



Grade 3 Science Curriculum

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Unit #/Title	1/Solar System	Time Frame	3 weeks
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Stage 1 - Identify Desired Results

Standards

- 3.3.4.B2** Patterns – Explain time (days, seasons) using solar system motions.
- 3.4.3.E1** Identify the technologies that support and improve quality of life.
- 3.3.3.B1** Relate the rotation of the earth and day/night, to the apparent movement of the sun, moon, and stars across the sky. Describe the changes that occur in the observable shape of the moon over the course of a month.
- 3.3.4.B1** Identify planets in our solar system and their basic characteristics. Describe the earth's place in the solar system that includes the sun (a star), planets, and many moons. Recognize that the universe contains many billions of galaxies and that each galaxy contains many billions of stars.

Big Ideas

- The objects in our solar system move in regular and predictable patterns that can be observed, recorded and analyzed.

Essential Questions

- How is the solar system like a family?
- How does the solar system impact day and night and climate depending upon where I live?
- What is Earth's place in the solar system?
- How does rotation and revolution affect the Earth?

Content

- The sun, Earth's star, rises in the east and sets in the west. The path the sun takes in the sky varies by season
- The earth rotates on its axis. This is what causes day and night
- The earth is one of several planets in our solar system that follows an orbit as it revolves around the sun. One revolution around the sun is equal to one year
- The moon changes its phase in a regular pattern over one month. The moon revolves around the earth about once every month
- Because of the earth's movement the stars appear to change at night and over the course of one year
- Telescopes are used to study the solar system; they make distant objects appear closer and larger
- Vocabulary: rotate, axis, revolve, orbit, planet, sun, stars, crater, solar system, rotate, orbit, revolution, satellite, tide, constellation, moon phases, waxing, waning, gibbous moon, crescent moon, first- quarter moon, third-quarter moon, new moon, full moon, astronomer, telescope, magnify, Milky Way Galaxy

Skills

- Describe what the sun and planets are like
- Construct a model detailing the position of each planet in our solar system
- Describe what causes day and night
- Describe how sunlight heats Earth
- Explain how Earth moves around the sun
- Explain what causes seasons
- Explain what the moon looks like and how it moves
- Identify the phases of the moon

Unit #/Title	2/Materials in the Earth
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Stage 1 - Identify Desired Results

Standards

- 3.1.3.C3** Recognize that fossils provide us with information about living things that inhabited the Earth long ago.
- 3.1.4.C1** Identify different characteristics of plants and animals that help some populations survive and reproduce in greater numbers.
- 3.1.4.C3** Compare fossils to one another and to currently living organisms according to their anatomical similarities and differences.
- 3.3.4.A3** Recognize that fossils provide evidence about the plants and animals that lived long ago and the nature of the environment at that time.
- 3.3.3.A2** Identify the physical properties of minerals and demonstrate how minerals can be tested for these different physical properties.
- 3.2.3.A1** Differentiate between properties of objects such as size, shape, and weight and properties of materials that make up the objects such as color, texture, and hardness.
- 3.3.4.A1** Describe basic landforms. Identify the layers of the earth. Recognize that the surface of the earth changes due to slow processes and rapid processes.
- 3.3.4.A2** Identify basic properties and uses of Earth's materials including rocks, soils, water, and gases of the atmosphere.
- 3.3.4.A6** Identify basic landforms using models and simple maps

Big Ideas	Essential Questions
<ul style="list-style-type: none"> The surface of the earth changes both slowly and quickly. Physical properties of rocks and minerals determine their function. Scientifically investigating rocks and minerals will lead to more information about each. 	<ul style="list-style-type: none"> How are natural resources used to provide the needs and wants of living things?

Content	Skills
<ul style="list-style-type: none"> Volcanoes are formed from magma Volcanoes and earthquakes change the earth Scientist study volcanoes and earthquakes There are safety tips to follow during an earthquake Landforms are located in North America Landforms include cliffs, hills, mountains, plains, coasts, valleys, and plateaus Weathering and erosion changes rocks Plants and animals change the earth Rocks are made of one or more minerals There are three ways rocks are formed Fossils are formed by hardened parts or marks left by an organism that lived a long time ago Minerals are used for making objects Soil is formed from the weather of rock Soil is important to living things Three different kinds of soil are clay, sandy and humus 	<ul style="list-style-type: none"> Describe how volcanoes form Describe how volcanoes change the earth Explain how earthquakes change the earth Discuss how scientists study volcanoes and earthquakes Demonstrate what to do during an earthquake Identify landforms in North America Describe landforms on the earth's surface Explain how plants and animals can change the earth Explain how people can change the earth's surface Describe how fossils form Describe how fossil fuels form Explain how minerals are used for making objects Describe what soil is made of Identify the different types of soil Determine what is recyclable and what is non recyclable Recycle and reuse materials to protect our natural resources

