matter</p> <p>Are magic potions real?</p>	<p>Students observe that a salt and vinegar solution will turn a dull penny shiny again indicating that substances can change other substances.</p>	<p>5.1E Collect observations and measurements as evidence.</p>	<p>5.6B Demonstrate and explain that some mixtures maintain physical properties of their substances such as iron filings and sand and sand and water.</p> <p>5.6C Compare the properties of substances before and after they are combined into a solution and demonstrate that matter is conserved in solutions.</p>
 <p>Lesson 2</p>	<p>Dissolving & Particulate Nature of Matter</p> <p>Could you transform something worthless into gold?</p>	<p>Students coat a steel nail in copper by placing it into the solution that dissolved bits of the penny. Students realize that substances can change to become particles too small to be seen, but they still exist.</p>	<p>5.1E Collect observations and measurements as evidence.</p>	<p>5.6B Demonstrate and explain that some mixtures maintain physical properties of their substances such as iron filings and sand and sand and water.</p> <p>5.6C Compare the properties of substances before and after they are combined into a solution and demonstrate that matter is conserved in solutions.</p>
 <p>Lesson 3</p>	<p>Properties of Matter: Acids</p> <p>What would happen if you drank a glass of acid?</p>	<p>Students figure out that acids are very reactive substances. Students investigate reactions between different substances to determine how known acids react with other materials.</p>	<p>5.1B Use scientific practices to plan and conduct descriptive and simple experimental investigations.</p> <p>5.1E Collect observations and measurements as evidence.</p>	<p>5.6A Compare and contrast matter based on measurable, testable, or observable physical properties, including mass, magnetism, relative density (sinking and floating using water as a reference point), physical state (solid, liquid, gas), volume, solubility in water, and the ability to conduct or insulate thermal energy and electric energy.</p>
 <p>Lesson 4</p>	<p>Chemical Reactions</p> <p>What do fireworks, rubber, and Silly Putty have in common?</p>	<p>Students combine different substances together to discover that chemical reactions can create new substances.</p>	<p>5.1B Use scientific practices to plan and conduct descriptive and simple experimental investigations.</p> <p>5.1E Collect observations and measurements as evidence.</p>	<p>5.6A Compare and contrast matter based on measurable, testable, or observable physical properties, including mass, magnetism, relative density (sinking and floating using water as a reference point), physical state (solid, liquid, gas), volume, solubility in water, and the ability to conduct or insulate thermal energy and electric energy.</p>
 <p>Lesson 5</p>	<p>Gases & Particle Models</p> <p>Why do some things explode?</p>	<p>Students investigate and model the reaction between baking soda and vinegar. They figure out that gases are made of particles too small to be seen.</p>	<p>5.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p>	<p>5.6D Illustrate how matter is made up of particles that are too small to be seen such as air in a balloon.</p>

Light, Heat, & Electricity Unit (Light & Heat)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
<p>Lesson 1</p>	<p>Light, Eyes, & Vision</p> <p>What do people who are blind see?</p>	<p>Students develop a working model of an eye. They use the model to reason about how light reflects off an object and into the eye, helping an organism process information from the environment.</p>	<p>5.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p>	<p>5.8C Demonstrate and explain how light travels in a straight line and can be reflected and refracted.</p>
<p>Lesson 2</p>	<p>Structure & Function of Eyes</p> <p>How can some animals see in the dark?</p>	<p>Students use their eye model to discover that the pupil controls the amount of light let into the eye. In the dark, pupils get larger to let in more light.</p>	<p>5.2A Identify advantages and limitations of models such as their size, properties, and materials.</p>	<p>5.8C Demonstrate and explain how light travels in a straight line and can be reflected and refracted.</p>
<p>Lesson 3</p>	<p>Electrical Energy</p> <p>What if there were no electricity?</p>	<p>Students design a flashlight with an on/off switch, using batteries, flights, and tin foil. Students figure out that electricity can be transformed to other forms of energy, such as movement, light, and heat.</p>	<p>5.1B Use engineering practices to design solutions to problems.</p>	<p>5.8A Investigate and describe the transformation of energy in systems such as energy in a flashlight battery that changes from chemical energy to electrical energy to light energy. 5.8B Demonstrate that electrical energy in complete circuits can be transformed into motion, light, sound, or thermal energy and identify the requirements for a functioning electrical circuit.</p>
<p>Lesson 4</p>	<p>Heat Energy & Energy Transfer</p> <p>How long did it take to travel across the country before cars and planes?</p>	<p>Students build a paper spinner and conduct an investigation to explain how heat makes things move. Students realize that heat energy can be transformed into motion energy using a turbine.</p>	<p>5.2B Analyze data by identifying significant features, patterns, or sources of error.</p>	<p>5.8A Investigate and describe the transformation of energy in systems such as energy in a flashlight battery that changes from chemical energy to electrical energy to light energy.</p>

Mini-lesson

TEKS 5.8C



How is a rainbow made?

