Science Department
Grade 3 Curriculum

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Last Updated: July 2019, Revised July 2021 Climate Change

Standards in Action: Climate Change Earth's climate is now changing faster than at any point in the history of modern civilization, primarily as a result of human activities. Global climate change has already resulted in a wide range of impacts across New Jersey and in many sectors of its economy. The addition of academic standards that focus on climate change is important so that all students will have a basic understanding of the climate system, including the natural and human-caused factors that affect it. The underpinnings of climate change span across physical, life, as well as Earth and space sciences. The goal is for students to understand climate science as a way to inform decisions that improve quality of life for themselves, their community, and globally and to know how engineering solutions can allow us to mitigate impacts, adapt practices, and build resilient systems. The topic of climate change can easily be integrated into science classes. At each grade level in which systems thinking, managing uncertainty, and building arguments based on multiple lines of data are included, there are opportunities for students to develop essential knowledge and skills that will help them understand the impacts of climate change on humans, animals, and the environment. For example, in the earlier grades, students can use data from first hand investigations of the school-yard habitat to justify recommendations for design improvements to the school-yard habitat for plants, animals, and humans. In the middle grades, students use resources from New Jersey Department of Environmental Protection, the National Oceanic and Atmospheric Administration (NOAA), and National Aeronautics and Space Administration (NASA), to inform their actions as they engage in designing, testing, and modifying an engineered solution to mitigate the impact of climate change on their community. In high school, students can construct models they develop of a proposed solution to mitigate the negative health effects of unusually high summer temperatures resulting from heat islands in cities across the globe and share in the appropriate setting. (NJDOE, Standards Draft Approval, 2020)

Scope and Sequence

Throughout the unit, Mystery Science will direct that some units are "optional" or for "extension purposes". For our curriculum programming and pacing, all activities, even those indicated as "optional" are mandated parts of the curriculum for coverage. In the event of an emergency situation, where a long period of curricular time is lost due to unforeseen circumstances, the activities noted by Mystery Science as "optional" would be the first activities to eliminate from coverage.

Unit 1: Animals Through Time (8-16 weeks) *Climate Change Connection	Unit 2: Invisible Forces (5-10 weeks)	Unit 3: Stormy Skies (4-8 weeks) *Climate Change Connection	Unit 4: Power of Flowers (4-8 weeks) *Climate Change Connection
Mystery 1: Where can you find whales in a desert? ***(3-LS4-1 and 3-LS4-4)***	Mystery 1: How could you win a tug-of-war against a bunch of adults? ***(3-PS2-1)***	Mystery 1: Where do clouds come from? ***(Foundational 3-ESS2-1)***	Mystery 1: Why do plants grow flowers? ***(3-LS1-1)***
Mystery 2: How do we know what dinosaurs looked like? ***(3-LS4-1)***	Mystery 2: What makes bridges so strong? ***(3-5-ETS1-1, 3-5-ETS1-2, 3-5-ETS1-3, Foundational 3-PS2-1)***	Mystery 2: How can we predict when it's going to storm? ***(3-ESS2-1)***	Mystery 2: Why do plants give us fruit? ***(3-LS1-1)***
Mystery 3: Can you outrun a dinosaur? ***(3-LS4-1)***	Mystery 3: How can you go faster down a slide? ***(3-PS2-1 and 3-PS2-2)***	Mystery 3: Why are some places always hot? ***(3-ESS2-2)***	Mystery 3: Why are some apples red and some green? ***(3-LS3-1)***
Mystery 4: What kinds of animals might there be in the future? ***(3-LS3-1 and 3-LS4-2)***	Mystery 4: What can magnets do? ***(3-PS2-3 and 3-PS2-4)***	Mystery 4: How can you keep a house from blowing away in a windstorm? ***(3-ESS3-1, 3-5-ETS1-1, 3-5-ETS1-2, 3-5-ETS1-3)***	Mystery 4: How could you make the biggest fruit in the world? ***(3-LS3-1)***
Mystery 5: Can selection happen without people? ***(3-LS3-1, 3-LS4-2, 3-LS4-3, 3-LS4-4)***	Mystery 5: How could you unlock a door using a magnet? ***(3-PS2-3, 3-PS2-4, 3-5-ETS1-1, 3-5-ETS1-2, 3-5-ETS1-3)***		
Mystery 6: Why do dogs wag their tails? ***(3-LS2-1)***			
Mystery 7: What's the best way to get rid of mosquitos? ***(3-LS4-3, 3-LS4-4, 3-5-ETS1-2)***			
Mystery 8: How long can people (and animals) survive in outer space? ***(3-LS3-2)***			

Animals Through Time (8-16 weeks)

Habitats, Heredity, & Change Over Time

Profound Perspective: In this unit students will develop an appreciation for how animals and the places they live (their habitats) are not constant—they have changed over time. Fossils give us a window to the animals and habitats of the past. Selective breeding shows us not only how some animals of the past became domesticated, but allows us to imagine how they might look in the future.

