



Course Description
Grades K-2
National (NGSS)



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Disciplinary Core Idea: PS1 Matter and its Interactions

Matter and Its Interactions

Description: Students will learn that different kinds of matter exist that can be described and classified by their properties; matter can be solid, liquid, or gas, depending on temperature; heating and cooling can cause changes in matter which may or may not be reversible.

Unit 1

Describing Objects (Suggested Grade Level: K)

Instruction Module

In this Instruction Module, students learn that objects can be described and compared with each other based on their size, shape, and mass. They learn to describe objects as heavy, light, big, and small. They are introduced to the basic concepts of mass and volume. The students also learn that objects can change properties by heating and cooling. They can freeze, melt, and evaporate. They can be solid, liquid, or gas.

Interactivity (Integrated within the IM)

In the Interactivity, students follow instructions and learn how to compare different objects based on their size and mass. The students compare two objects at a time and tell if the objects are bigger or smaller, and heavier or lighter.

Glossary

Describing Objects

Quiz

The questions in the assessment section test students' ability to identify and compare the physical properties of objects including size, mass, color, texture, and state. They also test their ability to recognize changes caused by heating or cooling.

Teacher Resources

Describing Objects



Unit 2	Sorting and Changing Matter (Suggested Grade Level: 1)
Instruction Module	In this Instruction Module, students learn to classify matter by recognizing properties such as size, mass, color, and texture. Students also observe the changes that occur in matter when heated or cooled: melting and freezing.
Interactivity	Sort Them!: In this Interactivity, students classify objects based on their physical properties of mass, size, shape, and color.
Glossary	Sorting and Changing Matter
Quiz	The questions in the assessment section test student' understanding of the following concepts: basis on which matter is sorted, properties of matter such as color and changes that occur in matter.
Teacher Resources	Sorting and Changing Matter
Unit 3	Physical Properties of Matter (Suggested Grade Level: 2)
Instruction Module	In this Instruction Module, students recognize that all things are made of matter. They are introduced to the physical properties of matter including shape, relative mass, relative temperature, texture, flexibility, and whether a material is a solid, liquid, or gas. They learn that these physical properties help us to describe, identify, and classify matter.
Interactivity	Physical Properties of Matter: The Interactivity is a virtual experiment in which students “use” a double pan balance to compare masses and classify them as “heavier” or “lighter” than a given object. Then, they compare their temperatures and classify them as “warm”, “cold”, or “normal”. Finally, they “use” a magnet to classify the objects as magnetic or nonmagnetic object.
Glossary	Physical Properties of Matter



Quiz	The questions in the assessment section test students' understanding of the following concepts: physical properties of matter including shape, relative temperature, texture, and states of matter.
Teacher Resource	Physical Properties of Matter
Unit 4	Changes in Matter (Suggested Grade Level: 2)
Instruction Module	In this Instruction Module, students are presented with examples to demonstrate that cutting, folding, sanding, freezing, or melting changes the physical properties of objects but does not change the matter that makes up the object. They observe and compare changes caused by heating and cooling. They recognize that heating can sometimes change the matter that the object is made of.
Interactivity	Changes in Matter: The Interactivity is a virtual experiment in which students predict the changes that may be caused by heating and cooling different materials. Then, they place the materials in the oven and the freezer and observe the changes caused by heating and cooling.
Glossary	Changes in Matter
Quiz	The questions in the assessment section test students understanding of the following concepts: changes caused by folding, heating and cooling (evaporation, melting, freezing, and changes in temperature).
Teacher Resources	Changes in Matter
Unit 5	Introduction to Mixtures (Suggested Grade Level: 2)
Instruction Module	In this Instruction Module, students learn that materials with different physical properties physically combine to form a mixture. They also observe how different materials when put together, may have functions that the parts could not do by themselves. They learn to select the right materials for the right job based on the physical properties of the materials.



Interactivity	Introduction to Mixtures: The Interactivity is an experiment wherein the students use various materials with different physical properties to create a combination that serves a particular function. They test the properties of the various materials provided to select the right material.
Glossary	Introduction to Mixtures
Quiz	The questions in the assessment section test students understanding of the following concepts: physical properties of objects, functions of different materials, identifying mixtures.

Teacher Resources Introduction to Mixtures

Disciplinary Core Idea: PS2 Motion and Stability: Forces and Interactions

Forces, Motion, and Interactions

Description: Students will learn that there are different kinds of forces (pushes and pulls); forces can have different strengths and directions; forces on an object can start or stop its motion, and change the direction and speed; objects can move in different ways.

