Third Grade Science

Curriculum Guide

Dunmore School District

Dunmore, PA

Third Grade Science

Prerequisite: Successful Completion of Second Grade

Course Description:
The Third Grade Science course is designed to provide students with a conceptual understanding of third grade science concepts as they pertain to the Pennsylvania State Core Standards. The course content gives students an introduction into various disciplines such as Physical, Life, and Earth Science. Students will delve deeper into these areas to further explore topics that include, but are not limited to, interaction between objects, motion, how organisms live, grow, respond to their environment, and reproduce, how characteristics of one generation are passed on to the next, the similarities among organisms, the different kinds of plants, animals, and microorganisms, and the Earth's complex and dynamic set of interconnected systems.

Special Education:
After a student has been evaluated and found to be eligible for specially designed instruction under one of the 13 disability categories, an individualized education plan will be developed to help the student succeed through a more intense intervention program. Special Education is the practice of educating students in a way that addresses their individual differences and needs. The purpose of special education is to provide equal access to education for children ages birth through 21 by providing specialized services that will lead to school success in general education. Our goal for each student is for him/her to be educated in his/her least restrictive environment with additional supports by way of specially designed instruction. After all interventions in the general education setting have been exhausted and the student is still not making progress, students can receive direct instruction in a special education classroom. Direct instruction provides more intense intervention and replacement instruction in order to minimize skill deficits. In our special education classrooms, students will have access to the standards-based general education curriculum, as well as using various research-based intervention programs. Resources and activities will be adjusted based on individual student needs. Suggested time found within the curriculum will be adjusted as needed per individual student's needs.

Special Education Strategies can be located in the IEP Enhancements table located in Appendix: A at the end of this document.

Dunmore School District
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Year-at-a-glance

Subject: Third Grade Science	**Grade Level: 3**	**Date Completed: 3/28/2019**

1st Quarter

Topic	**Resources**	**Standards**
Interactions between any two objects can cause changes in one or both. Forces and Motion The Solar System Causes of Seasonal Changes Lunar Phases and Eclipses	Approved textbook: Scott Foresman *Science Grade 3*, Chapter 12 Lessons 1-3. Chapter 16 Lessons 1-2. Chapter 15 Lessons 2- 3. Moby Max Science Lessons Online Resources	3.2.4.C 3.4.4.C 3.1.4.C 3.1.4.D 3.4.4.D
All organisms are made of cells and can be characterized by common aspects of their structure and functioning. Similarities and Differences of Living Things Basic Needs of Plants and Animals Characteristics for Animal and Plant Survival in Different Climates	Approved textbook: Scott Foresman *Science Grade 3*, Chapter 1 Lesson 4. Chapter 2 Lessons 1-2. Moby Max Science Lessons Online Resources	3.3.4.A 3.3.4.C 3.1.4.B

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2nd Quarter

Topic	Resources	Standards
Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment. Changes in Living Things Over Time Compare Extinct Life Forms with Living Organisms Living Things are Dependent on Nonliving Things in the Environment for Survival	Approved textbook: Scott *Foresman Science Grade 3*, Chapter 2 Lesson 1. Chapter 4 Lesson 2. Moby Max Science Lessons Online Resources	3.2.4.A 3.3.4.A 4.6.4.A 3.3.4.D
Heredity refers to specific mechanisms by which characteristics or traits are passed from one generation to the next via genes, and explains why offspring resemble, but are not identical to, their parents. Offspring Closely Resemble their Parents Because of Inherited Characteristics. Physical Characteristics Appear in Both Parents and Offspring and Differ Between Families, Strains, of Species.	Approved textbook: Scott *Foresman Science Grade 3*, Chapter 2 Lesson1. Chapter 3, Lesson 1. Moby Max Science Lessons Online Resources	3.3.4.C

3rd Quarter

Topic	Resources	Standards
Biological evolution explains both the unity and diversity of species and provides a unifying principle for the history and diversity of life on Earth. Extinct Plants and Animals Fossils and the Different Environments They Lived In Identify Similarities and Differences in Plants and Animals Plant and Animal Habitats Adaptations That Help Living Things Survive How Human Activities Affect the Environment	Approved textbook: Scott Foresman *Science Grade 3*, Chapter 1 Lesson 5. Chapter 2, Lesson 3. Chapter 3 Lesson 1 Moby Max Science Lessons Online Resources	4.7.4.C 3.3.4.D 4.7.4.A 4.7.4.B 4.8.4.C 3.3.4.A 3.5.4.A

4th Quarter

Topic	Resources	Standards
The Earth is a complex and dynamic set of interconnected systems (e.g. geosphere, hydrosphere, atmosphere, biosphere) that interact over a wide range of temporal and spatial scales. Cloud Types Identify Weather Patterns From Data Charts: Temperature, Wind Direction and Speed, Precipitation Different Seasons Impact Plants, Animals, Food Availability and Daily Human Life	Approved textbook: Scott Foresman *Science Grade 3*, Chapter 6 Lessons 1-2. Moby Max Science Lessons Online Resources	3.1.4.E 3.5.4.C 3.1.4.C