Climate Change Connection:

Grade 3 Life Science	Performance	Topics	Disciplinary Core Ideas (DCIs) (Mystery Conceptual Flow)	Scientific & Engineering Practices (SEPs)	Crosscutting Concepts (CCC)

	Expectations				
Mystery 1 Where can you find whales in the desert?	3-LS4-1 3-LS4-3	Habitats & Environmental Change	Fossils provide evidence of the types of organisms that lived long ago and also about the characteristics of their habitats. They help tell the story of how the environment, and the things that live in it, have changed over time. As the environment changes, some organisms survive, some adapt, and some die out. **DCIs: LS2.C, LS4.A, LS4.C, LS4.D**	Students **analyze and interpret data** from fossil records to determine how the environment they were found in has changed over time. They use this evidence to **engage in an argument** for which environment an organism survived in based on its characteristics.	Students reason about the **cause and effect** relationship between environment and the type of organism that can survive there. They observe that organisms have body parts (**structure)** that helps them survive in their habitat **(function).** Students also consider the rate of **stability and change** of an environment.
Mystery 2 How do we know what dinosaurs looked like?	3-LS4-1	Structure & Adaptations, Fossil Evidence, Classification	Fossils are clues to the past! They can tell us what an organism looked like on the outside, the habitat it lived in, and even the food it ate. Dinosaur skeletons helped us learn that dinosaurs looked a lot like lizards do today. Fossils of their teeth helped us determine if they were meat or plant-eaters. **DCIs: LS4.A**	Students **analyze and interpret data** from fossil records to determine what type of food an organism ate/eats. They use the fossil evidence to **engage in an argument** for why they chose each food source.	Students consider that fossilized evidence of organism's teeth (**structure**) can determine which type of food they ate (**function**) and the type of environment they inhabited.
Mystery 3 Can you outrun a dinosaur?	3-LS4-1	Fossil Evidence, Behavior	Dinosaur footprints are a type of fossil, meaning they can help us learn about the past. When footprints are farther apart, an organism is moving faster. When footprints are closer together, the organism is moving slower. Some dinosaurs are faster than others and we can use their footprints to figure out how their speeds were different. **DCIs: LS4.A**	Students **carry out an investigation** by comparing the stride length of student runners to the stride length of a comparable sized dinosaur, CeeLo. They use **mathematics and computational thinking** to record stride length, graph the value and determine the speed at which the student was running.	Students explore **quantity** by measuring stride length. They observe the relationship between stride length and speed

Animals Through Time (8-16 weeks)

Habitats, Heredity, & Change Over Time

(Continued)

Grade 3 Life Science	Performance Expectations	Topics	Disciplinary Core Ideas (DCIs) (Mystery Conceptual Flow)	Scientific & Engineering Practices (SEPs)	Crosscutting Concepts (CCC)
Mystery 4 What kinds of animals might there be in the future?	3-LS3-1 3-LS4-2	Heredity, Variation, & Selection	People want their pets to look a certain way--they want them to have desirable traits. Since many characteristics of organisms are inherited from their parents, people can change organisms to have the traits they want! This is called selection. If people want an animal to have a specific trait -like, a dog to be small - they will breed two of the smallest dogs they can over and over again! **DCIs: LS3.A, LS3.B**	Students **analyze** the traits of parent dogs to determine which puppy they could have. They **construct explanations** about which traits the puppy gets from each parent.	Students recognize **patterns** in traits between parents and offspring.
Mystery 5 Can selection happen without people?	3-LS3-1 3-LS4-2 3-LS4-3 3-LS4-4**	Heredity, Variation, & Selection	It isn't just people that can change the traits of animals over time--nature can too! When the environment changes, like the introduction of a new predator, some organisms survive well and reproduce, some have traits that help them survive less well, and some cannot survive at all. Over time, most offspring will be born with the trait that helps them survive	Students c**arry out an investigation** by using a **model** to simulate the introduction of a predator species on Lizard Island. Students simulate multiple generations of lizards, **analyzing and interpreting the data** after each one. They use	Students recognize the **cause and effect** relationship between a change in the environment and the survival of organisms that inhabit it. They recognize environments as a **system**, made up of interdependent parts that

			well. This is because offspring inherit their traits from their parents--and the ones that survive well and reproducing! **End of Unit Project in Optional Extras **DCIs: LS2.C, LS3.A, LS3.B, LS4.B, LS4.C, LS4.C**	this data to **engage in argument from evidence** to support their claim about how the offspring change from the original lizards.	function as a whole. They can be **stable and change** over time at different rates of speed.
Mystery 6 Why do dogs wag their tails?	3-LS2-1	Animal Groups & Survival	Dogs, descendants of wolves, are different than other pets because of how they interact with us. Wolves live in groups, work together, and communicate with one another. Being in a group helps wolves survive because they are able to catch more prey in a pack than when they are alone. There are other types of animals that also live in groups to help them survive. Being part of a group can help animals defend themselves from predators, obtain food, and cope with environmental changes. Animals living alone have a much harder time surviving. **DCIs: LS2.D**	Students carefully observe animals that live in groups in order to **obtain, evaluate, and communicate information** about animal social behavior. Using the **evidence** from their observations, students **engage in an argument** to support their claim that animals form groups to help them survive.	Students recognize the **cause and effect** relationship between animals living in a group and the members of that group surviving.