Unit 1

Attractions

(Suggested Grade Level: K)

Instruction Module

In this Instruction Module, students are introduced to magnets. They recognize that magnets attract some objects such as refrigerator doors and paper clips that contain iron. They learn that magnets are of different shapes and sizes and have two ends which are usually colored differently; different colored ends (unlike poles) attract each other and similar colored ends (like poles) repel each other.

Interactivity(Integrated within the IM)

A simple interactive section, in which students predict which objects are attracted to magnets, is integrated within the main section of the Instruction Module.



Glossary

Attractions

Quiz

The questions in the assessment section test student' understanding of the following concepts: objects that are attracted to magnets, and attraction and repulsion between two magnets.

Teacher Resources

Attractions

Unit 2

Magnets - Push or Pull? (Suggested Grade Level: 1)

Instruction Module

In this Instruction Module, students recognize that force and motion are part of everyday life and magnets can exert force. They recognize that magnets have two poles and that opposite poles attract each other while similar poles repel each other. They learn that magnets can be used to push or pull objects.

Interactivity

Push and Pull: In the Interactivity, students identify objects that are attracted to magnets. They “use” a magnet to pick up the magnetic objects. Then, they use a magnet to attract and repel other magnets in order to “collect” them.

Glossary

Magnets – Push or Pull?

Quiz

The questions in the assessment section test students' understanding of the following concepts: force, magnets, and magnetic attraction and repulsion.

Teacher Resources

Magnets – Push or Pull?

Unit 3

Using Magnets (Suggested Grade Level: 2)

Instruction Module

In this Instruction Module, students observe the use of magnets in everyday life. They learn about the different uses of magnets, where to find magnets, and how magnets work. They observe how magnets attract and repel each other.



Interactivity	Magnetizing a Needle: In the Interactivity, students learn how to make a magnet and identify the two poles through careful observation. Safety measures while doing an experiment is emphasized.
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Glossary Using Magnets

Quiz	The questions in the assessment section test the students' understanding of the following concepts: identifying objects that are attracted to a magnet and objects that use magnets, and using scientific vocabulary.
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Teacher Resources Using Magnets

Unit 4	Place and Location (Suggested Grade Level: K)
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Instruction Module In this Instruction Module, students learn that every object has a location. They are introduced to the concept of location and that an object's location can be described in relation to another object. Students learn to identify locations such as above, below, behind, beside, and in front of, in relation to other objects.

Interactivity(Integrated within the IM)	In the Interactivity, students identify the locations of various objects in a playground in relation to a slide. The interactivity is integrated within the Instruction Module.
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Glossary Place and Location

Quiz	The questions in the assessment section test students' understanding of the following concept: locations of objects in relation to other objects.
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Teacher Resources Place and Location



Unit 5	Moving Objects (Suggested Grade Level: K)
Instruction Module	In this Instruction Module, students are introduced to the movement of objects. They recognize and learn about different types of movement. They observe objects that move straight, round and round, up and down, and in a zigzag manner. They are also introduced to the fast and slow movement
Interactivity(Integrated within the IM)	In this interactive section, students are shown zigzag, straight, and round paths that lead to different destinations. They observe the shape of the paths and decide the kind of motion required to reach the destination. The interactivity is integrated within the Instruction Module.
Glossary	Moving Objects
Quiz	The questions in the assessment section test student' understanding of the following concepts: fast and slow moving objects and different kinds of motion.
Teacher Resources	Moving Objects
Unit 6	How Do They Move? (Suggested Grade Level: 1)
Instruction Module	In this Instruction Module, students observe various moving objects in a fair including a Ferris wheel, a pendulum boat, pigs in a race, and a cable car, and identify how they are moving. They recognize the different ways in which objects can move such as, in a straight line, up and down, back and forth, round and round, and fast and slow. They learn to describe the change in the location of an object using words such as closer to, nearer to, and farther from.
Interactivity	Moving Animals: In the Interactivity, students observe animals moving in different ways and identify the words that describe the movement of each animal.
Glossary	How Do They Move?
Quiz	The questions in the assessment section test students' understanding of the following concepts: words used to describe the movement of objects, patterns or traces made by moving objects, and objects that move in different ways.



Teacher Resources How Do They Move?