General Topic	Anchor Descriptor PA Academic and Core Standards	Eligible Content, Essential Knowledge, Skills & Vocabulary	Resources & Activities	Assessments	Suggested Time
Force and Motion: The Solar System, Causes of Seasonal Changes, Lunar Phases and Eclipses Interactions between any two objects can cause changes in one or both.	**Anchor Descriptor:** **S4.C.3.1** Identify and describe different types of force and motion resulting from these forces, or the effect of the interaction between force and motion. **S4.A.2.1** Apply skills necessary to conduct an experiment or design a solution to solve a problem. **S4.A.2.2** Identify appropriate instruments for a specific task and describe the information the instrument can provide. **S4.A.1.3** Recognize and describe change in natural or human-made systems and the possible effects of those changes. **PA Academic Standards: Science** **3.2.4.C.** Recognize and use the elements of scientific inquiry to solve problems. • Generate questions about objects,	**Eligible Content:** **S4.C.3.1.1** Describe changes in motion caused by forces (e.g., magnetic, pushes or pulls, gravity, friction). **S4.C.3.1.2** Compare the relative movement of objects or describe types of motion that are evident (e.g., bouncing ball, moving in a straight line, back and forth, merry-go-round). **S4.C.3.1.3** Describe the position of an object by locating it relative to another object or a stationary background (e.g., geographic direction, left, up). **S4.A.2.1.4** State a conclusion that is consistent with the information/data. **S4.A.2.2.**1 Identify appropriate tools or instruments for specific tasks and describe the information they can	**Scott Foresman *Science Grade 3* Chapter 12 Lessons 1-3. Chapter 16 Lessons 1-2. Chapter 15 Lessons 2- 3 (Approved textbook)** **Moby Max Science Lessons** **Online resources** **Teacher-created lessons and materials**	**Teacher-based observations.** **Series available assessments online. (Optional)**	**6 Weeks**

	organisms and/or events that can be answered through scientific investigations. • Design an investigation. • Conduct an experiment. • State a conclusion that is consistent with the information. **3.4.4.C.** Observe and describe different types of force and motion. • Identify characteristics of sound (pitch, loudness and echoes) • Recognize forces that attract or repel other objects and demonstrate them. • Describe various types of motions. • Compare the relative movement of objects and describe types of motion that are evident. • Describe the position of an object by locating it relative to another object or the background (e.g., geographic direction, left, up). **3.1.4.C.** Illustrate patterns that regularly occur and reoccur in nature.	provide (e.g., measuring: length - ruler, mass - balance scale, volume - beaker, temperature - thermometer; making observations: hand lens, binoculars, telescope.) **S4.A.1.3.1** Observe and record change by using time and measurement. --- **Essential Knowledge/Skills: Each force acts on one particular object and has both strength and a direction.** Investigate the variables that may affect how objects move across a floor, down a ramp, etc. **An object at rest typically has multiple forces acting on it, but they add to give zero net force on the object.** Construct an explanation for why an object subjected to multiple pushes and pulls might stay in one place or move.			

	• Identify observable patterns (e.g., growth patterns in plants, crystal shapes in minerals, climate, structural patterns in bird feathers). • Use knowledge of natural patterns to predict next occurrences (e.g., seasons, leaf patterns, lunar phases). **3.1.4.D.** Know that scale is an important attribute of natural and human made objects, events and phenomena. • Identify the use of scale as it relates to the measurement of distance, volume and mass. • Describe scale as a ratio (e.g., map scales). • Explain the importance of scale in producing models and apply it to a model.	**Forces that do not sum to zero can cause changes in the object's speed or direction of motion.** Through the use of objects, design an investigation and demonstrate that forces can cause changes on an object's speed or direction of motion. **Patterns of an object's motion in various situations can be observed and measured.** Take measurements of objects in motion and represent the movement of objects in multiple representations. **When past motion exhibits a regular pattern, future motion can be predicted from it.** Investigate the motion of objects to determine observable and measurable patterns to predict future motions. Provide evidence that a pattern can be used to predict future motion. **Objects in contact exert forces**			

		on each other. Design and implement an investigation to demonstrate that objects in contact exert forces on each other. **Vocabulary:** Acceleration Force Speed Velocity Position Motion Relative position Friction Gravity Magnetism Work Systems Design Direction Investigation Net Zero Pattern Prediction Magnetism Net force			