Mini-lesson


TEKS 5.8A

How do batteries work?

Earth's Rotation Unit (Spinning Earth)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1</p>	<p>Day, Night, & Earth's Rotation</p> <p>How fast does the Earth spin?</p>	<p>Students model the rotation of the Earth and investigate why the Sun looks like it's moving across the sky. Using evidence they gathered in the investigation, students build a model that explains how the Earth's rotation around its own axis causes the Sun to appear to rise and set.</p>	<p>5.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p>	<p>5.9 Demonstrate that Earth rotates on its axis once approximately every 24 hours and explain how that causes the day/night cycle and the appearance of the Sun moving across the sky, resulting in changes in shadow positions and shapes.</p>
 <p>Lesson 2</p>	<p>Earth's Rotation & Daily Shadow Patterns</p> <p>Who set the first clock?</p>	<p>Students make a shadow clock (sundial) and investigate how the direction and length of shadows change with the position of the light shining on the sundial. Students realize that the Sun's position in the sky can be used to tell the time of day.</p>	<p>5.2B Analyze data by identifying significant features, patterns, or sources of error.</p>	<p>5.9 Demonstrate that Earth rotates on its axis once approximately every 24 hours and explain how that causes the day/night cycle and the appearance of the Sun moving across the sky, resulting in changes in shadow positions and shapes.</p>




Mini-lesson






TEKS 5.9

Why do places have different times?


Water Cycle Unit (Watery Planet)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1</p>	<p>Mixtures & Solutions</p> <p>How much salt is in the ocean?</p>	<p>Students create a model ocean to observe how salt seems to completely vanish when dissolved in water. Students measure and graph quantities to provide evidence that the salt is still in the solution, even though we can't see it.</p>	<p>5.1E Collect observations and measurements as evidence.</p> <p>5.1F Construct appropriate graphic organizers used to collect data.</p>	<p>5.6B Demonstrate and explain that some mixtures maintain physical properties of their substances such as iron filings and sand and sand and water.</p> <p>5.6C Compare the properties of substances before and after they are combined into a solution and demonstrate that matter is conserved in solutions.</p>
 <p>Lesson 2</p>	<p>Water Cycle</p> <p>Can we make it rain?</p>	<p>Students create a model of the ocean and sky to investigate how temperature influences evaporation and condensation. Students figure out that higher ocean temperatures lead to more evaporation, thus leading to more rain.</p>	<p>5.1B Use scientific practices to plan and conduct descriptive and simple experimental investigations.</p> <p>5.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p>	<p>5.10A Explain how the Sun and the ocean interact in the water cycle and affect weather.</p>
 <p>Lesson 3</p>	<p>Natural Disasters & Engineering</p> <p>How can you save a town from a hurricane?</p>	<p>Students define the problem that a town needs protection from flooding. They design solutions using different types of flood protection. They realize flooding is caused by severe rainfall generated by hurricanes. Hurricanes are created where ocean temperatures are warm.</p>	<p>5.1B Use engineering practices to design solutions to problems.</p> <p>5.2C Use mathematical concepts to compare patterns and relationships</p>	<p>5.10A Explain how the Sun and the ocean interact in the water cycle and affect weather.</p>

Erosion & Land Formation Unit (Layers of Land)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1 Sedimentary Rock & Fossils</p>	<p>What did your town look like 100 million years ago?</p>	<p>Students create a model canyon and use the pattern of fossils found in each rock layer to support the explanation that the landscape has changed many times over millions of years.</p>	<p>5.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p>	<p>5.10B Model and describe the processes that led to the formation of sedimentary rocks and fossil fuels.</p>
 <p>Lesson 2 Erosion, Earth's Surface, & Landforms</p>	<p>What's strong enough to make a canyon?</p>	<p>Students create a model landform and investigate how some Earth events can occur quickly, while others occur slowly.</p>	<p>5.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p> <p>5.1E Collect observations and measurements as evidence.</p>	<p>5.10C Model and identify how changes to Earth's surface by wind, water, or ice result in the formation of landforms, including deltas, canyons, and sand dunes.</p>
 <p>Lesson 3 Erosion & Engineering</p>	<p>How can you stop a landslide?</p>	<p>Students compare multiple solutions for preventing erosion.</p>	<p>5.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p>	<p>5.10C Model and identify how changes to Earth's surface by wind, water, or ice result in the formation of landforms, including deltas, canyons, and sand dunes.</p>






Mini-lesson





TEKS 5.10B


What's the best place to look for dinosaur fossils?