Unit 7	On the Move (Suggested Grade Level: 2)
Instruction Module	In this Instruction Module, students observe the changes in position of a moving object. They learn to mark and record the distance an object moves. Students also learn and observe the different kinds of motion in objects, such as a cup rolling and a ruler sliding.
Interactivity	On the Move: The interactivity is designed as an experiment that allows a student to observe and record the movement of different objects by tracing their motion on a white sheet of paper. This is done by allowing the student to “dip” an object in paint and then letting it slide down a ramp to trace a path on a white sheet of paper.
Glossary	On the Move
Quiz	The questions in the assessment section test student’ understanding of the following concepts: force, types of motion, instruments used to measure distance, and position.

Teacher Resources On the Move

Disciplinary Core Idea: PS3 Energy

Energy and Energy Transfer

Description: Students will learn that energy exists in many forms such as light, sound, and thermal energy, which we can perceive using our senses of sight, hearing, and touch; we use energy in various ways, including cooking, keeping ourselves warm, seeing objects, and for communicating with each other; energy can cause changes in matter including changes in state.

Unit 1	See, Feel, and Hear (Suggested Grade Level: K)
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Instruction Module In this Instruction Module, students are introduced to light energy, heat energy, and sound energy. They are made to recognize some common sources of these three types of energy, and to understand how energy is observed through the senses of sight, touch, and hearing. They are familiarized with the concept that light, heat, and sound energy can be sensed using different sense organs—eyes, skin, and ears respectively.

Interactivity(Integrated within the IM) A simple interactive section, in which students predict which senses are used to observe certain forms of energy, is integrated within the main section of the Instruction Module.

Glossary See, Feel, and Hear

Quiz The questions in the assessment section test the students’ understanding of the sources and the senses associated with light energy, heat energy, and sound energy.

Teacher Resources See, Feel, and Hear

Unit 2

Energy and Its Uses (Suggested Grade Level: 1)

Instruction Module In this Instruction Module, students learn the concept of energy and its importance in everyday life. They are also introduced to three forms of energy, namely light energy, heat energy, and sound energy, and the uses of each of the three forms. They understand that while the different forms of energy cannot be touched, they can be experienced in many ways; light energy can be seen, heat energy can be felt, and sound energy can be heard.

Interactivity **Energize!** : In the Interactivity, students are required to “energize” various objects in a toy house by identifying the type(s) of energy each of them uses or gives out.

Glossary Energy and Its Uses

Quiz The questions in the assessment section test students’ understanding of the following concepts: the form(s) of energy objects use or give out, and which sense helps us experience one of the forms of energy.



Teacher Resources

Energy and Its Uses

Unit 3	Effect of Energy on Matter (Suggested Grade Level: 2)
Instruction Module	In this Instruction Module, students observe how increasing or decreasing amounts of light, heat, and sound energy affect various objects. They investigate the effects of light energy on brightness, sound energy on loudness and softness, and investigate how the amount of heat energy can make some things melt or freeze.
Interactivity	Increasing Heat Energy: The Interactivity is an experiment wherein students investigate how increasing or decreasing heat energy can affect objects. They identify the change in energy needed to cause a particular change in an object, observing the time taken to melt different materials.
Glossary	Effect of Energy on Matter
Quiz	The questions in the assessment section test students understanding of the following concepts: changes caused by heating and cooling, effect and use of light energy, effect of sound energy on loudness and softness.

Teacher Resources

Effect of Energy on Matter

Disciplinary Core Idea: LS1 From Molecules to Organisms: Structures and Processes

Structure, Growth, and Development of Organisms

Description: Students will learn that all animals need food in order to live and grow; plants have parts that help them get water and light which they need to live and grow; plants and animals have life cycles.

Unit 1	Needs of Plants and Animals (Suggested Grade Level: K)
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Instruction Module	In this Instruction Module, students recognize the difference between living things and nonliving things based on their basic needs or lack of needs. The student learns that humans, animals, and plants are living things. They learn more about each of the needs of living things. Students are introduced to the concept of an offspring.
Interactivity(Integrated Within the IM)	In the Interactivity, students identify and categorize things on a farm into living things and nonliving things based on concepts covered in the lesson. The interactivity is integrated within the Instruction Module.
Glossary	Needs of Plants and Animals
Quiz	The questions in the assessment section test the students' understanding of the following concepts: differences between living and nonliving things, the basic needs of living things, identifying the basic need and identifying the offspring.
Expository Text Passage	Exploring What Scientists Do – Entomologists: Scientists Who Study Insects
Teacher Resources	Needs of Plants and Animals
Unit 2	Basic Needs of Living Things (Suggested Grade Level: 1)
Instruction Module	In this Instruction Module students learn the differences between living and nonliving things. They are made aware of the factors that make a thing living or nonliving. They learn the basic needs that help living things survive and grow.
Interactivity	Match 'em: In this Interactivity students match an organism with its food needs and shelter.
Glossary	Basic Needs of Living Things
Quiz	The questions in the assessment section test student' understanding of the following concepts: needs of plants, shelters of animals, differences between living and nonliving things.



