Scope and Sequence

To address students' diverse learning needs and developmental progression across early elementary grades, Science4Us provides a distinct scope and sequence for each grade level: Kindergarten, Grade 1, and Grade 2. While the program's modular design allows for flexible implementation in any order, each grade-level sequence is intentionally aligned with learning standards. This alignment ensures that instruction supports the grade-appropriate key concepts, big ideas, and essential knowledge and practices expected of students in K–2.

In addition to science standards, Science4Us lessons are thoughtfully designed to reinforce content area standards in English Language Arts (ELA) and mathematics, promoting interdisciplinary learning and skill transfer.

The program also features a clear vertical alignment across the three grade levels, which is evident in the organization of instructional modules within the digital books. For example, in the Physical Science domain of Matter, the progression of modules—Materials and Mixtures, Observing Matter, States of Matter, and Changes of Matter—reflects increasing complexity and builds upon prior knowledge. This structure simplifies lesson planning for educators while ensuring a coherent and developmentally appropriate learning experience for students.

The following chart provides a brief overview of the scope of content covered at each of the three grade levels and describes how Science4Us content aligns vertically across grades K–2, allowing teachers to adapt instruction for differentiation.

Kindergarten Science	First Grade Science	Second Grade Science
Kindergarten students are new to the study of science. Their first year of investigation and study builds the framework for all their future science learning. The first science book, Inquiry, introduces kindergarten students to the tools they will use throughout the year to help them make observations and measurements. These range from familiar tools, such as the five senses, to unfamiliar new tools, such as a balance scale. Students use scientific tools and inquiry skills as they work through all the modules.	First-grade students are experienced scientists. They continue to develop their observation skills and skills for recording what they learn and observe. Students in first grade build on their skills from kindergarten by learning to observe matter and by learning about the different states of matter. They also learn about different forms of energy: light energy, sound energy, and how energy is transformed.	Second-grade students absorb more complex material over the course of the year. Their increased knowledge base and skills as science learners allow them to cover a greater number of modules during the year. Some of the modules, such as Tools, Plants, and Animals, are familiar from kindergarten and first grade. Revisiting familiar content supports students in understanding new and more sophisticated topics and boosts their confidence in learning.

ExploreLearning Science4Us®

Correlations for Mississippi- Science

College and Career Readiness Standards Adopted: 2018

2018 Mississippi K-2 College and Career Readiness Standards for Science
Science4Us Alignment

KINDERGARTEN Theme: Change in the Natural World

Kindergarten: Life Science

L.K.1 Hierarchical Organization

Conceptual Understanding: Objects in the environment can be classified as living and nonliving. Living things include plants and animals. All living things reproduce, grow, develop, respond to stimuli, and die; and non-living things do not. Living things require air, food, water, and an environment in which to live. Acting as scientists, students will observe the natural world and use investigations, charts, drawings, sketches, and models to communicate ideas.

Standard	Performance Objectives	Science4Us Instructional Module(s)
L.K.1A Students will demonstrate an understanding of living and non-living things.	L.K.1A.1 With teacher guidance, conduct an investigation of living organisms and nonliving objects in various real-world environments to define characteristics of living organisms that distinguish them from non-living things (e.g., playground, garden, school grounds).	**Living and Nonliving:** Living things have four specific characteristics: they are made up of parts, they use energy to grow, they respond to their environment, and they reproduce. (LS)
	L.K.1A.2 With teacher support, gain an understanding that scientists are humans who use observations to learn about the natural world. Obtain information from informational text or other media about scientists who have made important observations about living things (e.g. Carl Linnaeus, John James Audubon, Jane Goodall).	**Science Tools:** In science, a tool is something you use to collect data, or information. Scientists use tools to help them observe, describe, compare, measure, and communicate. (I)

Conceptual Understanding: All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air. Animals (including humans) use their senses to learn about the world around them.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
1.L.K.1B Students will demonstrate an understanding of how animals (including humans) use their physical features and their senses to learn about their environment.	L.K.1B.1 Develop and use models to exemplify how animals use their body parts to (a) obtain food and other resources, (b) protect themselves, and (c) move from place to place.	**Animals:** Animals are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS)
	L.K.1B.2 Identify and describe examples of how animals use their sensory body parts (eyes to detect light and movement, ears to detect sound, skin to detect temperature and touch, tongue to taste, and nose to detect smell).	**Animals:** Animals are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS) **Science Tools:** In science, a tool is something you use to collect data, or information. Scientists use tools to help them observe, describe, compare, measure, and communicate. (I)

Book Key:	I: Inquiry	PS: Physical Science	LS: Life Science	ES: Earth Science

KINDERGARTEN: Life Science

L.K.2 Reproduction and Heredity

Conceptual Understanding: Plants and animals change in form as they go through stages in the life cycle. Young plants and animals are very much like their parents and other plants and animals of the same kind, but they can also vary in many ways.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
L.K.2 Students will demonstrate an understanding of how living things change in form as they go through the general stages of a life cycle.	L.K.2.1 Use informational text or other media to make observations about plants as they change during the life cycle (e.g., germination, growth, reproduction, and death) and use models (e.g., drawing, writing, dramatization, or technology) to communicate findings.	**Plants:** Plants are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS)
	L.K.2.2 Construct explanations using observations to describe and model the life cycle (birth, growth, adulthood, death) of a familiar mammal (e.g., dog, squirrel, rabbit, deer).	**Animals:** Animals are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS)
	L.K.2.3 With teacher guidance, conduct a structured investigation to observe and measure (comparison of lengths) the changes in various individuals of a single plant species from seed germination to adult plant. Record observations using drawing or writing.	
	L.K.2.4 Use observations to explain that young plants and animals are like but not exactly like their parents (i.e., puppies look similar, but not exactly like their parents).	**Plants:** Plants are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS) **Animals:** Animals are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS)