General Topic	Anchor Descriptor PA Academic and Core Standards	Eligible Content, Essential Knowledge, Skills & Vocabulary	Resources & Activities	Assessments	Suggested Time
Similarities and Differences of Living Things, Basic Needs of Plants and Animals, Characteristics for Animal and Plant Survival in Different Climates All organisms are made of cells and can be characterized by common aspects of their structure and functioning.	**Anchor Descriptor:** **S4.B.1.1** Identify and describe similarities and differences between living things and their life processes. **S4.A.3.2** Use models to illustrate simple concepts and compare the models to what they represent. **PA Academic Standards: Science** **3.3.4.C.** Know that characteristics are inherited and, thus, offspring closely resemble their parents. • Identify characteristics for animal and plant survival in different climates. • identify physical characteristics that appear in both parents and offspring and differ between families, strains or species. **3.1.4.B.** Know models as useful simplifications of objects or processes. • Identify different types of models. • Identify and apply models as	**Eligible Content:** **S4.B.1.1.5** Describe the life cycles of different organisms (e.g., moth, grasshopper, frog, seed-producing plant). **Essential Knowledge/Skills:** **Reproduction is essential to the continued existence of every kind of organisms.** Use models to explain how reproduction is essential for every kind of organism. **Plants and animals have unique and diverse life cycles that include birth, growth, reproduction, and death.** Develop a model to describe the commonalities of life cycles of different organisms. **Vocabulary:** Life cycle Offspring Parents	**Scott Foresman *Science Grade 3,* Chapter 1 Lesson 4. Chapter 2 Lessons 1-2. (Approved textbook)** **Moby Max Science Lessons** **Online resources** **Teacher-created lessons and materials**	**Teacher prepared tests, quizzes, etc.** **Series available assessments online. (Optional)**	**4 Weeks**

	tools for prediction and insight. • Apply appropriate simple modeling tools and techniques. • Identify theories that serve as models (e.g., molecules). **3.3.4.A.** Know the similarities and differences of living things. • Identify life processes of living things (e.g., growth, digestion, react to environment). • Know that some organisms have similar external characteristics (e.g., anatomical characteristics; appendages, type of covering, body segments) and that similarities and differences are related to environmental habitat. • Describe basic needs of plants and animals.	Reproduce Survival			

General Topic	Anchor Descriptor PA Academic and Core Standards	Eligible Content, Essential Knowledge, Skills & Vocabulary	Resources & Activities	Assessments	Suggested Time (In Days)
Changes in Living Things Over Time, Compare Extinct Life Forms with Living Organisms, Living Things are Dependent on Nonliving Things in the Environment for Survival Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment.	**Anchor Descriptor:** **S4.A.3.1** Identify systems and describe relationships among parts of a familiar system (e.g., digestive system, simple machines, water cycle). **S4.B.2.1** Identify and explain how adaptations help organisms to survive. **S4.B.3.1** Identify and describe living and nonliving things in the environment and their interaction. **S4.B.3.2** Describe, explain, and predict change in natural or human-made systems and the possible effects of those changes on the environment. **S4.B.3.3** Identify and describe human reliance on the environment. **S4.A.1.1** Identify and explain the application of scientific, environmental, or technological	**Eligible Content:** **S4.A.3.1.2** Explain a relationship between the living and nonliving components in a system (e.g., food web, terrarium). **S4.A.3.1.3** Categorize the parts of an ecosystem as either living or nonliving and describe their roles in the system. **S4.B.2.1.1** Identify characteristics for plant and animal survival in different environments (e.g., wetland, tundra, desert, prairie, deep ocean, forest). **S4.B.3.1.1** Describe the living and nonliving components of a local ecosystem (e.g., lentic and lotic systems, forest, cornfield, grasslands, city park, playground). **S4.B.3.2.1** Describe what happens to a living thing when its habitat is changed.	**Scott Foresman *Science Grade 3,* Chapter 2 Lesson 1. Chapter 4 Lesson 2. (Approved textbook)** **Moby Max Science Lessons** **Online resources** **Teacher-created lessons and materials**	**Teacher prepared tests, quizzes, etc.** **Series available assessments online. (Optional)**	**5 Weeks**

	knowledge to possible solutions to problems. **S4.A.1.3** Recognize and describe change in natural or human-made systems and the possible effects of those changes. **S4.A.3.3** Identify and make observations about patterns that regularly occur and reoccur in nature. **PA Academic Standards:** **3.2.4.A**. Identify and use the nature of scientific and technological knowledge. • Distinguish between a scientific fact and a belief. • Provide clear explanations that account for observations and results. • Relate how new information can change existing perceptions **3.3.4.A.** Know the similarities and differences of living things. • Identify life processes of living things (e.g., growth, digestion, react to environment).	**S4.B.3.2.2** Describe and predict how changes in the environment (e.g., fire, pollution, flood, building dams) can affect systems. **S4.B.3.2.3** Explain and predict how changes in seasons affect plants, animals, or daily human life (e.g., food availability, shelter, mobility). **S4.B.3.3.5** Describe the effects of pollution (e.g., litter) in the community. **S4.A.1.1.1** Distinguish between a scientific fact and an opinion, providing clear explanations that connect observations and results (e.g., a scientific fact can be supported by making observations). **S4.A.1.3.4** Explain what happens to a living organism when its food supply, access to water, shelter, or space is changed (e.g., it might die, migrate, change behavior, eat something else). **S4.A.3.3.1** Identify and describe observable			