Teacher Resources Basic Needs of Living Things

Unit 3	Parts of a Plant (Suggested Grade Level: 1)
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Instruction Module

In this Instruction Module, the students learn to identify the various parts of a plant. They do this by comparing the various parts of a plant, including the root, stem, leaf, flower, fruit, and seed. Students also learn how each plant part helps the plant by performing individual functions.

Interactivity

Backyard Bugs: In this interactivity, students learn the positions of the various plant parts by placing backyard bugs on the different parts of plants. Students also learn how each plant part helps the bugs in different ways, be it providing them with shelter or food.

Glossary

Parts of a Plant

Quiz

The questions in the assessment section test students' understanding of the following concepts: needs of a plant, the uses of plant parts, functions of plant parts, identifying the parts of a plant.

Expository Text Passage Structure and Function – The Parts of a Plant

Teacher Resources

Parts of a Plant

Unit 4	Fruit from a Seed (Suggested Grade Level: K)
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Instruction Module

In this Instruction Module, students understand the changes that a plant undergoes in its life cycle. They learn to identify a seed, a seedling, a flower, the fruit, the leaf, the stem, and the root of a plant. Students also understand that a plant needs sunlight, food, soil, and air to survive and grow. By comparing the adult plant with the young plant, students learn to identify the similarities and differences between the two.



Interactivity (Integrated within the IM)	In the Interactivity, students learn to identify the order and names of the different stages in the growth of a plant. They do this by putting the pictures of the stages in the life cycle of a pumpkin plant, in order, from seed to fruit. The interactivity is integrated within the Instruction Module.
Glossary	Fruit from a Seed
Quiz	The questions in the assessment section test students' understanding of the following concepts: stages in the life cycle of a plant, identifying a plant part, needs of a plant.
Expository Text Passage	Patterns and Properties – The Life Cycle of a Bean Plant
Teacher Resources	Fruit from a Seed

Unit 5	Life Cycle of Animals (Suggested Grade Level: 1)
Instruction Module	In this Instruction Module, students learn that a cycle is a repeating pattern of events and that a life cycle of an animal consists of different stages in its life such as birth, growth and reproduction. They learn to identify and describe the stages in the life cycle of different animals such as a chicken and a frog. They learn that some animals such as frogs and butterflies produce young that look very different from their parents while other animals such as birds and mammals produce young that closely resemble their parents. They also learn to compare the young of different animals with their parents.
Interactivity	One...Two...Three...Grow: In this Interactivity students apply their understanding of life cycles to match different young ones with their parents. They compare the physical features of the young with different sets of parents in order to make correct matches.
Glossary	Life Cycle of Animals



Quiz	The questions in the assessment section test student understanding of the following concepts: animal life cycles, stages in the life cycle of a frog and a butterfly.
Teacher Resources	Life Cycle of Animals
Unit 6	Life Cycles of Insects (Suggested Grade Level: 2)
Instruction Module	In this Instruction Module, students learn that the life cycles of some insects such as butterflies, ladybugs and moths include four distinct stages namely the egg, larva, pupa and adult. They learn that the life cycles of some other insects such as dragonflies, cockroaches and grasshoppers include three stages namely the egg, nymph and adult, and that the nymph resembles the adult. They compare and describe the different stages in the life cycle of an insect. They also understand that metamorphosis is the changes in form as an insect goes through the different stages of its life cycle.
Interactivity	Costume Mayhem!: In this Interactivity, students apply their knowledge and understanding of a butterfly life cycle. They observe the physical features of each stage in order to correctly identify it. Once all the stages are identified, students arrange the different stages in the correct order of occurrence.
Glossary	Life Cycles of Insects
Quiz	The questions in the assessment section test student understanding of the following concepts: different stages in a butterfly life cycle, metamorphosis, life cycle of a cockroach.
Expository Text Passage	Exploring What Scientists Do – Entomologists: Scientists Who Study Insects
Teacher Resources	Life Cycle of Insects



Disciplinary Core Idea: LS2 Ecosystems: Interactions, Energy, and Dynamics

Interdependent Relationships in Ecosystems

Description: Students will learn that plants and animals depend on each other and on the environment in order to live and grow.