Ecosystems & The Food Web Unit (Web of Life)

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1</p>	<p>✓ Food Chains, Producers, & Consumers</p> <p>Why would a hawk move to New York City?</p>	<p>Students construct models of food chains by linking cards discovering that different interrelationships exist between organisms.</p>	<p>5.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p> <p>5.2A Identify advantages and limitations of models such as their size, properties, and materials.</p>	<p>5.12A Observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem.</p> <p>5.12B Predict how changes in the ecosystem affect the cycling of matter and flow of energy in a food web.</p>
 <p>Lesson 2</p>	<p>Decomposers & Matter Cycle</p> <p>Where do fallen leaves go?</p>	<p>Students conduct an investigation to test how mold grows under different conditions to decompose food. Students realize that decomposers, like mold, break down and consume dead plant material.</p>	<p>5.1B Use scientific practices to plan and conduct descriptive and simple experimental investigations.</p>	<p>5.12A Observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem.</p>
 <p>Lesson 3</p>	<p>Decomposers, Nutrients, & Matter Cycle</p> <p>Do worms really eat dirt?</p>	<p>Students make observations of worms to realize that worms act as decomposers to eat dead matter in an ecosystem and cycle nutrients into the soil.</p>	<p>5.1B Use scientific practices to plan and conduct descriptive and simple experimental investigations.</p>	<p>5.12A Observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem.</p>
 <p>Lesson 4</p>	<p>Ecosystems & Matter Cycle</p> <p>Why do you have to clean a fish tank but not a pond?</p>	<p>Students develop a model of a pond ecosystem and realize that interrelationships exist between decomposers, plants, and animals. Students discover that each organism must be in balance for the pond ecosystem to function.</p>	<p>5.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p>	<p>5.12A Observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem.</p> <p>5.12B Predict how changes in the ecosystem affect the cycling of matter and flow of energy in a food web.</p>
 <p>Lesson 5</p>	<p>Protecting Environments</p> <p>How can we protect Earth's environments?</p>	<p>Students learn about what happens in unbalanced ecosystems and how that can lead to an overabundance of algae and harmful algal blooms. Students obtain and combine science ideas in order to help respond to and prevent harmful algal blooms.</p>	<p>5.3A Develop explanations and propose solutions supported by data and models.</p> <p>5.3B Communicate explanations and solutions individually and collaboratively in a variety of settings and formats.</p>	<p>5.12C Describe a healthy ecosystem and how human activities can be beneficial or harmful to an ecosystem.</p>

Structures & Behaviors Unit

	Topic & Guiding Question	Student Objectives	Scientific and Engineering Practices	Science TEKS 2021
 <p>Lesson 1</p>	<p>✨ New! ✨</p> <p>✓ Animal Adaptations</p> <p>Why do some sea creatures look so strange?</p>	<p>Students make observations of underwater animals to collect evidence that external structures serve specific functions. They use their observations to identify how these animals survive in aquatic environments.</p>	<p>5.1E Collect observations and measurements as evidence.</p>	<p>5.13A Analyze the structures and functions of different species to identify how organisms survive in the same environment.</p>
 <p>Lesson 2</p>	<p>✨ New! ✨</p> <p>✓ Learned Behavior & Instinct</p> <p>Why would a sea turtle eat a plastic bag?</p>	<p>Students use models to understand how an animal's senses, brain, and memories all work together as a system to influence their behavior and support their survival.</p>	<p>5.1G Develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.</p> <p>5.2A Identify advantages and limitations of models such as their size, properties, and materials.</p>	<p>5.13B Explain how instinctual behavioral traits such as turtle hatchlings returning to the sea and learned behavioral traits such as orcas hunting in packs increase chances of survival.</p>



Mini-lesson

TEKS 5.13B

Are killer whales really dangerous?