	• Know that some organisms have similar external characteristics (e.g., anatomical characteristics; appendages, type of covering, body segments) and that similarities and differences are related to environmental habitat. • Describe basic needs of plants and animals. **4.6.4.A.** Understand that living things are dependent on nonliving things in the environment for survival. • Identify and categorize living and nonliving things. • Describe the basic needs of an organism. • Identify basic needs of a plant and an animal and explain how their needs are met. • Identify plants and animals with their habitat and food sources. • Identify environmental variables that affect plant growth**.** • Describe how animals interact with plants to meet their needs for shelter. • Describe how certain insects	patterns (e.g., growth patterns in plants, weather, water cycle). **S4.A.3.3.2** Predict future conditions/events based on observable patterns (e.g., day/night, seasons, sunrise/sunset, lunar phases). --- **Essential Knowledge/Skills: Animals depend on each other and their surroundings to get what they need, including food, water, shelter, and a stable temperature. Groups serve different functions and vary in size.** **When the environment changes in physical characteristics, temperature, availability of resources, some organisms survive, others move, yet others may die.** Based on observations, construct an argument that some animals form groups that help members survive. Construct an argument with evidence that within a specific			

	interact with soil for their needs. • Understand the components of a food chain**.** • Identify a local ecosystem and its living and nonliving components. • Identify a simple ecosystem and its living and nonliving components. • Identify common soil textures. • Identify animals that live underground.	habitat, some organisms survive well, some not so well, and others cannot survive at all. **Vocabulary:** Basic needs Consumer Heterotroph Representation Stable			

General Topic	Anchor Descriptor PA Academic and Core Standards	Eligible Content, Essential Knowledge, Skills & Vocabulary	Resources & Activities	Assessments	Suggested Time (In Days)
Offspring Closely Resemble their Parents Because of Inherited Characteristics, Physical Characteristics Appear in Both Parents and Offspring and Differ Between Families, Strains, of Species. **Heredity refers to specific mechanisms by which characteristics or traits are passed from one generation to the next via genes, and explains why offspring resemble, but are not identical to, their parents.**	**Anchor Descriptor:** **S4.A.2.1** Apply skills necessary to conduct an experiment or design a solution to solve a problem. **S4.B.2.2** Identify that characteristics are inherited and, thus, offspring closely resemble their parents. **S4.B.2.1** Identify and explain how adaptations help organisms to survive. **PA Academic Standards: Science** **3.3.4.C.** Know that characteristics are inherited and, thus, offspring closely resemble their parents. • Identify characteristics for animal and plant survival in different climates. • identify physical characteristics that appear in both parents and offspring and differ between families, strains or species.	**Eligible Content:** **S4.A.2.1.3** Observe a natural phenomenon (e.g., weather changes, length of daylight/night, movement of shadows, animal migrations, growth of plants), record observations, and then make a prediction based on those observations. **S4.B.2.2.1** Identify physical characteristics (e.g., height, hair color, eye color, attached earlobes, ability to roll tongue) that appear in both parents and could be passed on to offspring. **S4.B.2.1.1** Identify characteristics for plant and animal survival in different environments (e.g., wetland, tundra, desert, prairie, deep ocean, forest).	**Scott Foresman *Science Grade 3,* Chapter 2 Lesson1. Chapter 3, Lesson 1. (Approved textbook)** **Moby Max Science Lessons** **Online resources** **Teacher-created lessons and materials**	**Teacher prepared tests, quizzes, etc.** **Series available assessments online. (Optional)**	**5 Weeks**

		Essential Knowledge/Skills: Different organisms vary in how they look and function because they have different inherited information. **The environment also affects the traits that an organism develops.** **Many characteristics involve both inherited traits and environmental factors.** Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. Use evidence to support an explanation that the environment can influence traits. Use evidence to compare characteristics inherited from parents, characteristics caused by the environment, and those resulting from both.			

		Vocabulary: Inheritance Traits Environment Evidence Influence Characteristics Environmental factors Generation Inherited Siblings Traits Variation			

General Topic	Anchor Descriptor PA Academic and Core Standards	Eligible Content, Essential Knowledge, Skills & Vocabulary	Resources & Activities	Assessments	Suggested Time
Extinct Plants and Animals, Fossils and the Different Environments They Lived In, Identify Similarities and Differences in Plants and Animals, Plant and Animal Habitats, Adaptations That Help Living Things Survive, How Human Activities Affect the Environment. **Biological evolution explains both the unity and diversity of species and provides a unifying principle for the history and diversity of life on Earth.**	**Anchor Descriptor:** **S4.A.2.1** Apply skills necessary to conduct an experiment or design a solution to solve a problem. **S4.B.3.2** Describe, explain, and predict change in natural or human-made systems and the possible effects of those changes on the environment. **S4.A.1.1** Identify and explain the application of scientific, environmental, or technological knowledge to possible solutions to problems. **S4.A.1.3** Recognize and describe change in natural or human-made systems and the possible effects of those changes. **S4.A.3.2** Use models to illustrate simple concepts and compare the models to what they represent. **S4.A.3.3** Identify and make observations about patterns that regularly occur and reoccur in	**Eligible Content:** **S4.A.2.1.4** State a conclusion that is consistent with the information/data. **S4.B.3.2.1** Describe what happens to a living thing when its habitat is changed. **S4.B.3.2.2** Describe and predict how changes in the environment (e.g., fire, pollution, flood, building dams) can affect systems. **S4.B.3.2.3** Explain and predict how changes in seasons affect plants, animals, or daily human life (e.g., food availability, shelter, mobility). **S4.A.1.1.1** Distinguish between a scientific fact and an opinion, providing clear explanations that connect observations and results (e.g., a scientific fact can be supported by making observations).	**Scott Foresman *Science Grade 3,* Chapter 1 Lesson 5. Chapter 2, Lesson 3. Chapter 3 Lesson 1 (Approved textbook),** **Moby Max Science Lessons** **Online resources** **Teacher-created lessons and materials**	**Teacher prepared tests, quizzes, etc.** **Series available assessments online. (Optional)**	**10 Weeks**