Unit 1

Depending on Each Other (Suggested Grade Level: 1)

Instruction Module

In this Instruction Module, students learn about how living things in an environment depend on each other to meet their basic needs. They learn that animals depend on plants for food, air and shelter and plants depend on animals for spreading their seeds and sometimes for water and nutrients (as in the case of indoor plants). They also learn that animals sometimes depend on each other to meet their basic needs. They understand that plants convert energy from sunlight to a form that can be used by them and animals and that such an interdependence for energy can be depicted using diagrams called food chains.

Interactivity

Snap It Up!: In this Interactivity, students observe and record different examples of interdependence among plants and animals in a park, forest, and pond environment.

Glossary

Depending on Each Other

Quiz

The questions in the assessment section test student understanding of the following concepts: basic needs of plants and animals, food chains, interdependence among plants and animals to meet their basic needs.

Expository Text Passage

Organisms and Environments – Animals Need Homes

Teacher Resources

Depending on Each Other



Unit 2	Animals and Their Environments (Suggested Grade Level: 1)
Instruction Module	In this Instruction Module, students learn that animals have unique external features which help them survive in a particular environment. They learn to identify the external features that help each animal survive in its environment. Students also learn that different parts of the world have different environments and the animal's features are suited to that specific environment.
Interactivity	What Helps Me Survive?: In the Interactivity, students identify the correct external feature that will help an animal survive in its environment. They also learn to use the correct name of the feature for each animal
Glossary	Animals and Their Environments
Quiz	The questions in the assessment section tests students' understanding of the following concepts: unique external features of an animal, how the feature helps the animal survive, and the correct name of the feature.
Expository Text Passage	Exploring What Scientists Do – Entomologists: Scientists Who Study Insects
Teacher Resources	Animals and Their Environments
Unit 3	Living Things and their Environment (Suggested Grade Level: 2)
Instruction Module	In this Instruction Module, students learn the basic needs that living things need to survive. They learn factors in the environment that affect growth and behavior such as migration, hibernation, and dormancy of living things. Students also compare the different ways in which organisms depend on the environment and on other organisms. They learn how to draw food chains.
Interactivity	Build the Energy Bar: This is a simple interactivity that teaches a student the dependence of organisms on each other. This is done by asking the student to arrange organisms in the correct order in a given food chain.



Glossary

Living Things and Their Environment

Quiz

The questions in the assessment section test students understanding of the following concepts: needs of organisms, behavior with relation to the changes in environment, and dependence demonstrated through food chains.

Expository Text Passage

Mammals: Large and Small

Teacher Resources

Living Things and Their Environment

Disciplinary Core Idea: LS3 Heredity: Inheritance and Variation of Traits

Inheritance and Variation of Traits

Description: Students will learn that plants and animals inherit traits from their parents, which make them very much, but not exactly, like their parents.

Unit 1

Inherited Traits

(Suggested Grade Level: 2)

Instruction Module

In this Instruction Module, students learn that characteristics which are passed on from parent to offspring are called inherited traits. Students identify some inherited traits of animals, plants and human beings.

Interactivity

Test Your 'Pair'enting Skills: In this Interactivity, students apply their knowledge of inherited traits of animals and plants to select a trait from a list of inherited traits that an offspring inherits from its parents.

Quiz

The questions in the assessment section test student understanding of the following concepts: inherited traits in humans, plants, and animals, learned characteristics in humans and animals, differences between inherited traits and learned characteristics.



Teacher Resources	
Unit 2	Traits and Characteristics (Suggested Grade Level: 2)
Instruction Module	In this Instruction Module, students learn that characteristics that are passed on from parents to offspring are called inherited traits. They also learn that some behavioral characteristics in humans and animals that are not inherited and are a result of experiences, are called learned characteristics.
Interactivity	Sort The Pictures: In this Interactivity, students learn to distinguish between inherited traits and learned characteristics by identifying whether different pictures show inherited traits or learned characteristics of organisms.
Quiz	The questions in the assessment section test student understanding of the following concepts: inherited traits of organisms and learned characteristics in humans and animals.
Teacher Resources	

Disciplinary Core Idea: LS4 Biological Evolution: Unity and Diversity

Organisms: Unity and Diversity

Description: Students will learn that there are many different kinds of living things in an area, and they exist in different places on land and in water; plants and animals have special structures and behaviors that help them to survive in their environment.