Book Key: **I: Inquiry** **PS: Physical Science** **LS: Life Science** **ES: Earth Science**

KINDERGARTEN: Life Science

L.K.3 Ecology and Interdependence

Conceptual Understanding: The environment consists of many types of living things including plants and animals. Living things depend on the land, water, and air to live and grow.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
L.K.3A Students will demonstrate an understanding of what animals and plants need to live and grow.	L.K.3A.1 With teacher guidance, conduct a structured investigation to determine what plants need to live and grow (water, light, and a place to grow). Measure growth by directly comparing plants with other objects.	
	L.K.3A.2 Construct explanations using observations to describe and report what animals need to live and grow (food, water, shelter, and space).	**Animals:** Animals are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS) **Food Webs:** Food chains and food webs illustrate the flow of energy through a system of living things. (LS) **Habitats:** A habitat is made up of the living and non-living things an animal or plant needs to thrive. (LS)

Conceptual Understanding: Interdependence exists between plants and animals within an environment. Living things can only survive in areas where their needs for air, water, food, and shelter are met.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
L.K.3B Students will demonstrate an understanding of the interdependence of living things and the environment in which they live.	L.K.3B.1 Observe and communicate that animals get food from plants or other animals. Plants make their own food and need light to live and grow.	**Food Webs:** Food chains and food webs illustrate the flow of energy through a system of living things. (LS) **Animals:** Animals are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS) **Plants:** Plants are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS
	L.K.3B.2 Create a model habitat which demonstrates interdependence of plants and animals using an engineering design process to define the problem, design, construct, evaluate, and improve the habitat.	**Habitats:** A habitat is made up of the living and non-living things an animal or plant needs to thrive. (LS)

Book Key: **I: Inquiry** **PS: Physical Science** **LS: Life Science** **ES: Earth Science**

KINDERGARTEN: Life Science

L.K.4 Adaptations and Diversity

Conceptual Understanding: When animals do not get what they need to survive, they will die. Some types of plants and animals are now extinct because they were unable to adapt when the environment changed. There are similarities between some present-day animals and extinct animals.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
L.K.4 Students will demonstrate an understanding that some groups of plants and animals are no longer living (extinct) because they were unable to meet their needs for survival.	L.K.4.1 Obtain information from informational text or other media to document and report examples of different plants or animals that are extinct.	**History of Earth:** Fossils of plants and animals, earthquakes and volcanoes are all evidence of how the Earth has changed over time and continues to change today. (ES)
	L.K.4.2 Observe and report how some present-day animals resemble extinct animals (i.e., elephants resemble woolly mammoths).	**History of Earth:** Fossils of plants and animals, earthquakes and volcanoes are all evidence of how the Earth has changed over time and continues to change today. (ES)

Book Key: **I: Inquiry** **PS: Physical Science** **LS: Life Science** **ES: Earth Science**

KINDERGARTEN: Physical Science

P.K.5 Organization of Matter and Chemical Interactions

Conceptual Understanding: Matter exists in different states, including solid and liquid forms. Water can exist as a solid or a liquid. Solid objects can be described and sorted according to their attributes. Different properties are suited for different purposes.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
P.K.5A Students will demonstrate an understanding of the solid and liquid states of matter.	P.K.5A.1 Generate questions and investigate the differences between liquids and solids and develop awareness that a liquid can become a solid and vice versa.	**States of Matter:** On Earth matter is found most commonly in three different phases: solid, liquid and gas. (PS) **Changes in Matter:** Solids, liquids and gases can undergo changes based on the physical and chemical properties of the matter. (PS)
	P.K.5A.2 Describe and compare the properties of different materials (e.g., wood, plastic, metal, cloth, paper) and classify these materials by their observable characteristics (visual, aural, or natural textural) and by their physical properties (weight, volume, solid or liquid, and sink or float).	**Observing Matter:** Matter has properties that are described using qualitative and quantitative observations. (PS) **Materials and Mixtures:** Everything around us is made up of different materials and can be combined to make mixtures. (PS) **States of Matter:** On Earth matter is found most commonly in three different phases: solid, liquid and gas. (PS) **Materials:** Rocks, water, and soil are some of the materials that make up Earth. (ES)

Conceptual Understanding: Many objects can be built from a smaller set of pieces (e.g., blocks, construction sets). Most objects can be broken down into various component pieces and any piece of uniform matter (e.g., a sheet of paper, a block of wood) can be subdivided into smaller pieces of the same material. If pieces of the original object are damaged or removed, the object may not have the same properties or work the same.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
P.K.5B. Students will demonstrate an understanding of how solid objects can be constructed from a smaller set.	PP.K.5B.1 Use basic shapes and spatial reasoning to model large objects in the environment using a set of small objects (e.g., blocks, construction sets).	**Materials and Mixtures:** Everything around us is made up of different materials and can be combined to make mixtures. (PS)
	P.K.5B.2 Analyze a large composite structure to describe its smaller components using drawing and writing.	**Materials and Mixtures:** Everything around us is made up of different materials and can be combined to make mixtures. (PS)
	P.K.5B.3 Explain why things may not work the same if some of the parts are missing.	