- Ways to protect soil is by recycling and reusing materials
- Reducing the amounts of natural resources we use is good for the environment
- Vocabulary: volcano, erupt, lava, magma, earthquake, landform, plain, plateau, weathering, erosion, glacier, quarry, mineral, fossil, fuel, natural resource, ore, decay, humus, nutrient, clay soil, sandy soil, loam, recycle, landfill, conserve

- Discuss how to reduce the amount of natural resources you use

Unit #/Title	3/Living Things - Plants	Time Frame	5-6 weeks
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Stage 1 - Identify Desired Results

Standards

- 3.2.3B6** Recognize that light from the sun is an important source of energy for living and nonliving systems and some source of energy is needed for all organisms to stay alive and grow.
- 4.1.3.D** Identify organisms that are dependent on one another in a given ecosystem. Define habitat and explain how a change in habitat affects an organism.
- 4.1.3.E** Identify changes in the environment over time.
- 4.4.3.C** Use scientific inquiry to investigate what animals and plants need to grow.
- 3.1.3.C1** Recognize that plants survive through adaptations, such as stem growth towards light and root growth downward in response to gravity.
- 3.1.3.A5** Identify the structures in plants that are responsible for food production, support, water transport, reproduction, growth, and protection.
- 3.1.3.A1** Describe characteristics of living things that help to identify and classify them.
- 3.1.3.A2** Describe the basic needs of living things and their dependence on light, food, air, water, and shelter.
- 3.1.3.A3** Illustrate how plants and animals go through predictable life cycles that include birth, growth development, reproduction, and death.
- 3.1.3.C2** Describe animal characteristics that are necessary for survival.
- 3.1.3.C4** Science as inquiry.
- 3.1.3.B5** Identify characteristics that appear in both parents and offspring.
- 3.1.3.C1** Recognize that many plants and animals can survive harsh environments because of seasonal behaviors (e.g. hibernation, migration, trees shedding leaves).
- 3.1.3.B1** Understand that plants and animals closely resemble their parents.
- 3.1.4.A1** Classify plants and animals according to the physical characteristics that they share.
- 3.1.4.A2** Describe the different resources that plants and animals need to live.
- 3.1.4.A3** Identify differences in the life cycles of plants and animals.
- 3.1.4.A5** Describe common functions living things share to help them function in a specific environment.
- 3.1.4.C2** Describe plant and animal adaptations that are important to survival.
- 4.1.3A** Differentiate between the living and nonliving components in an environment.

Big Ideas

- Plant structures have specific functions.
- Plants can be classified by observable characteristics.
- Plants have observable characteristics that allow them to live and survive in their environment.

Essential Questions

- What makes up a community?
- How can increasing populations affect an environment?

Content

- Many plants follow a lifecycle that begins with growth from a seed and proceeds through the production of seeds
- Plants have distinct stages in their life cycle
- To live and grow, plants need light, water, and nutrients from the soil
- Flowering plants must be pollinated in order to produce seeds
- Many plants are pollinated by bees
- A flower's pollen sticks to a bee, but some rubs off when the bee feeds at other flowers

Skills

- Plant and take care of plants
- Observe, describe, and record changes in plants
- Measure and record the growth of plants
- Illustrate/Interpret graphs to display and compare growth patterns
- Predict future growth from observations and measurements
- Communicate results and reflect on experiences through writing, drawing, and discussion
- Identify the parts of a lima bean
- Identify the parts of a flower

- One seed produces one plant: one plant can produce many seeds
- Vocabulary: cotyledon, seed coat, true leaves, embryo, stem leaves, abdomen, anther, honey bee, bud, chlorophyll, pollination, crucifer, fertilization, germination, growth spurt, life cycle, nectar, ovary, ovule, petal, photosynthesis, pistil, plant, pod, pollen, root, seed, seedlings, seed scar, stamen, stigma, thorax, head, carbon dioxide

- Compare and contrast a dry lima bean with a wet lima bean
- Illustrate the life cycle of a plant

Unit #/Title	4/Living Things - Animals	Time Frame	4 weeks
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Stage 1 - Identify Desired Results

Standards

- 3.2.3B6** Recognize that light from the sun is an important source of energy for living and nonliving systems and some source of energy is needed for all organisms to stay alive and grow.
- 4.1.3.D** Identify organisms that are dependent on one another in a given ecosystem. Define habitat and explain how a change in habitat affects an organism.
- 4.1.3.E** Identify changes in the environment over time.
- 4.4.3.C** Use scientific inquiry to investigate what animals and plants need to grow.
- 3.1.3.C1** Recognize that plants survive through adaptations, such as stem growth towards light and root growth downward in response to gravity.
- 3.1.3.A5** Identify the structures in plants that are responsible for food production, support, water transport, reproduction, growth, and protection.
- 3.1.3.A1** Describe characteristics of living things that help to identify and classify them.
- 3.1.3.A2** Describe the basic needs of living things and their dependence on light, food, air, water, and shelter.
- 3.1.3.A3** Illustrate how plants and animals go through predictable life cycles that include birth, growth development, reproduction, and death.
- 3.1.3.C2** Describe animal characteristics that are necessary for survival.
- 3.1.3.C4** Science as inquiry.
- 3.1.3.B5** Identify characteristics that appear in both parents and offspring.
- 3.1.3.C1** Recognize that many plants and animals can survive harsh environments because of seasonal behaviors (e.g. hibernation, migration, trees shedding leaves).
- 3.1.3.B1** Understand that plants and animals closely resemble their parents.
- 3.1.4.A1** Classify plants and animals according to the physical characteristics that they share.
- 3.1.4.A2** Describe the different resources that plants and animals need to live.
- 3.1.4.A3** Identify differences in the life cycles of plants and animals.
- 3.1.4.A5** Describe common functions living things share to help them function in a specific environment.
- 3.1.4.C2** Describe plant and animal adaptations that are important to survival.
- 4.1.3A** Differentiate between the living and nonliving components in an environment.