Unit 1	Animal and Plant Adaptations (Suggested Grade Level: 2)
Instruction Module	In this Instruction Module, students learn that adaptations are physical and behavioral features that animals and plants have developed over time to help them survive in their environments. They learn that physical adaptations in animals are body parts such as fins, wings, feet, teeth, claws, beaks and body coverings, and behavioral adaptations include hibernation, migration and living in



communities. They learn that some of the physical adaptations in plants include stems, roots, leaves, vines, tendrils and flowers.

Interactivity	Animal and Plant Adaptations: In this Interactivity, students apply their understanding of animal and plant adaptations to identify the adaptations in different animals and plants. They also sort the different animal and plant adaptations into physical and behavioral adaptations.
Glossary	Animal and Plant Adaptations
Quiz	The questions in the assessment section test student understanding of the following concepts: physical and behavioral adaptations in animals, physical and behavioral adaptations in plants.
Expository Text Passage	Organisms and Environments – The Venus Fly Trap Mammals: Large and Small Structure and Function – The Parts of a Plant
Teacher Resources	Animal and Plant Adaptations

Unit 2	Plants and Animals (Suggested Grade Level: K)
Instruction Module	In this Instruction Module, students learn that plants and animals have physical characteristics that help them survive in their environment. They learn to identify different parts of a plant such as the roots, stem and leaves and learn about their functions. They learn that physical features of plants such as leaf shape can be used to sort plants into different groups. They also learn that physical characteristics of animals such as body coverings can be used to sort animals into different groups.
Interactivity(Integrated in the IM)	In the interactive section of this Instruction Module, students apply their understanding of plant and animal body parts by matching different plants and animals with their missing body parts. They also identify plants and animals based on where they live and their physical characteristics.



Glossary

Plants and Animals

Quiz

The questions in the assessment section test the students' understanding of the following concepts: parts of a plant and their functions, physical characteristics of animals, and sorting of plants and animals based on their characteristics.

Teacher Resources

Plants and Animals

Disciplinary Core Idea: ESS1 Earth's Place in the Universe

Earth's Place in the Universe

Description: Students will learn that there are many objects in the sky that can be observed described, and predicted, such as the patterns of the motion of the sun, moon, and stars in the sky.

Unit 1

Sky World
(Suggested Grade Level: 2)

Instruction Module

In this Instruction Module, students learn the changes that occur in the sky through the day. They observe the changes that occur during sunset and sunrise. They also observe how the sky changes from clear to cloudy. Students are made aware of the changing shapes of Moon in the night sky. They also observe stars.

Interactivity

Model-making: The Interactivity is a virtual experiment that traces the apparent movement of the Sun during a single day. It allows a student to mark the position of the Sun through the day, with respect to a fixed point. Students can drag and drop stickers onto a dome—which represents the sky—to mark the Sun's position at a particular time.

Glossary

Sky World

Quiz

The questions in the assessment section test students understanding of the following concepts: objects in the sky, patterns of objects in the sky, and the effect of clouds on weather.



Expository Text Passage

Observing Objects in the Sky – Exploring the Moon

Teacher Resources

Sky World

Disciplinary Core Idea: ESS2 Earth’s Systems

Earth's Systems

Description: Students will learn that there are systems in the natural world; patterns of change such as weather and climate can be used to make predictions; wind, water, and forces from within Earth constantly change Earth's surface; some changes are slow while some are rapid.

Unit 1

Daily Changes and Repeating Patterns (Suggested Grade Level: K)

Instruction Module

In this Instruction Module, students identify events that have repeating patterns such as changing seasons of the year, changes of objects in the sky such as the Sun and Moon that cause day and night, and changes in the shape of the moon that repeats every month.

Interactivity(Integrated within the IM)

Students know that the Sun, Moon, and seasons form a repeating pattern in the natural world. In this Interactivity, students identify and arrange some of the activities that they do throughout the day to form a repeating pattern.