	nature. **S4.B.2.1** Identify and explain how adaptations help organisms to survive. **S4.B.3.3** Identify and describe human reliance on the environment at the individual or the community level. **S4.A.3.1** Identify systems and describe relationships among parts of a familiar system (e.g., digestive system, simple machines, water cycle). **PA Academic Standards: Science** **4.7.4.C**. Define and understand extinction. • Identify plants and animals that are extinct. • Explain why some plants and animals are extinct. • Know that there are local and state laws regarding plants and animals. **3.3.4.D.** Identify changes in living things over time. • Compare extinct life forms with living organisms **4.7.4.A**. Identify differences in	**S4.A.1.3.2** Describe relative size, distance, or motion. **S4.A.1.3.4** Explain what happens to a living organism when its food supply, access to water, shelter, or space is changed (e.g., it might die, migrate, change behavior, eat something else). **S4.A.3.2.1** Identify what different models represent (e.g., maps show physical features, directions, distances; globes represent Earth; drawings of watersheds depict terrain; dioramas show ecosystems; concept maps show relationships of ideas). **S4.A.3.3.2** Predict future conditions/events based on observable patterns (e.g., day/night, seasons, sunrise/sunset, lunar phases). **S4.B.2.1.2** Explain how specific adaptations can help a living organism survive (e.g., protective coloration, mimicry, leaf sizes and shapes, ability to catch or retain water).			

	living things. • Explain why plants and animals are different colors, shapes and sizes and how these differences relate to their survival. • Identify characteristics that living things inherit from their parents. • Explain why each of the four elements in a habitat is essential for survival. • Identify local plants or animals and describe their habitat. **4.7.4.B.** Know that adaptations are important for survival. • Explain how specific adaptations can help a living organism to survive. • Explain what happens to a living thing when its food, water, shelter or space is changed**.** **4.8.4.C.** Explain how human activities may change the environment. • Identify everyday human activities and how they affect the environment. • Identify examples of how human activities within a	**S4.B.3.3.1** Identify everyday human activities (e.g., driving, washing, eating, manufacturing, farming) within a community that depend on the natural environment. **S4.B.3.3.2** Describe the human dependence on the food and fiber systems from production to consumption (e.g., food, clothing, shelter, products). **S4.B.3.3.3** Identify biological pests (e.g., fungi – molds, plants – foxtail, purple loosestrife, Eurasian water milfoil; animals – aphides, ticks, zebra mussels, starlings, mice) that compete with humans for resources. **S4.B.3.3.4** Identify major land uses in the urban, suburban and rural communities (e.g., housing, commercial, recreation). **S4.B.3.3.5** Describe the effects of pollution (e.g., litter) in the community. **S4.A.1.1.2** Identify and describe examples of common			

	community affect the natural environment. **3.5.4.A**. Know basic landforms and earth history. • Describe earth processes (e.g., rusting, weathering, erosion) that have affected selected physical features in students' neighborhoods. • Identify various earth structures (e.g., mountains, faults, drainage basins) through the use of models. • Identify the composition of soil as weathered rock and decomposed organic remains. • Describe fossils and the type of environment they lived in (e.g., tropical, aquatic, desert). **3.3.4.A.** Know the similarities and differences of living things. • Identify life processes of living things (e.g., growth, digestion, react to environment). • Know that some organisms have similar external characteristics (e.g., anatomical characteristics; appendages, type of covering, body segments) and that	technological changes past to present in the community (e.g., energy production, transportation, communications, agriculture, packaging materials) that have either positive or negative impacts on society or the environment. **S4.A.1.3.5** Provide examples, predict, or describe how everyday human activities (e.g., solid waste production, food production and consumption, transportation, water consumption, energy production and use) may change the environment. **S4.A.3.1.4** Identify the parts of the food and fiber systems as they relate to agricultural products from the source to the consumer. --- **Essential Knowledge/Skills:** **Some plants and animals that once lived on earth are no longer found anywhere.** **Fossils provide evidence about types of organisms (both**			