Book Key: **I: Inquiry** **PS: Physical Science** **LS: Life Science** **ES: Earth Science**

KINDERGARTEN: Earth and Space Science

E.K.8 Earth and the Universe

Conceptual Understanding: Seasonal changes occur as the Earth orbits the sun. These seasonal changes repeat in a pattern. Patterns of sunrise and sunset can be described and predicted.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
E.K.8A Students will demonstrate an understanding of the pattern of seasonal changes on the Earth.	E.K.8A.1 Construct an explanation of the pattern of the Earth's seasonal changes in the environment using evidence from observations.	**Earth in Space:** Earth's motion and position in space results in predictable patterns of change, including day/night, seasons and the phases of the Moon. (ES)

Conceptual Understanding: The sun is the source of heat and light for the solar system. This heat can impact Earth's natural resources. Living things depend upon the effects of the sun (warms the land, air, water, and helps plants grow) to survive.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
E.K.8B Students will demonstrate an understanding that the Sun provides the Earth with heat and light.	E.K.8B.1 With teacher guidance, generate and answer questions to develop a simple model, which describes observable patterns of sunlight on the Earth's surface (day and night).	**Earth in Space:** Earth's motion and position in space results in predictable patterns of change, including day/night, seasons and the phases of the Moon. (ES)
	E.K.8B.2 With teacher guidance, develop questions to conduct a structured investigation to determine how sunlight affects the temperature of the Earth's natural resources (e.g., sand, soil, rocks, and water).	**Heat Energy:** Heat energy is energy that can be felt and moves from hot to cold by conduction and radiation. (PS)
	E.K.8B.3 Develop a device (i.e., umbrella, shade structure, or hat) which would reduce heat from the sun (temperature) using an engineering design process to define the problem, design, construct, evaluate, and improve the device.	

Book Key: **I: Inquiry** **PS: Physical Science** **LS: Life Science** **ES: Earth Science**

KINDERGARTEN: Earth and Space Science

E.K.10 Earth's Resources

Conceptual Understanding: Humans use Earth's resources for everything they do. Choices that humans make to live comfortably can affect the world around them. Recycling, reusing, and reducing consumption of natural resources is important in protecting our Earth's environment. Humans can make choices that reduce their impact on Earth's environment.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
E.K.10 Students will demonstrate an understanding of how humans use Earth's resources.	E.K.10.1 Participate in a teacher-led activity to gather, organize and record recyclable materials data on a chart or table using technology. Communicate results.	**Eco Awareness:** We can show that we are eco aware by practicing the three R's of reduce, reuse, and recycle as well as being sensitive to the needs of the other living things that share the environment with us. (LS)
	E.K.10.2 With teacher guidance, develop questions to conduct a structured investigation to determine ways to conserve Earth's resources (i.e., reduce, reuse, and recycle) and communicate results.	**Eco Awareness:** We can show that we are eco aware by practicing the three R's of reduce, reuse, and recycle as well as being sensitive to the needs of the other living things that share the environment with us. (LS)
	E.K.10.3 Create a product from the reused materials that will meet a human need (e.g., pencil holder, musical instrument, bird feeder). Use an engineering design process to define the problem, design, construct, evaluate, and improve the product.	

Book Key:	I: Inquiry	PS: Physical Science	LS: Life Science	ES: Earth Science

GRADE ONE Theme: Discovering Patterns and Constructing Explanations

GRADE ONE: Life Science

L.1.1 Hierarchical Organization

Conceptual Understanding: All living things reproduce, grow, develop, respond to stimuli, and die. Living things require air, food, water, and an environment in which to live. Plants are living things, and each plant part (roots, stem, leaves, and fruit) helps them survive, grow, and reproduce.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
L.1.1 Students will demonstrate an understanding of the basic needs and structures of plants.	L.1.1.1 Construct explanations using first-hand observations or other media to describe the structures of different plants (i.e., root, stem, leaves, flowers, and fruit). Report findings using drawings, writing, or models. .	**Plants:** Plants are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS)
	L.1.1.2 Obtain information from informational text and other media to describe the function of each plant part (roots absorb water and anchor the plant, leaves make food, the stem transports water and food, petals attract pollinators, flowers produce seeds, and seeds produce new plants).	**Plants:** Plants are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS)
	L.1.1.3 Design and conduct an experiment that shows the absorption of water and how it is transported through the plant. Report observations using drawings, sketches, or models	**Plants:** Plants are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS)
	L.1.1.4 Create a model which explains the function of each plant structure (roots, stem, leaves, petals, flowers, seeds).	**Plants:** Plants are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS)
	L.1.1.5 With teacher support, gain an understanding that scientists are humans who use observations and experiments to learn about the natural world. Obtain information from informational text or other media about scientists who have made important observations about plants (e.g., Theophrastus, Gregor Mendel, George Washington Carver, Katherine Esau)	**Science Tools:** In science, a tool is something you use to collect data, or information. Scientists use tools to help them observe, describe, compare, measure, and communicate. (I)

Book Key: **I: Inquiry** **PS: Physical Science** **LS: Life Science** **ES: Earth Science**

GRADE ONE: Life Science

L.1.2 Reproduction and Heredity

Conceptual Understanding: Plants and animals change with each stage of life. Plants have predictable and observable characteristics at each developmental stage (germination, growth, reproduction, and seed dispersal). Most plants are stationary, so they depend upon animals or the wind for seed dispersal. Plants and animals are similar to their parents and resemble other plants and animals of the same kind.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
L.1.2 Students will demonstrate an understanding of how living things change in form as they go through the general stages of a life cycle.	L.1.2.1 Investigate, using observations and measurements (non-standard units), flowering plants (pumpkins, peas, marigolds, or sunflowers) as they change during the life cycle (i.e., germination, growth, reproduction, and seed dispersal). Use drawings, writing, or models to communicate findings.	**Plants:** Plants are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS)
	L.1.2.2 Obtain, evaluate, and communicate information through labeled drawings, the life cycle (egg, larva, pupa, adult) of pollinating insects (e.g., bees, butterflies).	**Animals:** Animals are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS)