Glossary

Daily Changes and Repeating Patterns

Quiz

The questions in the assessment section test students’ understanding of the following concepts: Identifying and describing daily patterns such as day and night and repeating patterns such as seasons and the changes in the shape of the moon.

Expository Text Passage

Exploring What Scientists Do – Meteorologists: Scientists Who Study Weather



Teacher Resources	Daily Changes and Repeating Patterns
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Unit 2	Weather Information (Suggested Grade Level: 1)
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Instruction Module	In this Instruction Module students describe weather and understand that weather information can be recorded by observing, measuring, and describing weather conditions such as hot or cold, clear or cloudy, calm or windy, and rainy or icy. They learn and demonstrate that air is all around us and wind is moving air which can be observed by the motion of objects.
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Interactivity	What to Wear? : In the Interactivity, students will demonstrate an understanding of how weather affects their daily lives by selecting appropriate clothing based on different weather conditions.
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Glossary	Weather Information
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Quiz	The questions in the assessment section test students' understanding of the following concepts: Observing wind as moving air, appropriate clothing based on weather conditions, recording weather conditions, measuring relative temperature using thermometers.
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Expository Text Passage	Exploring What Scientists Do – Meteorologists: Scientists Who Study Weather
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Teacher Resources	Weather Information
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Unit 3	Weather and the Water Cycle (Suggested Grade Level: 2)
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Instruction Module	In this Instruction Module, students learn to measure and record patterns in data and seasonal information to understand and predict the weather. They identify the importance of weather and the seasons on clothing and activities. They are introduced to different tools that measure and record the weather. They understand the processes in the water cycle, including evaporation, condensation, and precipitation, as connected to weather conditions.
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Interactivity	The Indoor Water Cycle: In this Interactivity, students first match clothing and activities with the correct seasons and then label the seasons. They also solve a jigsaw puzzle to complete pictures of seasonal cycle, water cycle, and the day and night cycle and label them.
Glossary	Weather and the Water Cycle
Quiz	The questions in the assessment section test students understanding of the following concepts: processes in the water cycle, reading patterns in data provided, effect of seasons on clothing.
Expository Text Passage	Exploring What Scientists Do – Meteorologists: Scientists Who Study Weather
Teacher Resources	Weather and the Water Cycle

Unit 4	Day and Night, and Seasons (Suggested Grade Level: 1)
Instruction Module	In this Instruction Module, students learn that there are different objects visible in the sky during the day and different objects visible at night. They observe the changes in the shape of objects in the sky during the day and during the night. They learn to differentiate seasons of the year based of activities, surroundings, and temperature.
Interactivity	What's the Season? : In the Interactivity, students identify the activities performed during the course of the day and the greetings that are associated with different times of the day. They identify and differentiate the activities associated with the different seasons.
Glossary	Day and Night, and Seasons
Quiz	The questions in the assessment section test the students' understanding of the following concepts: appearance and shape of objects in the sky and the time of day, seasons of the year and distinct features associated with each season.
Expository Text Passage	Observing Objects in the Sky – Exploring the Moon



Teacher Resources	Day and Night, and Seasons
Unit 5	Soil Formation (Suggested Grade Level: 2)
Instruction Module	In this Instruction Module, students are introduced to the various components of soil and learn to differentiate between sand, silt, and clay based on particle size and texture. Students learn how soils are formed by weathering of rock and the decomposition of plant and animal remains.
Interactivity	What's in the Soil?: In this Interactivity, students identify the different components of soil in a soil sample.
Quiz	The questions in the assessment section test students' understanding of the following concepts: formation of soil, the different components of soil, and the physical properties of soil including color, texture, and particle size.
Unit 6	Earth's Ever-changing Surface (Suggested Grade Level: 2)
Instruction Module	In this Instruction Module students learn about the rapid changes in Earth's surface caused by volcanic eruptions, earthquakes, and landslides. They learn about tectonic plates and faults. They learn how plate movements can cause earthquakes. They learn how earthquakes can sometimes cause tsunamis and landslides. They observe and recognize the changes in Earth's surface cause by the movement of glaciers, such as U-shaped valleys and lakes.
Interactivity/ Simulation	Earth's Ever-Changing Surface: In this Interactivity, students are presented with "before" and "after" pictures of landforms changed by earthquakes, volcanoes, and glaciers. The students identify the natural forces that changed them. How Volcanoes Change the Earth: In this simulation students will observe how the thickness of the magma and the amount of dissolved gases it contains affects the type of eruption and the structure of the volcano.
Quiz	The questions in the assessment section test students' understanding of the following concepts: the various natural forces that change the surface of the Earth and the features that they form, including earthquakes, landslides, avalanches, and tsunamis.