Big Ideas

- Animal structures have specific functions.
- Animals can be classified by observable characteristics.
- Animals have observable characteristics that allow them to live and survive in their environment.

Essential Questions

- What makes up a community?
- How can increasing populations affect an environment?

Content

- Animal babies grow to look like their parents
- Animals grow from eggs
- Spiders, insects, mammals, fish and frogs have a life cycle
- Animals know many things when they are born or hatched
- Animals learn by watching adults, from each other, and by trying to do things by themselves
- A habitat is the place where an organism lives
- Organisms change their environments

Skills

- Explain how organisms change their environments
- Explain how adaptations help organisms meet their needs
- Differentiate between producers and consumers
- Describe the parts of a food chain
- Describe how the size of a population can change
- Identify what makes up a community
- Describe how increasing populations affect an environment
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- An adaptation is a structure or behavior that helps an organism survive in its environment
- Adaptations help organisms meet their needs
- Producers are organisms that can make their own food. Consumers are organisms that eat food
- Food chain is the way food passes from one organism to another
- The size of population changes by the availability of space, food and water
- Vocabulary: embryo, nymph, larva, pupa, amphibian, gills, tadpole, mammal, instinct, organisms, habitat, environment, adaptation, producer, consumer, food chain, predator, prey, population, community

- Explain how animal babies grow to look like their parents
- Describe how animals grow from eggs
- Explain what animal babies know when they are born or hatched
- List ways that animals learn

Unit #/Title	5/Recycle	Time Frame	2-3 weeks
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Stage 1 - Identify Desired Results

Standards

- 4.5.3.D** Describe how waste is generated. Identify and propose a solution for a waste issue in the school setting.
- 3.4.5.B2** Describe how waste may be appropriately recycled or disposed of to prevent unnecessary harm to the environment.
- 3.4.3.B2** Explain how materials are reused or recycled.
- 4.5.4.D** Describe a waste stream. Identify sources of waste derived from the use of natural resources. Identify those items that can be recycled and those that cannot. Describe how everyday activities may affect the environment.
- 4.3.5.D** Explain how different items are recycled and reused.
- 4.5.4.E** Identify different ways human health can be affected by pollution.

Big Ideas

- Recycling helps the community and the world now and in the future.
- Pollution negatively affects the community and the world now and in the future.

Essential Questions

- Why is recycling important, and how does it keep the Earth clean and protected for future generations?
- Why is preventing pollution important to keep our Earth clean?

Content

- Protecting resources by recycling and reusing materials
- Reducing the amounts of recycling and non-recycling items used
- There are three different types of pollution
- Vocabulary: Recycle, Landfill, Conserve, Pollution, Pollutant, Litter, Hazardous waste, Conservation, Biodegradable, Reduce, Reuse

Skills

- Protect resources by recycling and reusing materials.
- Explain how to reduce the amounts you use.
- Identify and define three types of pollution.

Unit #/Title	6/Technology	Time Frame	
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Stage 1 - Identify Desired Results

Standards

- 3.3.4.4.A3** Describe how various relationships exist between technology and other fields.
- 3.4.5.B1** Explain how the use of technology can have unintended consequences.
- 3.4.4.E6** Identify key aspects of manufacturing processes (designing products, gathering resources and using tools to separate, form and combine materials in order to produce products).
- 3.4.3.B1** Describe how using technology can be good or bad.
- 4.5.4.C** Describe how human activities affect the environment.
- 3.4.4.B1** Describe how technology affects humans in various ways.
- 3.4.4.B2** Explain how the use of technology affects the environment in good and bad ways.
- 3.4.4.B3** Explain why new technologies are developed and old ones are improved in terms of needs and wants.
- 3.4.4.C1** Understand that there is no perfect design.
- 3.4.4.C2** Describe the engineering design process: Define a problem. Generate ideas. Select a solution and test it. Make the item. Evaluate the item. Communicate the solution with others. Present the results.
- 3.4.4.B4** Describe how the history of civilization is linked closely to technological development.
- 3.4.4.D3** Investigate and assess the influence of a specific technology or system on the individual, family, community and environment.
- 4.5.3.F** Science as inquiry.