Book Key: **I: Inquiry** **PS: Physical Science** **LS: Life Science** **ES: Earth Science**

GRADE ONE: Life Science

L.1.3 Ecology and Interdependence

Conceptual Understanding: The needs of plants must be met to survive. Sunlight, water, nutrients, and space to grow are necessary for plant growth and repair.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
L.1.3A Students will demonstrate an understanding of what plants need from the environment for growth and repair.	L.1.3A.1 Conduct structured investigations to make and test predictions about what plants need to live, grow, and repair including water, nutrients, sunlight, and space. Develop explanations, compare results, and report findings.	**Plants:** Plants are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS)

Conceptual Understanding: Animals, such as insects, depend on other living organisms for food. Many plants depend on insects or other animals for pollination or to move their seeds around so the plant can survive.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
L.1.3B Students will demonstrate an understanding of the interdependence of flowering plants and pollinating insects.	L.1.3B.1 Identify the body parts of a pollinating insect (e.g., bee, butterfly) and describe how insects use these parts to gather nectar or disburse pollen. Report findings using drawings, writing, or models.	

Book Key:	I: Inquiry	PS: Physical Science	LS: Life Science	ES: Earth Science

GRADE ONE: Life Science

L.1.4 Adaptations and Diversity

Conceptual Understanding: Plants respond to stimuli (e.g., turn their leaves to the sun, use tendrils to grab and support) to adapt to changes in the environment. There are distinct environments in the world that support certain types of plants. Plants have features that help them survive in their environment.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
L.1.4 Students will demonstrate an understanding of the ways plants adapt to their environment in order to survive.	L.1.4.1 Explore the cause and effect relationship between plant adaptations and environmental changes (i.e., leaves turning toward the sun, leaves changing color, leaves wilting, or trees shedding leaves).	**Plants:** Plants are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS)
	L.1.4.2 Describe how the different characteristics of plants help them to survive in distinct environments (e.g., rain forest, desert, grasslands, forests).	**Habitats:** A habitat is made up of the living and non-living things an animal or plant needs to thrive. (LS)
	L.1.4.3 Create a solution for an agricultural problem (i.e. pollination, seed dispersal, over-crowding). Use an engineering design process to define the problem, design, construct, evaluate, and improve the solution.	

Book Key: **I: Inquiry** **PS: Physical Science** **LS: Life Science** **ES: Earth Science**

GRADE ONE: Physical Science

P.1.6 Motions, Forces, and Energy

Conceptual Understanding: Some objects allow light to pass through them and some objects do not allow any light to pass through them, creating shadows. Very hot objects give off light. Objects reflect light, and objects can only be seen when light is reflected off them. Mirrors and prisms can be used to change the direction of a light beam.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
P.1.6A Students will demonstrate an understanding that light is required to make objects visible.	P.1.6A.1 Construct explanations using first-hand observations or other media to describe how reflected light makes an object visible.	**Light Energy:** Light energy is energy that can be seen and is generated by natural and manmade sources. (PS)
	P.1.6A.2 Use evidence from observations to explain how shadows form and change with the position of the light source.	**Light Energy:** Light energy is energy that can be seen and is generated by natural and manmade sources. (PS)

Conceptual Understanding: Vibrations of matter can create sound, and sound can make an object vibrate. Humans use sound and light to communicate over long distances.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
P.1.6B Students will demonstrate an understanding of sound.	P.1.6B.1 Conduct an investigation to provide evidence that vibrations create sound (e.g., pluck a guitar string) and that sound can create vibrations (e.g., feeling sound through a speaker).	**Sound:** Sound energy travels in waves and can be described by volume and pitch. (PS)
	P.1.6B.2 Create a device that uses light and/or sound to communicate over a distance (e.g., signal lamp with a flashlight). Use an engineering design process to define the problem, design, construct, evaluate, and improve the device.	**Sound:** Sound energy travels in waves and can be described by volume and pitch. (PS

Book Key: **I: Inquiry** **PS: Physical Science** **LS: Life Science** **ES: Earth Science**

GRADE ONE: Earth and Space Science

E.1.9 Earth's Systems and Cycles

Conceptual Understanding: Weather is a combination of temperature, sunlight, wind, snow, or rain in a particular place at a particular time. People measure weather conditions (temperature, precipitation) to describe and record the weather and to notice patterns over time. Temperature and precipitation can change with the seasons. Some kinds of severe weather (hurricane, tornado, flood, and drought) are more likely to occur in certain regions. Meteorologists forecast severe weather so that communities can prepare for and respond appropriately.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
E.1.9A Students will demonstrate an understanding of the patterns of weather by describing, recording, and analyzing weather data to answer questions about daily and seasonal weather patterns.	E.1.9A.1 Analyze and interpret data from observations and measurements to describe local weather conditions (including temperature, wind, and forms of precipitation).	**Weather:** Weather is how hot or cold, or wet or dry, it is outside from day to day. Weather can be observed and measured using tools. (ES)
	E.1.9A.2 Develop and use models to predict weather conditions associated with seasonal patterns and changes.	**Weather:** Weather is how hot or cold, or wet or dry, it is outside from day to day. Weather can be observed and measured using tools. (ES)
	E.1.9A.3 Construct an explanation for the general pattern of change in daily temperatures by measuring and calculating the difference between morning and afternoon temperatures.	**Weather:** Weather is how hot or cold, or wet or dry, it is outside from day to day. Weather can be observed and measured using tools. (ES)
	E.1.9A.4 Obtain and communicate information about severe weather conditions to explain why certain safety precautions are necessary.	**Weather:** Weather is how hot or cold, or wet or dry, it is outside from day to day. Weather can be observed and measured using tools. (ES)

Conceptual Understanding: The Earth is made of different materials, including rocks, soil, and water (nonliving things). Plants and animals, including humans, depend on the Earth's land, water, and air to live and grow. Animals, including humans, can change the environment (e.g., shape of the land, the flow of water).