Animals Through Time (8-16 weeks)

Habitats, Heredity, & Change Over Time

(Continued)

Grade 3 Life Science	Performance Expectations	Topics	Disciplinary Core Ideas (DCIs) (Mystery Conceptual Flow)	Scientific & Engineering Practices (SEPs)	Crosscutting Concepts (CCC)
Mystery 7 What's the best way to get rid of mosquitoes?	3-LS4-3 3-LS4-4 3-5-ETS1-2	Habitat Change & Engineering	Mosquitoes suck blood and spread diseases. Mosquitoes live all over the world, but there are more in the tropics where the environment is warm and wet. This is because adult mosquitoes lay their eggs in water and need warm weather to survive. When the environment changes with increased rainfall, there will be more mosquitoes because they can survive and reproduce in greater numbers. Scientists and engineers can use this information to design solutions that help reduce the population of mosquitoes in certain areas. When there are fewer mosquitoes, then there will be a reduction in the number of people infected with the diseases that they spread. **DCIs: LS2.C, LS4.C, LS4.D, ETS1.B**	Students **obtain and evaluate information** from different people who live in Pondville, a town with a severe mosquito problem. Then, using this information, students **design solutions** that will reduce the number of mosquitoes that live in Pondville.	Students recognize the **cause and effect** relationship between a change in the environment and the survival of organisms that live there. They recognize environments as a **system**, made up of interdependent parts that function as a whole.
Mystery 8 How long	3-LS3-2	Traits & Environment	The environment can influence an organism's physical traits. Consider the effects that living in space can have on an	Students measure their own physical traits (arm strength, balance, and height) and then	Students recognize the **cause and effect** relationship between the environment and

can people (and animals) survive in outer space?			astronaut. Astronauts wear space suits to protect themselves from the extreme temperatures of outer space. But how does the low gravity of space affect our bodies? After a year of living in space, the low gravity of the environment causes a decrease in our arm strength, a reduction in our ability to balance, and even an increase in our height! **DCIs: LS3.A, LS3.B**	make predictions about how these traits would change after living in outer space for a year. Students use this information to **construct an explanation** for how the environment can influence and change physical traits.	its influence on physical traits (physical characteristics).

Power of Flowers (4-8 weeks)
Life Cycle, Traits, & Heredity

Profound Perspective: This unit develops the idea that by studying how plants reproduce and pass on their traits, we human beings have figured out how to make food plants even more useful to us. Students first discover how plants reproduce by exploring the process of pollination and fruiting. Then students are introduced to the process of plant domestication (selection of traits based on inheritance and variation).

Grade 3 Life Science	Performance Expectations	Topics	Disciplinary Core Ideas (DCIs) (Mystery Conceptual Flow)	Scientific & Engineering Practices (SEPs)	Crosscutting Concepts (CCC)
Mystery 1 Why do plants grow flowers?	3-LS1-1	Flowering & Reproduction	All plants grow from a seed, which is a baby plant. Just like animals, *some* plants--all flowering plants--need two parent plants to create a seed. Flowering plants make seeds through a process called pollination. Pollination happens when pollen from one flower gets transferred to a special part of another flower - the stigma. Flowers make seeds! These plants have a unique life cycle that start with pollination. **DCIs: *Foundational LS1.B***	Students **develop a model** of a flower and bee to simulate pollination. With a partner, they **carry out an investigation** to determine how bees fly between flowers and cause pollination. Students an**alyze their data** and **construct an explanation** for if their flower will produce seeds or not.	Students explore the **pattern** of similarities in life cycles among organisms. Students observe that a plant's stigma (**structure**) is sticky to 'catch' pollen (**function**).
Mystery 2 Why do	3-LS1-1	Reproduction	We learned in the last Mystery that pollen travels to the stigma of a flower to make a seed. But it isn't that simple - the pollen travels	Students **carry out an investigation** to determine if a food is a science fruit or	Students use **patterns** to sort food as a science fruit or a science

plants give us fruit?			down the stigma, and into the flower's ovary. Then a seed is made! Some plants grow fruit next. Fruit, a yummy 'container' for seeds, is eaten by animals! They swallow the seeds and excrete them away from the parent plant. This helps the seeds spread to new places and grow new plants. A lot of vegetables have seeds, but to plant scientists they are actually fruits! **DCIs: LS1.B**	vegetable. They cut open each food to determine if there are seeds. Students **analyze this data** to determine if the food is a fruit or vegetable.	vegetable. Students learn that fruit (**structure**) contains seeds and helps them spread (**function**).
Mystery 3 Why are some apples red and some green?	3-LS3-1	Inheritance, Traits, & Selection	Apples, like all living things, inherit their characteristics from their parents. Sweet apples grow from the seeds of sweet apples, and sour apples grow from the seeds of sour apples. While offspring have similar traits as their parents and siblings, they are not *exactly* the same. There are over 2,000 varieties of apples, each with unique traits. Farmers choose people's favorites, plant that type of seed over and over, and grow more of them. This is called selection. **DCIs: LS3.A, LS3.B**	Students **carry out an investigation** to determine the sweetness of different apple varieties.	Students identify the similarities and differences shared between offspring and their parents, or among siblings as a **pattern**.