Teacher Resources

Unit 7	Landforms (Suggested Grade Level: 2)
Instruction Module	In this Instruction Module, students are introduced to the different landforms on Earth, including mountains, hills, valleys, and plains. They learn about the landforms formed by water such as beaches, bays, deltas, caves, lakes, islands, archipelagos, and peninsulas.
Interactivity	Jamie and the Jigsaw Puzzle: In this Interactivity, students complete a jigsaw puzzle by identifying landforms based on clues or descriptions.
Quiz	The questions in the assessment section test students' understanding of the following concepts: different landforms including mountains, rivers, plateaus, plains, islands, archipelagos, hills, deserts, continents, and the forces that created them.

Teacher Resources

Disciplinary Core Idea: ESS3 Earth and Human Activity

Natural Resources and Human Activity

Description: Students will learn that humans use natural resources such as rocks, soil, and water, for everything they do; things that people do can affect these resource but they can make choices that reduce their impacts.

Unit 1	Describing Rocks (Suggested Grade Level: K)
Instruction Module	In this Instruction Module, students observe that rocks come in different shapes, sizes, colors, and textures. By comparing the characteristics of different rocks, they learn to sort them into the various categories. Students also understand the different uses of rocks and soils by learning about the numerous ways in which rocks help us in our daily lives.
Interactivity(Integrated within the IM)	In this interactivity, students understand the different characteristics of rocks by identifying and sorting rocks on the basis of their properties. Students demonstrate an understanding of properties by selecting a specific rock based on its properties. The interactivity is integrated within the



Instruction Module.

Glossary Describing Rocks

Quiz The questions in the assessment section test students' understanding of the following concepts: characteristics of rocks, objects made form rocks, sorting rocks by their properties.

Teacher Resources Describing Rocks

Unit 2 **Describing Water** (Suggested Grade Level: K)

Instruction Module In this Instruction Module, students observe and describe physical properties of water including color and clarity. They learn that water is found in different forms such as clouds, rain, snow and ice. They also identify natural sources of water such as lakes, rivers and oceans and classify them as freshwater and salt water. Students recognize that water is very useful and is used for a variety of purposes such as drinking, washing, cooking, cleaning and farming.

Interactivity(Integrated within the IM) In the Interactivity, students describe the different physical properties of water. The interactivity is integrated within the Instruction Module.

Glossary Describing water

Quiz The questions in the assessment section test students' understanding of the following concepts: Uses of water, forms of water, physical properties of water, and sources of natural water.

Teacher Resources Describing Water



Unit 3	Using Rocks, Soil, and Water (Suggested Grade Level: 1)
Instruction Module	In this Instruction Module, students will learn to identify and compare the color, composition, and the different layers of soil, and sort components of soil such as sand, silt, and clay based on size and texture. They also learn to identify different sources of water such as lakes, streams, rivers, and oceans, and identify useful products formed from rocks, soil, and water.
Interactivity	Using Rocks Soil and Water: In the Interactivity, students Identify and group objects as water product, soil product, and rock product.
Glossary	Using Rocks, Soil, and Water
Quiz	The questions in the assessment section test students' understanding of the following concepts: Describing texture of soils, Identifying components of soil based on size, Identifying and describing rocks, soil and water.
Expository Text Passage	The Three R's of Conservation: Reduce, Reuse, Recycle
Teacher Resources	Using Rocks, Soil, and Water
Unit 4	Natural Resources (Suggested Grade Level: 2)
Instruction Module	In this Instruction Module, students learn that rocks are found everywhere and can be described and classified based on their physical properties such as size, texture, and color; They also learn to identify and compare the properties of natural sources of freshwater and saltwater; and distinguish between natural and manmade resources.
Interactivity	Get Resourceful!: In the Interactivity, students identify and classify resources as natural and man-made resources.
Glossary	Natural Resources
Quiz	The questions in the assessment section test students' understanding of the following concepts: Identify between natural and man-made resources, describing rocks based on physical properties, identifying natural sources of freshwater and saltwater.



**Expository Text
Passage**

The Three R's of Conservation: Reduce, Reuse, Recycle

Teacher Resource

Natural Resources