Standard	Performance Objectives:	Science4Us Instructional Module(s)
E.1.9B Students will demonstrate an understanding of models (drawings or maps) to describe how water and land are distributed on Earth.	E.1.9B.1 Locate, classify, and describe bodies of water (oceans, rivers, lakes, and ponds) on the Earth's surface using maps, globes, or other media.	**Features:** Earth's features are the natural shapes on the Earth's crust. Made up of rock or water, they change due to weathering and erosion. (ES)
	E.1.9B.2 Generate and answer questions to explain the patterns and location of frozen and liquid bodies of water on earth using maps, globes, or other media.	**Features:** Earth's features are the natural shapes on the Earth's crust. Made up of rock or water, they change due to weathering and erosion. (ES)
	E.1.9B.3 With teacher guidance, plan and conduct a structured investigation to determine how the movement of water can change the shape of the land on earth.	**Features:** Earth's features are the natural shapes on the Earth's crust. Made up of rock or water, they change due to weathering and erosion. (ES)

Book Key: **I: Inquiry** **PS: Physical Science** **LS: Life Science** **ES: Earth Science**

GRADE ONE: Earth and Space Science

E.1.10 Earth's Resources

Conceptual Understanding: Water is essential to life on earth. Humans and other living things are dependent on clean water to survive. Water is an Earth material, and like all of Earth's resources, the amount of water is limited. Continued health and survival of humans are dependent on solutions that maintain clean water sources.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
E.1.10 Students will demonstrate an understanding of human dependence on clean and renewable water resources.	E.1.10.1 Obtain and evaluate informational texts and other media to generate and answer questions about water sources and human uses of clean water.	**Materials:** Rocks, water, and soil are some of the materials that make up Earth. (ES)
	E.1.10.2 Communicate solutions that will reduce the impact of humans on the use and quality of water in the local environment.	**Eco Awareness:** We can show that we are eco aware by practicing the three R's of reduce, reuse, and recycle as well as being sensitive to the needs of the other living things that share the environment with us. (LS)
	E.1.10.3 Create a device that will collect free water to meet a human need (e.g., household drinking water, watering plants/animals, cleaning). Use an engineering design process to define the problem, design, construct, evaluate, and improve the device.	

Book Key: **I: Inquiry** **PS: Physical Science** **LS: Life Science** **ES: Earth Science**

GRADE TWO: Life Science

L.2.1 Hierarchical Organization

Conceptual Understanding: Animals have unique physical and behavioral characteristics that enable them to survive in their environment. Animals can be classified based on physical characteristics.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
L.2.1 Students will demonstrate an understanding of the classification of animals based on physical characteristics.	L.2.1.1 Compare and sort groups of animals with backbones (vertebrates) from groups of animals without backbones (invertebrates).	**Animals:** Animals are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS)
	L.2.1.2 Classify vertebrates (mammals, fish, birds, amphibians, and reptiles) based on their physical characteristics.	**Animals:** Animals are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS)
	L.2.1.3 Compare and contrast physical characteristics that distinguish classes of vertebrates (i.e., reptiles compared to amphibians).	**Animals:** Animals are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS)
	L.2.1.4 Construct a scientific argument for classifying vertebrates that have unusual characteristics, such as bats, penguins, snakes, salamanders, dolphins, and duck-billed platypuses (i.e., bats have wings, yet they are mammals).	

Book Key: **I: Inquiry** **PS: Physical Science** **LS: Life Science** **ES: Earth Science**

GRADE TWO Theme: Systems, Order, and Organization

GRADE TWO: Life Science

L.2.2 Reproduction and Heredity

Conceptual Understanding: Plants and animals experience different life cycles as they grow and develop. Plants and animals exhibit predictable characteristics at each developmental stage throughout the life cycle.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
L.2.2 Students will demonstrate an understanding of how living things change in form as they go through the general stages of a life cycle.	L.2.2.1 Use observations through informational texts and other media to observe the different stages of the life cycle of trees (i.e., pines, oaks) to construct explanations and compare how trees change and grow over time.	
	L.2.2.2 Construct explanations using first-hand observations or other media to describe the life cycle of an amphibian (birth, growth/development, reproduction, and death). Communicate findings.	**Animals:** Animals are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS)

Book Key: **I: Inquiry** **PS: Physical Science** **LS: Life Science** **ES: Earth Science**

GRADE TWO: Life Science

L.2.3 Ecology and Interdependence

Conceptual Understanding: Animals thrive in environments where their needs (air, water, food, and shelter) are met. The environment where plants and animals live sometimes changes slowly and sometimes changes rapidly. If living things are unable to adapt to changes in the environment, they may not survive.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
L.2.3A Students will demonstrate an understanding of the interdependence of living things and the environment in which they live.	L.2.3A.1 Evaluate and communicate findings from informational text or other media to describe how animals change and respond to rapid or slow changes in their environment (fire, pollution, changes in tide, availability of food/water).	**Animals:** Animals are living things that have needs, reproduce, respond to their environment, and are made up of different parts. (LS)
	L.2.3A.2 Construct scientific arguments to explain how animals can make major changes (e.g., beaver dams obstruct streams, or large deer populations destroying crops) and minor changes to their environments (e.g., ant hills, crawfish burrows, mole tunnels). Communicate findings.	