Power of Flowers (4-8 weeks)
Life Cycle, Traits, & Heredity
(Continued)

Grade 3 Life Science	Performance Expectations	Topics	Disciplinary Core Ideas (DCIs) (Mystery Conceptual Flow)	Scientific & Engineering Practices (SEPs)	Crosscutting Concepts (CCC)
Mystery 4 How could you make the biggest fruit in the world?	3-LS3-1	Fruiting, Reproduction	No two individual offspring are exactly alike! Organisms inherit their traits from their parents which is why they are similar but not identical. Selection is when a desired trait is chosen to reproduce. It is used to change any trait of a plant. Plant-growers watch closely for changes in traits so that they can create new varieties of plants. Many fruits and vegetables we eat today were created through selection. **DCIs: LS3.A, LS3.B**	Students **engage in argument from evidence** about which plants and fruits are related to one another. Students **obtain, evaluate, and communicate information** by sorting plant cards into groups based on similar traits. They determine which plants share wild parents and are varieties of each other.	Students recognize similarities and differences among the traits of different plants as a **pattern**.

Stormy Skies (4-8 weeks)
Weather, Climate, & Water Cycle

Profound Perspective: This unit develops the idea that by paying careful attention to clouds, wind, and other weather clues around us, we can predict the daily weather and make sense of why places on earth look and feel the way they do.

Grade 3 Earth Science	Performance Expectations	Topics	Disciplinary Core Ideas (DCIs) (Mystery Conceptual Flow)	Scientific & Engineering Practices (SEPs)	Crosscutting Concepts (CCC)

Mystery 1 Where do clouds come from?	Foundational for 3-ESS2-1	Water Cycle, Phases of Matter	Clouds may look like white, fluffy, cotton, but they are actually made of water! When liquid water is heated it turns into gas water. This process is called evaporation. Some liquid water from Earth's surface (like oceans and lakes) is heated and turns into invisible water gas. It rises up into the atmosphere and becomes trapped! These trapped water droplets make clouds. **DCIs: *Foundational* ESS2.D**	Students **carry out an investigation** by **using a model** to observe evaporation. They **engage in argument from evidence** using observations from their investigation to explain what clouds are.	Students consider the **cause and effect** relationship between heated liquid water and the evaporation of gas water that forms into clouds.
Mystery 2 How can we predict when it's going to storm?	3-ESS2-1	Local Weather Patterns, Weather Prediction	There are many different types of clouds! Knowing what types of clouds bring stormy weather (and the wind's direction) can help you prepare for a rainstorm. Understanding this patterns help scientists, and you, predict what kind of weather might happen next! **DCIs: ESS2.D**	Students **obtain and communicate information** about different types of clouds by creating a Storm Spotter's Guide. They **engage in argument from evidence** by using this information to analyze multiple scenarios and determine if a storm will occur and why.	Students explore **patterns** of changing clouds as a way to predict weather.
Mystery 3 Why are some places always hot?	3-ESS2-2	Climate, Geography, & Global Weather Patterns	Weather conditions that are predictable and occur over long periods of time are called climates. There are 5 climates--tropical, polar, temperate, mild, and desert. Each climate occurs in a specific part of the world, depending on how much sunlight and rain it gets throughout the year. **DCIs: ESS2.D**	Students **obtain and evaluate information** about multiple location's weather. They **communicate the information** by color coding a map based on climate. Students **analyze and interpret the data** to determine climate patterns across the world.	Students recognize climate across the world as an observable **pattern**.
Mystery 4 How can you keep a house from blowing away in a windstorm?	3-ESS3-1 3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	Natural Hazards & Engineering	Strong winds can cause different types of natural hazards such as hurricanes, dust storms, and tornadoes. Strong winds can cause a lot of problems--they blow down all kinds of things! Engineers design solutions for the damage strong winds can cause. They identify problems and brainstorm a lot of different ideas until they find a solution. **DCIs**: **ESS3.B, ETS1.A, ETS1.B, ETS1.C**	Students **define problems** that strong winds cause. They **develop and use a model** of a home in order to **design a solution** that keeps the roof attached to the home and stops the home from blowing away in the wind. They test and improve their prototype.	Students identify the **cause and effect** relationship between strong winds and the problems they cause.

Invisible Forces (5-10 weeks)

Forces & Motion, Magnetism

Profound Perspective: This introductory forces unit will give students a new understanding of the invisible pushes and pulls that operate in the world around them. They will realize that understanding forces will let them do surprising things — from building a sturdy bridge from paper to using the pull of a rubber band to send a cardboard "hopper" flying. What students learn in this unit will connect to the world around them, leading them to think about such things as the force of friction as they slide down a playground slide or the the invisible force that makes magnets cling to the refrigerator. Hands-on activities focus on engineering, investigation, and discovery.

Grade 3 Physical Science	Performance Expectations	Topics	Disciplinary Core Ideas (DCIs) (Mystery Conceptual Flow)	Scientific & Engineering Practices (SEPs)	Crosscutting Concepts (CCC)
Mystery 1 How could you win a	3-PS2-1	Forces	Every action is either a push or a pull, or what we call a 'force'. Forces each have a strength and a direction. When objects are in contact, they exert a force on each other. When a force is	Students build a Hopper Popper to **carry out an investigation** about force and motion. They c**onstruct an explanation** for which direction	Students recognize the **cause and effect** relationship between the forces acting on an