	similarities and differences are related to environmental habitat. • Describe basic needs of plants and animals.	**visible and microscopic) that lived long ago as well as about the nature of the environment.** **Changes in an organism's habitat can be beneficial or harmful to the organism.** **Populations live in a variety of habitats and changes in those habitats impacts the organisms living there. Sometimes differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing.** **Fossils can be compared with one another and to living organisms according to their similarities and differences.** **Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing.** **Humans, like all other organisms, obtain living and**			

		nonliving resources from their environments. Analyze and interpret data from fossils to provide evidence of the organisms and environments in which they lived long ago. Use evidence to argue that when the environment changes in ways that affect a place's physical characteristics, organisms may survive, move to new locations, or die. Using evidence, make a claim about merits of solutions to problems caused when the environment changes and types of animals and plants that live there may change. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. Use evidence to construct an explanation that some rocks and minerals record the			

		remains of organisms. Obtain and communicate information that some organisms that once lived on earth are no longer found anywhere, although other organisms now may resemble them. Use evidence from fossil records to construct an explanation of the relationship between types of organisms living today and types of organisms that lived in the past. Use evidence to construct explanations for how environments today may be different from past environments in which fossilized organisms once lived. Use evidence to explain how some characteristics that vary among individuals of the same kind of organism can provide advantages to survive, find mates, and reproduce. Use evidence to demonstrate how humans, like all other			

		organisms, obtain living and non-living resources from their environment. **Vocabulary:** Extinct Fossils Adapt Endangered Habitat Populations Microscopic organism Organism Visible organism Explanation Fossil record Reproduce Survive Living Non-Living			

General Topic	Anchor Descriptor PA Academic and Core Standards	Eligible Content, Essential Knowledge, Skills & Vocabulary	Resources & Activities	Assessments	Suggested Time
Cloud Types, Identify Weather Patterns From Data Charts (Temperature, Wind Direction and Speed, Precipitation), Different Seasons Impact Plants, Animals, Food Availability and Daily Human Life. **The Earth is a complex and dynamic set of interconnected systems (e.g. geosphere, hydrosphere, atmosphere, biosphere) that interact over a wide range of temporal and spatial scales.**	**Anchor Descriptor:** **S4.A.1.1** Identify and explain the application of scientific, environmental, or technological knowledge to possible solutions to problems. **S4.A.1.3** Recognize and describe change in natural or human-made systems and the possible effects of those changes. **S4.A.2.1** Apply skills necessary to conduct an experiment or design a solution to solve a problem. **S4.A.2.2** Identify appropriate instruments for a specific task and describe the information the instrument can provide. **S4.A.3.1** Identify systems and describe relationships among parts of a familiar system (e.g., digestive system, simple machines, water cycle). **S4.A.3.2** Use models to illustrate simple concepts and compare the	**Eligible Content:** **S4.A.1.1.1** Distinguish between a scientific fact and an opinion, providing clear explanations that connect observations and results (e.g., a scientific fact can be supported by making observations). **S4.A.1.3.1** Observe and record change by using time and measurement. **S4.A.2.1.3** Observe a natural phenomenon (e.g., weather changes, length of daylight/night, movement of shadows, animal migrations, growth of plants), record observations, and then make a prediction based on those observations. **S4.A.2.2.1** Identify appropriate tools or instruments for specific tasks and describe the information they can provide (e.g., measuring: length - ruler, mass - balance scale, volume - beaker, temperature	**Scott Foresman *Science Grade 3,* Chapter 6 Lessons 1-2. (Approved textbook)** **Moby Max Science Lessons** **Online resources** **Teacher-created lessons and materials**	**Teacher prepared tests, quizzes, etc.** **Series available assessments online. (Optional)**	**10 Weeks**

	models to what they represent. **S4.A.3.3** Identify and make observations about patterns that regularly occur and reoccur in nature. **PA Academic Standards: Science** **3.1.4.E.** Recognize change in natural and physical systems. • Recognize change as fundamental to science and technology concepts. • Examine and explain change by using time and measurement. • Describe relative motion. Describe the change to objects caused by heat, cold, light or chemicals. **3.5.4.C.** Know basic weather elements. • identify cloud types. • Identify weather patterns from data charts (including temperature, wind direction and speed, precipitation) and graphs of the data. • Explain how the different seasons effect plants, animals, food availability and daily human life.	- thermometer; making observations: hand lens, binoculars, telescope). **S4.A.3.1.1** Categorize systems as either natural or human-made (e.g., ballpoint pens, simple electrical circuits, plant anatomy, water cycle). **S4.A.3.1.3** Categorize the parts of an ecosystem as either living or nonliving and describe their roles in the system. **S4.A.3.2.1** Identify what different models represent (e.g., maps show physical features, directions, distances; globes represent Earth; drawings of watersheds depict terrain; dioramas show ecosystems; concept maps show relationships of ideas). **S4.A.3.2.2** Use models to make observations to explain how systems work (e.g., water cycle, Sun-Earth-Moon system). **S4.A.3.3.1** Identify and describe observable			