Conceptual Understanding: All animals and plants need food to provide energy for activity and raw materials for growth. Animals and plants have physical features and behaviors that help them survive in their environment. All living things in an environment interact with each other in different ways and for different reasons.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
L.2.3B Students will demonstrate an understanding of the interdependence of living things.	L.2.3B.1 Evaluate and communicate findings from informational text or other media to describe and to compare how animals interact with other animals and plants in the environment (i.e., predator prey relationships, herbivore, carnivore, omnivore).	**Food Webs:** Food chains and food webs illustrate the flow of energy through a system of living things. (LS)
	L.2.3B.2 Conduct an investigation to find evidence where plants and animals compete or cooperate with other plants and animals for food or space. Present findings (i.e., using technology or models).	**Food Webs:** Food chains and food webs illustrate the flow of energy through a system of living things. (LS)

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GRADE TWO: Life Science

L.2.4 Adaptations and Diversity

Conceptual Understanding: Living things need air, food, water, and space to survive. Different environments support different types of plants and animals. Animals have adaptations allowing them to grow and survive in the climate of their specific environment.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
L.2.4 Students will demonstrate an understanding of the ways animals adapt to their environment in order to survive.	L.2.4.1 Evaluate and communicate findings from informational text or other media to describe how plants and animals use adaptations to survive (e.g., ducks use webbed feet to swim in lakes and ponds, cacti have waxy coatings and spines to grow in the desert) in distinct environments (e.g. Polar lands, saltwater and freshwater, desert, rainforest, woodlands).	**Habitats:** A habitat is made up of the living and non-living things an animal or plant needs to thrive. (LS)
	L.2.4.2 Create a solution exemplified by animal adaptations to solve a human problem in a specific environment (e.g., snowshoes are like hare's feet or flippers are like duck's feet). Use an engineering design process to define the problem, design, construct, evaluate, and improve the solution	

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GRADE TWO: Physical Science

P.2.5 Organization of Matter and Chemical Interactions

Conceptual Understanding: Matter exists in different states, including solid, liquid, and gas forms. Solids have a definite shape, weight, and size (length). Liquids have a definite size (volume) but not a definite shape. A gas has neither definite shape nor size (volume). Changes to matter can result from changes in temperature. Some changes may or may not be reversible (i.e., melting or freezing versus burning a cake).

Standard	Performance Objectives:	Science4Us Instructional Module(s)
P.2.5 Students will demonstrate an understanding of the properties of matter	P.2.5.1 Conduct a structured investigation to collect, represent, and analyze categorical data to classify matter as solid, liquid, or gas. Report findings and describe a variety of materials according to observable physical properties (e.g., size, color, texture, opacity, solubility).	**States of Matter:** On Earth matter is found most commonly in three different phases: solid, liquid and gas. (PS) **Materials and Mixtures:** Everything around us is made up of different materials and can be combined to make mixtures. (PS)
	P.2.5.2 Compare and measure the length of solid objects using technology and mathematical representations. Analyze and communicate findings.	**Science Tools:** In science, a tool is something you use to collect data, or information. Scientists use tools to help them observe, describe, compare, measure, and communicate. (I) **Observing Matter:** Matter has properties that are described using qualitative and quantitative observations. (PS) **Materials and Mixtures:** Everything around us is made up of different materials and can be combined to make mixtures. (PS)
	P.2.5.3 Compare the weight of solid objects and the volume of liquid objects. Analyze and communicate findings.	**Science Tools:** In science, a tool is something you use to collect data, or information. Scientists use tools to help them observe, describe, compare, measure, and communicate. (I) **Observing Matter:** Matter has properties that are described using qualitative and quantitative observations. (PS) **Materials and Mixtures:** Everything around us is made up of different materials and can be combined to make mixtures. (PS) **States of Matter:** On Earth matter is found most commonly in three different phases: solid, liquid and gas. (PS)
	P.2.5.4 Construct scientific arguments to support claims that some changes to matter caused by heating can be reversed, and some changes cannot be reversed	**Changes in Matter:** Solids, liquids and gases can undergo changes based on the physical and chemical properties of the matter. (PS)

Book Key: **I: Inquiry** **PS: Physical Science** **LS: Life Science** **ES: Earth Science**

GRADE TWO: Physical Science

P.2.6 Motions, Forces, and Energy

Conceptual Understanding: An object at rest will stay at rest unless it is pushed or pulled by an unbalanced force. Pushes and pulls can have different strengths, directions, or speeds. Friction occurs when two objects make contact. Friction can change the motion of an object, the speed of an object, and can also create heat. Friction can be increased or decreased.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
P.2.6 Students will demonstrate an understanding of how the motion of objects is affected by pushes, pulls, and friction on an object.	P.2.6.1 Conduct a structured investigation to collect, represent, and analyze data from observations and measurements to demonstrate the effects of pushes and pulls with different strengths and directions. Communicate findings (e.g., models or technology).	**Force:** Force, a push or a pull, is needed to change the position of an object. (PS)
	P.2.6.2 Generate and answer questions about the relationship between (1) friction and the motion of objects and (2) friction and the production of heat.	**Motion:** Motion is a change in position and can be measured by distance and time. (PS)
	P.2.6.3 Develop a plan to change the force (push or pull) of friction to solve a human problem (e.g., improve the ride on a playground slide or make a toy car or truck go faster). Use an engineering design process to define the problem, design, construct, evaluate, and improve the plan.*	**Motion:** Motion is a change in position and can be measured by distance and time. (PS)

Book Key: **I: Inquiry** **PS: Physical Science** **LS: Life Science** **ES: Earth Science**