tug-of-war against a bunch of adults?			greater than the opposite force, it causes the object to move in its direction. **DCIs: PS2.A, PS2.B**	the forces act on the object, causing it to hop.	object and the direction of its motion.
Mystery 2 What makes bridges so strong?	3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3 Foundational for 3-PS2-1	Balance of Forces, Engineering	Engineers build bridges to join two pieces of land that are split by a body of water. Building a bridge is no easy task! Engineers had to try lots of different solutions, most that didn't work, and learn from them. Possible solutions to a problem can be limited by available resources and materials--we call these constraints. All engineers communicate with their peers, test their prototypes, learn from their failures, and improve their designs. Being an engineer is exciting and full of learning! **DCIs: ETS1.A, ETS1.B, ETS1.C, Foundational PS2.A**	Students **define a problem -** designing a bridge that will hold the most weight - and its constraints, it can only be made of paper. They collaborate with peers to **design multiple solutions**. They **carry out investigations** to test each of their prototypes, determine how to improve their design.	Students explore the relationship between the **structure and function** of different bridge designs.
Mystery 3 How can you go faster down a slide?	3-PS2-1 3-PS2-2	Balance of Forces, Friction	A special type of 'push' force is called friction. This force occurs when two objects are in contact and push against each other. When an object has less friction, it moves easier. If an object has more friction, it is moves slower. Objects with smooth surfaces have less friction, and objects with rougher surfaces have more friction. **DCIs: PS2.A, PS2.B**	Students **use a model** of a slide to **carry out an investigation.** They **ask questions** about different materials and weights and test their ideas to explore which combinations move the fastest down the slide. Students then complete a fair test to determine which material has the least friction. They **engage in argument from evidence** to share their findings.	Students consider the **cause and effect** relationship between a material's surface and the amount of friction it has.

Invisible Forces (5-10 weeks)

Forces & Motion, Magnetism

(Continued)

Grade 3 Physical Science	Performance Expectations	Topics	Disciplinary Core Ideas (DCIs) (Mystery Conceptual Flow)	Scientific & Engineering Practices (SEPs)	Crosscutting Concepts (CCC)
Mystery 4 What can magnets do?	3-PS2-3 3-PS2-4	Magnets, Forces	Magnetism is another special kind of force. Magnets can pull on things without actually touching them--the force can even go right through a solid object. But not all objects are affected by magnetism, only objects that contain iron. Magnets have a lot of interesting properties. The closer a magnet is to a magnetic object, the stronger its force will be.. Also, magnets have two sides. When two magnets line up at the same side, they will push away from each other. When they are lined up at different sides, they will pull toward each other. **DCIs: PS2.B**	Students **ask questions** about magnets and **develop and carry out investigations** to observe the different properties of them.	Students consider the **cause and effect** relationship between this distance of a magnet and the strength of the force. Students consider the **cause and effect** relationship between which direction two magnets are facing and if they will push or pull on one another.
Mystery 5 How can you unlock a door using a magnet?	3-PS2-3 3-PS2-4 3-5-ETS1-1 3-5-ETS1-2	Magnets & Engineering	We've learned that magnets have a lot of interesting properties! One of them, is that magnets can push and pull on each other. In fact, they can do this even with space or another object between them! Since magnets have many useful properties, they can be used to design solutions to a variety of	Students **design a solution** for a magnetic lock by **developing a model**.	Students consider the **cause and effect** relationship between two magnets as a way to so design solutions using the engineering process.

	3-5-ETS1-3		problems. **DCIs: PS2.B, ETS1.A, ETS1.B, ETS1.C**		

Unit 1	
Animals Through Time	
Summary and Rationale	
In this unit of study, students develop an understanding of the idea that when the environment changes, some organisms survive and reproduce, some move to new locations, some move into the transformed environment, and some die. Students also investigate the types of organisms that lived long ago and the nature of their environments. They investigate the topic of selective breeding that shows us how some animals of the past became domesticated, and also allows us to imagine how they might look in the future.	
Recommended Pacing	
8 weeks	
Standards	
3-LS2-1	Construct an argument that some animals form groups that help members survive.
3-LS3-1.	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.
3-LS3-2.	Use evidence to support the explanation that traits can be influenced by the environment.
3-LS4-1	Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.

3-LS4-2	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.
3-LS4-3	Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.
3-LS4-4	Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.
3-5-ETS1-2.	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
Interdisciplinary Connections	
RI.3.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-LS4-4)
RI.3.2	Determine the main idea of a text; recount the key details and explain how they support the main idea. (3-LS4-1),(3-LS4-4)
RI.3.3	Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (3-LS2-1),(3-LS4-3)
RI.3.7	Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur). (3-LS1-1)
W.3.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly. (3-LS4-3)
SL.3.4	Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. (3-LS3-1),(3-LS3-2)
MP.2	Reason abstractly and quantitatively. (3-LS3-1),(3-LS3-2)
MP.4	Model with mathematics (3-LS3-1),(3-LS3-2)
Integration of Technology	
8.1	Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems
Career Readiness, Life Literacies and Key Skills	
9.1.5.CR.1	Compare various ways to give back and relate them to your strengths, interests, and other personal factors.
9.4.5.CI.1	Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate change issue and deliberate about possible solutions (e.g., W.4.6, 3.MD.B.3,7.1.NM.IPERS.6).

9.4.5.CI.2	Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue (e.g., 6.3.5.CivicsPD.3, W.5.7).
9.4.5.CT.1	Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
9.4.5.CT.2	Identify a problem and list the types of individuals and resources (e.g., school, community agencies, governmental, online) that can aid in solving the problem (e.g., 2.1.5.CHSS.1, 4-ESS3-1).
9.4.5.CT.3	Describe how digital tools and technology may be used to solve problems.
9.4.5.CT.4	Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.Civics CM.3).