	3.1.4.C. Illustrate patterns that regularly occur and reoccur in nature. • Identify observable patterns (e.g., growth patterns in plants, crystal shapes in minerals, climate, structural patterns in bird feathers). • Use knowledge of natural patterns to predict next occurrences (e.g., seasons, leaf patterns, lunar phases).	patterns (e.g., growth patterns in plants, weather, water cycle). **Essential Knowledge/Skills:** **Scientists record patterns of the weather across different times and areas of the weather so that they can make predictions about what kind of weather might happen next.** **Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over a period of many years.** Organize simple weather data sets to record local weather data and identify day-to-day variations, as well as, long-term patterns of weather. Record and communicate information to describe climates in different regions of the world. Display simple data sets in tables and graphs to display previous weather conditions to			

		make predictions for future seasons. **Vocabulary:** Atmosphere Data Weather Climate Conditions			

Appendix: A			
IEP Enhancements			
General Topic:	**Specially Designed Instruction:**	**Additional Vocabulary:**	**Assessments/Suggested Time:**
Force and Motion: **The Solar System, Causes of Seasonal Changes, Lunar Phases and Eclipses** **Interactions between any two objects can cause changes in one or both**	• **Preferential Seating** • **Modified Notes** • **Visual Aids** • **Small Group Instruction** • **One-on-one Instruction** • **Interactive Online Videos** • **Breaking tasks down into more manageable increments.** • **Breaking down directions with one directive given at a time.** • **Frequent breaks to maintain focus.** • **Extra time to complete assignments** • **Copy of vocabulary provided** • **Multi-Modality instruction including modeling, explicit instruction, repetition, rephrasing, visual cues, and chunking of material.** • **Directions read aloud.** • **Colored overlay for reading.** • **Access to computer to type written responses.** • **Graphic Organizer** • **Audio recordings of texts**		**Assessments:** • **Extended time to complete** • **Elimination of 1-2 Answer Choices** • **Questions Answer Choices read aloud** • **Use of highlighter to highlight important details** • **Frequent breaks to maintain focus** • **Modified Assessments** • **Provide Study Guides** • **Change testing location** • **Chunking tests into more manageable sections** • **Fewer test questions** • **Modified assignments (examples but not limited to; less problems on page, reduction of questions/answers, larger font on typed worksheets, vocabulary words defined, problem starters, rewording of questions)** **Suggested Time:** **6 Weeks as specified in the curriculum with additional time as needed per individual student**

General Topic:	Specially Designed Instruction:	Additional Vocabulary:	Assessments/Suggested Time:
Similarities and Differences of Living Things, Basic Needs of Plants and Animals, Characteristics for Animal and Plant Survival in Different Climates **All organisms are made of cells and can be characterized by common aspects of their structure and functioning.**	• **Preferential Seating** • **Modified Notes** • **Visual Aids** • **Small Group Instruction** • **One-on-One Instruction** • **Additional Workspace** • **Interactive Online Videos** • **Breaking tasks down into more manageable increments** • **Breaking down directions with one directive given at a time** • **Frequent breaks to maintain focus** • **Extra time to complete assignments** • **Copy of vocabulary provided** • **Multi-Modality instruction including modeling** • **explicit instruction, repetition, rephrasing, visual cues, and chunking of material** • **Directions read aloud** • **Colored overlay for reading** • **Access to computer to type written responses** • **Writing samples provided,** • **Graphic Organizer** • **Audio recordings of texts**		**Assessments:** • **Extended time to complete** • **Elimination of 1-2 Answer Choices** • **Questions & Answer Choices read aloud** • **Use of highlighter to highlight important details** • **Frequent breaks to maintain focus** • **Modified Assessments** • **Provide Study Guides** • **Change testing location** • **Oral Testing** • **Chunking tests into more manageable sections** • **Word Bank** • **Larger Print** **Suggested Time:** **4 weeks as specified in the curriculum with additional time as needed per individual student**

General Topic:	Specially Designed Instruction:	Additional Vocabulary:	Assessments/Suggested Time:
Changes in Living Things Over Time, Compare Extinct Life Forms with Living Organisms, Living Things are Dependent on Non-living Things in the Environment for Survival **Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationship with other organisms and the physical environment.**	• **Preferential Seating** • **Modified Notes** • **Visual Aids** • **Small Group Instruction** • **One-on-One Instruction** • **Interactive Online Videos** • **Breaking tasks down into more manageable increments.** • **Breaking down directions with one directive given at a time.** • **Frequent breaks to maintain focus.** • **Extra time to complete assignments** • **Copy of vocabulary provided** • **Multi-Modality instruction including modeling, explicit instruction, repetition, rephrasing, visual cues, and chunking of material.** • **Directions read aloud.** • **Colored overlay for reading.** • **Access to computer to type written responses.** • **Graphic Organizer** • **Audio recordings of texts**		**Assessments:** • **Extended time to complete** • **Elimination of 1-2 Answer Choices** • **Questions & Answer Choices read aloud** • **Use of highlighter to highlight important details** • **Frequent breaks to maintain focus** • **Modified Assessments** • **Provide Study Guides** • **Change testing location** • **Oral Testing** • **Chunking tests into more manageable sections** • **Word Bank** • **Larger Print** **Suggested Time:** **5 Weeks as specified in the curriculum with additional time as needed per individual student**