GRADE TWO: Earth and Space Science

E.2.8 Earth and the Universe

Conceptual Understanding: Patterns of the Sun, Moon, and stars can be observed, described, and predicted. The sun is the source of heat and light for the solar system. Seasonal changes occur as the Earth orbits the Sun because of the tilt of the Earth on its axis. At night, one can see light from stars and sunlight being reflected from the moon. Telescopes make it possible to observe the Moon and the planets in greater detail. Space exploration continues to help humans understand more about the universe.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
E.2.8 Students will demonstrate an understanding of the appearance, movements, and patterns of the sun, moon, and stars.	E.2.8.1 Recognize that there are many stars that can be observed in the night sky and the Sun is the Earth's closest star.	**Earth in Space:** Earth's motion and position in space results in predictable patterns of change, including day/night, seasons and the phases of the Moon. (ES) **Exploring the Universe:** We use special tools to observe the galaxies, stars, and solar systems found in the Universe. (ES)
	E.2.8.2 With teacher guidance, observe, describe, and predict the seasonal patterns of sunrise and sunset. Collect, represent, and interpret data from internet sources to communicate findings.	**Earth in Space:** Earth's motion and position in space results in predictable patterns of change, including day/night, seasons and the phases of the Moon. (ES)
	E.2.8.3 Observe and compare the details in images of the moon and planets using the perspective of the naked eye, telescopes, and data from space exploration.	**Exploring the Universe:** We use special tools to observe the galaxies, stars, and solar systems found in the Universe. (ES)
	E.2.8.4 With teacher support, gain an understanding that scientists are humans who use observations and experiments to learn about space. Obtain information from informational text or other media about scientists who have made important discoveries about objects in space (e.g., Galileo Galilei, Johannes Kepler, George Ellery Hale, Jill Tarter) or the development of technologies (e.g., various telescopes and detection devices, computer modeling, and space exploration).	**Exploring the Universe:** We use special tools to observe the galaxies, stars, and solar systems found in the Universe. (ES)
	E.2.8.5 Use informational text and other media to observe, describe and predict the visual patterns of motion of the Sun (sunrise, sunset) and Moon (phases).	**Earth in Space:** Earth's motion and position in space results in predictable patterns of change, including day/night, seasons and the phases of the Moon. (ES)
	E.2.8.6 Create a model that will demonstrate the observable pattern of motion of the Sun or Moon. Use an engineering design process to define the problem, design, construct, evaluate, and improve the model.	**Earth in Space:** Earth's motion and position in space results in predictable patterns of change, including day/night, seasons and the phases of the Moon. (ES)

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GRADE TWO: Earth and Space Science

E.2.10 Earth's Resources

Conceptual Understanding: Earth is made of different materials, including rocks, sand, soil, and water. An Earth material is a resource that comes from Earth. Earth materials can be classified by their observable properties. Human life and health are heavily dependent on these materials. Understanding how to best conserve these resources will continue to be a major challenge for humans.

Standard	Performance Objectives:	Science4Us Instructional Module(s)
E.2.10 Students will demonstrate an understanding of how humans use Earth's resources.	E.2.10.1 Use informational text, other media, and first-hand observations to investigate, analyze and compare the properties of Earth materials (including rocks, soils, sand, and water). .	**Materials:** Rocks, water, and soil are some of the materials that make up Earth. (ES)
	E.2.10.2 Conduct an investigation to identify and classify everyday objects that are resources from the Earth (e.g., drinking water, granite countertops, clay dishes, wood furniture, or gas grill).Classify these objects as renewable and nonrenewable resources.	**Materials:** Rocks, water, and soil are some of the materials that make up Earth. (ES)
	E.2.10.3 Use informational text and other media to summarize and communicate how Earth materials are used (e.g., soil and water to grow plants; rocks to make roads, walls or building; or sand to make glass).	**Materials:** Rocks, water, and soil are some of the materials that make up Earth. (ES)
	E.2.10.4 Use informational text, other media, and first-hand observations to investigate and communicate the process and consequences of soil erosion	**Features:** Earth's features are the natural shapes on the Earth's crust. Made up of rock or water, they change due to weathering and erosion. (ES)
	E.2.10.5 With teacher guidance, investigate possible solutions to prevent or repair soil erosion.	

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Implementation Guide

MDE receives support from an implementation manager. The implementation manager is assigned to schedule professional learning and to provide implementation support. The support includes, but is not limited to, the following:

Implementation planning and goal-setting: The implementation manager collaborates with MDE leadership to establish implementation goals and a plan for meeting those goals. The implementation plan is reviewed periodically to monitor progress and adjust as needed. The key objectives are to get ExploreLearning instructional solutions into the hands of teachers and ensure that they have the knowledge and skills they need for successful implementation in their classrooms.

Initial training and account distribution: Initial workshops are offered for new MDE teachers or teachers who are new to implementing ExploreLearning Science4Us. Professional development is delivered onsite or via live or recorded webinar as appropriate for each teaching and learning scenario. Additional opportunities for higher-level workshops are available following initial workshop delivery.

Communication with district administrators: Implementation meetings are held periodically to inform the MDE district team of the implementation status and professional development activities.

Periodic usage report distribution and evaluation: The implementation manager provides regular usage reports to MDE district leaders and other stakeholders, works with district leaders to identify teachers and schools needing assistance, and collaborates with MDE school administrators to schedule the appropriate support.