Instructional Focus

Enduring Understandings:	**Essential Questions:**
Animals and their habitats are not constant—they have changed over time. As the environment changes, some organisms survive, some adapt, and some die out. Fossils give us a window to the animals and habitats of the past. Selective breeding shows us not only how some animals of the past became domesticated, but allows us to imagine how they might look in the future. Both people and nature can change the traits of animals overtime through selection. Many animals live in groups to help them survive. Scientists are developing different solutions that would get rid of mosquitos and decrease the spread of diseases. The low gravity of the space environment can influence an organism's physical traits.	Where can you find whales in the desert? How do we know what dinosaurs looked like? Can you outrun a dinosaur? What kinds of animals might there be in the future? Can selection happen without people? Why do dogs wag their tails? What's the best way to get rid of mosquitos? How long can people (and animals) survive in outer space?

Evidence of Learning (Assessments)

Animals Through Time Assessment
Mini-mystery assessments (after each mystery)
Labs/ notebooks

Objectives (SLO)

Students will know:	Students will be able to:
Fossils provide evidence of the types of organisms that lived long ago and also about the characteristics of their habitats. As the environment changes, some organisms survive, some adapt, and some die out. Organisms have body parts (structure) that helps them survive in their habitat (function). Fossils can tell us what an organism looked like on the outside, the habitat it lived in, and even the food it ate. When footprints are farther apart, an organism is moving faster. When footprints are closer together, the organism is moving slower. Some dinosaurs are faster than others and we can use their footprints to figure out how their speeds were different. Since many characteristics of organisms are inherited from their parents, people can change organisms to have the traits they want through what we call "selection". When the environment changes, like the introduction of a new predator, some organisms survive and reproduce, some have traits that help them survive less well, and some cannot survive at all. Over time, most offspring will be born with the trait that helps them survive well. This is because offspring inherit their traits from their parents. Certain types of animals, like wolves, live in groups to help them survive. Being part of a group can help animals defend themselves from predators, obtain food, and cope with environmental changes. Animals living alone have a much harder time surviving. Mosquitoes suck blood and spread diseases. Mosquitoes live all over the world, but there are more in the tropics where the environment is warm and wet. This is because adult mosquitoes lay their eggs in water and need warm weather to survive. When the environment changes with increased rainfall, there will be more mosquitoes because they can survive and reproduce in greater numbers. Scientists and engineers can use this information to design solutions that help reduce the population of mosquitoes in certain areas and therefore reduce the number of people infected with the diseases that they spread. Environments are systems made up of interdependent parts that function as a whole.	Students analyze and interpret data from fossil records to determine how the environment they were found in has changed over time. Students observe the structure and functions of body parts. Students use this evidence to engage in an argument for which environment an organism survived in based on its characteristics. Students analyze and interpret data from fossil records to determine what type of food an organism ate/eats and defend their reasoning with evidence. Students carry out an investigation by comparing the stride length of student runners to the stride length of a comparable sized dinosaur, CeeLo. Students use mathematics and computational thinking to record stride length, graph the value and determine the speed at which the student was running. Students analyze the traits of parent dogs to determine which puppy they could have. They construct explanations about which traits the puppy gets from each parent. Students carry out an investigation by using a model to simulate the introduction of a predator species on Lizard Island. Students simulate multiple generations of lizards, analyzing and interpreting the data after each one. They use this data to engage in argument from evidence to support their claim about how the offspring change from the original lizards. Students recognize the cause and effect relationship between a change in the environment and the survival of organisms that inhabit it. Students recognize environments as a system, made up of interdependent parts that function as a whole. They can be stable and change over time at different rates of speed. Students carefully observe animals that live in groups in order to obtain, evaluate, and communicate information about animal social behavior. Students recognize the cause and effect relationship between animals living in a group and the members of that group surviving. Students engage in an argument to support their claim that animals form groups to help them survive. Students obtain and evaluate information from different people who live in Pondville, a town with a severe mosquito problem. Students use this information to design solutions that will reduce the number of mosquitoes that live in Pondville. Students recognize the cause and effect relationship between a change in the environment and the survival of organisms that live there. Students measure their own physical traits (arm strength, balance, and height) and then make predictions about how these traits would change after living in outer space for a year.

The environment can influence an organism's physical traits. After a year of living in space, the low gravity of the environment causes a decrease in our arm strength, a reduction in our ability to balance, and even an increase in our height!	Students use this information to construct an explanation for how the environment can influence and change physical traits. Students recognize the cause and effect relationship between the environment and its influence on physical traits (physical characteristics).