General Topic:	Specially Designed Instruction:	Additional Vocabulary:	Assessments/Suggested Time:
Offspring closely resemble their parents because of inherited characteristics, physical characteristics appear in both parents and offspring and differ between families, strains of species **Hereditary refers to specific mechanisms by which characteristics or traits are passed from one generation to the next via genes, and explain why offspring resemble, but are not identical to their parents**	• **Preferential Seating** • **Modified Notes** • **Visual Aids** • **Small Group Instruction** • **One-on-One Instruction** • **Interactive Online Videos** • **Breaking tasks down into more manageable increments.** • **Breaking down directions with one directive given at a time.** • **Frequent breaks to maintain focus.** • **Extra time to complete assignments** • **Copy of vocabulary provided** • **Multi-Modality instruction including modeling, explicit instruction, repetition, rephrasing, visual cues, and chunking of material.** • **Directions read aloud.** • **Colored overlay for reading.** • **Access to computer to type written responses.** • **Graphic Organizer** • **Audio recordings of texts**		**Assessments:** • **Extended time to complete** • **Elimination of 1-2 Answer Choices** • **Questions & Answer Choices read aloud** • **Use of highlighter to highlight important details** • **Frequent breaks to maintain focus** • **Modified Assessments** • **Provide Study Guides** • **Change testing location** • **Chunking tests into more manageable sections** • **Word Bank** • **Larger Print** **Suggested Time:** **5 weeks as specified in the curriculum with additional time as needed per individual basis**

General Topic:	Specially Designed Instruction:	Additional Vocabulary:	Assessments/Suggested Time:
Extinct Plants and Animals, Fossils and the Different Environments They Lived In, identify Similarities, and Differences in Plants and Animals, Plants and Animals, Habitats, Adaptations That Help Living Things Survive, How Human Activities Affect the Environment **Biological evolution explains both the unity and diversity of species and provided a unifying principle for the history and diversity of life on Earth.**	• **Preferential Seating** • **Modified Notes** • **Visual Aids** • **Small Group Instruction** • **One-on-One Instruction** • **Interactive Online Videos** • **Breaking tasks down into more manageable increments.** • **Breaking down directions with one directive given at a time.** • **Frequent breaks to maintain focus.** • **Extra time to complete assignments** • **Copy of vocabulary provided** • **Multi-Modality instruction including modeling, explicit instruction, repetition, rephrasing, visual cues, and chunking of material.** • **Directions read aloud.** • **Colored overlay for reading.** • **Access to computer to type written responses.** • **Graphic Organizer** • **Audio recordings of texts**		**Assessments:** • **Extended time to complete** • **Elimination of 1-2 Answer Choices** • **Questions & Answer Choices read aloud** • **Use of highlighter to highlight important details** • **Frequent breaks to maintain focus** • **Modified Assessments** • **Provide Study Guides** • **Change testing location** • **Chunking tests into more manageable sections** • **Word Bank** • **Larger Print** **Suggested Time:** **10 weeks as specified in the curriculum with additional time as needed per individual basis**

General Topic:	Specially Designed Instruction:	Additional Vocabulary:	Assessments/Suggested Time:
Cloud Types, Identify Weather Patterns from Data Charts, (Temperature, Wind Direction and Speed, Precipitation), Different Seasons, Impact Plants, Animals, Food Availability, and Daily Human Life. **The Earth is a complex and dynamic set of intercontinental systems (e.g. geosphere, hydrosphere, atmosphere, biosphere) that interact over a wide range of temporal and spatial scales**	• **Preferential Seating** • **Modified Notes** • **Visual Aids** • **Small Group Instruction** • **One-on-One Instruction** • **Interactive Online Videos** • **Breaking tasks down into more manageable increments.** • **Breaking down directions with one directive given at a time.** • **Frequent breaks to maintain focus.** • **Extra time to complete assignments** • **Copy of vocabulary provided** • **Multi-Modality instruction including modeling, explicit instruction, repetition, rephrasing, visual cues, and chunking of material.** • **Directions read aloud.** • **Colored overlay for reading.** • **Access to computer to type written responses.** • **Graphic Organizer** • **Audio recordings of texts**		**Assessments:** • **Extended time to complete** • **Elimination of 1-2 Answer Choices.** • **Questions & Answer Choices read aloud** • **Use of highlighter to highlight important details** • **Frequent breaks to maintain focus** • **Modified Assessments** • **Provide Study Guides** • **Change testing location** • **Chunking tests into more manageable sections** • **Word Bank** • **Larger Print** **Suggested Time:** **10 weeks as specified in the curriculum with additional time as needed per individual basis**