The chart below outlines initial implementation activities and corresponding timeline, providing a clear overview of each phase and its intended outcomes

Timeline	Activity	Expected Outcomes
0–2 weeks	• Collaborative implementation planning with all stakeholders • Initial program set up • Develop roster protocol • Finalize integration	• Customized implementation plan • System readiness confirmed
2–4 weeks	• Access educator and administrator professional learning requirements • Establish professional development logistics • Organize training assets • Assist with product-specific administration and access	• Resources prepared • District ready to launch immediately following initial professional learning

Timeline	Activity	Expected Outcomes
2–5 weeks	• Coordinate professional learning availability and timeline • Determine whether resource customization is needed based on the district's needs and goals • Determine attendee feedback procedure • Communicate results and status of next steps to district stakeholders	• Teachers and administrators receive comprehensive training using cutting-edge, relevant materials to ensure an optimal learning experience and maximize the effectiveness of the program • Students prepared to engage with ExploreLearning digital solutions
8–12 weeks	• Enhance instructional planning and strategy through higher-level professional learning opportunities. • Provide opportunities for implementation feedback • Hold an Implementation Meeting to discuss implementation progress and updates	• Teachers and administrators have demonstrated proficiency in utilizing program features effectively within instruction, leading to improved student learning in math and science • Educators provided opportunities to ask clarifying questions about implementing with fidelity • All stakeholders will be aligned on where the implementation stands and united in planning next steps
12+ weeks	• Regular usage evaluation and implementation monitoring • Adjust implementation plan to reflect areas of focus and/or changes in district initiatives • Collaboration with the district to assess the impact on student learning using qualitative and quantitative measures	• Strategic intervention and focus informed by data-driven insights • All stakeholders remain aligned on where the implementation stands and united in planning next steps • Student learning is enhanced with the prescribed use of ExploreLearning programs

ExploreLearning offers many tools that help teachers and administrators support strong implementations of our products. ExploreLearning provides a Setting the Foundations overview for participants to learn the basics of our products, how the solutions are best incorporated into a blended classroom, and what they can help teachers accomplish. This is provided through introductory workshops and annual refresher workshops for teachers who need help getting started with ExploreLearning Science4Us.

Training Opportunities

- Complimentary on-demand videos and webinars within each product
- Educator Insights Series features strategies from innovators in math, science, and professional development

Information Toolkits and User Guides

- Teacher Resource Hub includes how-to videos and resources, course catalogues, and ideas for extending instruction
- Administrator Resource Hub provides videos and resources made for administrators

Social Media Accounts

- X (formerly Twitter): @ExploreLearning
- Facebook: ExploreLearningK12STEMSolutions; ExploreLearningScience4Us
- Instagram: @science4usel

Additionally, our blog highlights implementation ideas, teacher spotlights, case studies, and more.

Services Provided Within United States

> **The publisher or vendor must deliver all services associated with this contract from an office in the United States. Please confirm your acceptance of this requirement and specify any locations outside the State of Mississippi where you plan to offer the services outlined in this contract solicitation.**

ExploreLearning implements its instructional resources and professional development in all 50 states and across 80 countries worldwide. Our online products are all contained in a Tier IV enterprise data center located in the United States. Customer education records will be stored in a Tier IV data center in Texas with a backup site in Michigan. We have several current processes and policies for host site security.

We passionately support the ultimate goal of making all products as accessible as possible and look forward to sharing more information as additional enhancements and/or new features are implemented.

To see an overview of Science4Us' accessibility features, visit the following link: Accessibility Features in Science4Us.

> **vi. Privacy-data security specifications**

We are committed to enabling the accessibility of our services and protecting the privacy of website visitors. We collect a minimal amount of personally identifiable information (PII) for students and educators. We do not share PII or any aggregate information with third parties. We do not use PII for any commercial purpose except to support the school or school system in its efforts to educate its students. Our staff is not authorized to disclose student login information or usage information, and information regarding student login credentials is strictly controlled by the teachers.

- Visit the following link for ExploreLearning's complete policy: Privacy Statement.

ExploreLearning products require a unique username/password combination for access to the system via the Internet. The application and back-end systems are protected by various firewalls and VLAN implementations to protect the user data.

> **vii. Browser and OS support**

ExploreLearning products run on devices with the following recommended settings:

- **Devices:** ExploreLearning products are accessible via a web browser on most Chromebooks, Macs, PCs, and mobile devices.
- **Web Browser:** The latest versions of Chrome, Microsoft Edge, Firefox, or Safari
- **Sound capability:** Speaker or headphones available
- **Display Size:** 1024 x 768 or higher
- **Memory:** Due to the graphics-intensive nature of the systems, we recommend 4 GB of RAM for devices and a minimum of 2 GB.

> **b. LMS is a generic term for platforms like Canvas, Google, and Schoology. A software platform designed to manage, deliver, and track educational courses, training programs, or learning and development initiatives. It provides educators with tools to create and organize content, manage student enrollments, track progress, assess performance, and facilitate communication between instructors and learners. LMSs often include discussion forums, assignment submissions, quizzes, grading, and reporting.**

ExploreLearning products can be accessed via an LMS link, which allows users to access specific products. ExploreLearning provides LTI-based Single Sign-On (SSO) through which Canvas users may directly access the ExploreLearning site without additional logins.

> **c. ClassGather offers customers access to their digital instructional materials through direct integrations with publisher platforms. As a certified integration partner, ClassGather supports roster exchange with publishers via OneRoster (CSV or API) and SSO access via SAML, oAuth, or LTI. Through automated resource assignment, access to digital titles is provisioned at the time of purchase, so student and teacher access "just works" without additional content or integration configuration.**

ExploreLearning products integrate with many LMS via LTI and also offer ADFS-Based SAML SSO or Clever InstantLogin. We can also process OneRoster v1.1 CSV roster uploads or OneRoster API uploads through Classlink or Clever to automatically upload teachers, students, and classes.