Suggested Resources/Technology Tools

Additional Book & Video Resources:

Epic! Books & Videos- Ecosystems & Habitats
Epic! Books & Videos- Food Web
Epic! Books & Videos- Animal Adaptations
Epic! Books & Videos- Our Solar System
Animals of the Ocean- Readworks Text Set

- 6 different passages on animals

Ancient Animals & Fossils- Readworks Text Set
Cat Treat Stops Mosquitoes Article
Human Changes to the Environment article
Natural Changes to the Environment Article
Threatened Environments- Paired Texts
https://newsela.com/

- Search by subject, topic and grade level

Additional Curriculum Resources:

NJ Model Curriculum: Traits
- Look under "Quick Links" → "What is Looks Like in the Classroom" & "Sample Open Education Resources"

NJ Model Curriculum: Continuing the Cycle
- Look under "Quick Links" → "What is Looks Like in the Classroom" & "Sample Open Education Resources"

NJ Model Curriculum: Organisms and the Environment
- Look under "Quick Links" → "What is Looks Like in the Classroom" & "Sample Open Education Resources"

NJ Model Curriculum: Using Evidence to Understand Change in Environments
- Look under "Quick Links" → "What is Looks Like in the Classroom" & "Sample Open Education Resources"

3rd Grade Better Lessons- Life Science

Tier 1 Modifications and Accommodations

Including special education students, Multilingual Language Learners (MLLs), students at risk of school failure, gifted and talented students, and students with 504 plans;

Teachers can choose from any of the suggested modifications that follow based upon teaching style, instructional method and needs of individual students.

General Modifications for students struggling to learn:

- Focus on building relationships in the classroom.
- Control the stressors for the student and manage alternate pathways for completion of assignments.
- Provide feedback utilizing a growth mindset and praise what is done correctly based upon effort, attitude and strategy.
- Boost engagement with material by providing opportunities of differentiation, group work and alternative assignments/assessments where appropriate.

MLL

- Provide additional wait time for student responses to questions to allow students the ability to undergo the process of translation between languages, composition of response and attempted response.
- Simplification of sentence structure and repetition of questions/sentences exactly as stated before trying to rephrase to allow MLL students to hear the sentence and try to comprehend it.
- Rephrase idioms and teach their meanings as when learning a new language, translations are often very literal. IE "Take a stab at it." Ensure students understand what is meant.
- Use directed reading activities. Ensure preview of text before assigned/read, provide pre-reading questions about the main idea and offer help utilizing key words.
- Allow the use of Google Translate where appropriate.
- Utilize bilingual reading texts provided by the STC program.

G/T

Utilize differentiation in the areas of acceleration, enrichment, and grouping. Examples include, but are not limited to:

- interdisciplinary and problem-based assignments with planned scope and sequence
- advance, accelerated, or compacted content
- abstract and advanced higher-level thinking
- allowance for individual student interests
- assignments geared to development in areas of affect, creativity, cognition, and research skills
- complex, in-depth assignments
- diverse enrichment that broadens learning
- variety in types of resources
- internships, mentorships and independent study where applicable

504/IEP

Modifications and accommodations must be aligned to stated plan and uphold expectations of the plan lawfully. Every student requires a different set of accommodations based upon need. Examples specific to science practice include, but are not limited to:

- Note taker or lab assistant
- Group lab assignments
- Use of scribe
- Adjustable tables and lab equipment within reach
- Classrooms, labs and field trips in accessible locations
- Additional time and separate room for test taking
- Additional time for in-class assignments
- Additional time in lab
- Visual and tactile instructional demonstrations
- Computer with voice output, spelling and grammar checker
- Seating in the front of the class
- Tactile drawings and graphs, and three-dimensional models
- Assignments in electronic format
- Large-print handouts, lab signs and equipment labels
- TV monitor connected to microscope to enlarge images
- Computer equipped to enlarge screen characters and images
- Auditory lab warning signals
- Adaptive lab equipment (talking calculators, talking thermometers, light probes, tactile timers)
- Staples on sticks to indicate units of measurement
- Visual warning system for lab emergencies

Career Readiness, Life Literacies, and Key Skills NJSLS

Please select all standards that apply to this unit of study:

- ❑ Act as a responsible and contributing citizen and employee.
- ❑ Apply appropriate academic and technical skills.
- ❑ Attend to personal health and financial well being.
- ❑ Communicate clearly and effectively and with reason.
- ❑ Consider the environmental, social and economics impacts of decisions.
- ❑ Demonstrate creativity and innovation.
- ❑ Employ valid and reliable research strategies.
- ❑ Utilize critical thinking to make sense of problems and persevere in solving them.
- ❑ Model integrity, ethical leadership, and effective management.
- ❑ Plan education and career paths aligned to personal goals.
- ❑ Use technology to enhance productivity.
- ❑ Work productively in teams while using cultural global competence.

Suggestions on integrating these standards can be found at: https://www.nj.gov/education/standards/clicks/

LINKS TO CAREERS:
http://www.naturalinquirer.org/UserFiles/File/Types%20of%20Scientists(3).pdf

Unit 2

Invisible Forces

Summary and Rationale

This introductory forces unit will give students a new understanding of the invisible pushes and pulls that operate in the world around them. They will realize that understanding forces will let them do surprising things — from building a sturdy bridge from paper to using the pull of a rubber band to send a cardboard “hopper” flying. What students learn in this unit will connect to the world around them, leading them to think about such things as the force of friction as they slide down a playground slide or the invisible force that makes magnets cling to the refrigerator.Students will also learn the cause-and-effect relationships of electrical or magnetic interactions to define a simple design problem that can be solved with magnets. Hands-on activities focus on engineering, investigation, and discovery.

Recommended Pacing

5 weeks

Standards

3-PS2-1	Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.
3-PS2-2	Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.
3-PS2-3	Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other
3-PS2-4	Define a simple design problem that can be solved by applying scientific ideas about magnets.*
3-5ETS1-1	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
3-5ETS1-2	Generate and compare multiple solutions to a problem based on how well they meet the criteria and constraints of the design problem.
3-5ETS1-2	Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered.
Interdisciplinary Connections	
RI.3.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
RI.3.3	Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (3-PS2-3)
RI.3.8	Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence). (3-PS2-3)
W.3.7	Conduct short research projects that build knowledge about a topic.
W.3.8	Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.
SL.3.3	Ask and answer questions about information from a speaker, offering appropriate elaboration and detail. (3-PS2-3)
3.MD.A.2	Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.(3-PS2-1)
MP.2	Reason abstractly and quantitatively.
Integration of Technology	

8.1	Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems
Career Readiness, Life Literacies and Key Skills	
9.1.5.CR.1	Compare various ways to give back and relate them to your strengths, interests, and other personal factors.
9.4.5.CI.1	Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate change issue and deliberate about possible solutions (e.g., W.4.6, 3.MD.B.3,7.1.NM.IPERS.6).
9.4.5.CI.2	Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue (e.g., 6.3.5.CivicsPD.3, W.5.7).
9.4.5.CT.1	Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
9.4.5.CT.2	Identify a problem and list the types of individuals and resources (e.g., school, community agencies, governmental, online) that can aid in solving the problem (e.g., 2.1.5.CHSS.1, 4-ESS3-1).
9.4.5.CT.3	Describe how digital tools and technology may be used to solve problems.
9.4.5.CT.4	Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.Civics CM.3).

Suggested Resources/Technology Tools

Additional Book & Video Resources:
Epic! Books & Videos- Magnets
Epic! Books- Bridges

- Search keyword: bridges

Epic! Books & Videos- Forces & Motion
The Sad Tale of the Lonely Magnet (informational fiction)
Magnetism: Types & Uses Article
https://newsela.com/

- Search by subject, topic and grade level

Additional Curriculum Resources:
NJ Model Curriculum: Forces & Motion
NJ Model Curriculum: Electrical and Magnetic Forces

Tier 1 Modifications and Accommodations

Including special education students, Multilingual Language Learners (MLLs), students at risk of school failure, gifted and talented students, and students with 504 plans;

Teachers can choose from any of the suggested modifications that follow based upon teaching style, instructional method and needs of individual students.

General Modifications for students struggling to learn:

- Focus on building relationships in the classroom.
- Control the stressors for the student and manage alternate pathways for completion of assignments.
- Provide feedback utilizing a growth mindset and praise what is done correctly based upon effort, attitude and strategy.
- Boost engagement with material by providing opportunities of differentiation, group work and alternative assignments/assessments where appropriate.

MLL

- Provide additional wait time for student responses to questions to allow students the ability to undergo the process of translation between languages, composition of response and attempted response.
- Simplification of sentence structure and repetition of questions/sentences exactly as stated before trying to rephrase to allow MLL students to hear the sentence and try to comprehend it.
- Rephrase idioms and teach their meanings as when learning a new language, translations are often very literal. IE "Take a stab at it." Ensure students understand what is meant.
- Use directed reading activities. Ensure preview of text before assigned/read, provide pre-reading questions about the main idea and offer help utilizing key words.
- Allow the use of Google Translate where appropriate.
- Utilize bilingual reading texts provided by the STC program.

G/T

Utilize differentiation in the areas of acceleration, enrichment, and grouping. Examples include, but are not limited to:

- interdisciplinary and problem-based assignments with planned scope and sequence
- advance, accelerated, or compacted content
- abstract and advanced higher-level thinking
- allowance for individual student interests
- assignments geared to development in areas of affect, creativity, cognition, and research skills
- complex, in-depth assignments
- diverse enrichment that broadens learning
- variety in types of resources
- internships, mentorships and independent study where applicable

504/IEP

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- Additional time for in-class assignments
- Additional time in lab
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- ❑ Attend to personal health and financial well being.
- ❑ Communicate clearly and effectively and with reason.
- ❑ Consider the environmental social and economics impacts of decisions.
- ❑ Demonstrate creativity and innovation.
- ❑ Employ valid and reliable research strategies.
- ❑ Utilize critical thinking to make sense of problems and persevere in solving them.
- ❑ Model integrity, ethical leadership, and effective management.
- ❑ Plan education and career paths aligned to personal goals.
- ❑ Use technology to enhance productivity.
- ❑ Work productively in teams while using cultural global competence.

Suggestions on integrating these standards can be found at: https://www.nj.gov/education/standards/clicks/

LINKS TO CAREERS:
https://www.stemjobs.com/whats-like-roller-coaster-designer/
https://www.aia.org/career-center

Unit 3

Stormy Skies

Summary and Rationale

In this unit of study, students organize and use data to describe typical weather conditions expected during a particular season. By applying their understanding of weather-related hazards, students are able to make a claim about the merit of a design solution that reduces the impacts of such hazards. The crosscutting concepts of *patterns, cause and effect*, and the *influence of engineering, technology, and science on society and the natural world* are called out as organizing concepts for these disciplinary core ideas. Students demonstrate grade-appropriate proficiency in a*sking questions and defining problems, analyzing and interpreting data, engaging in argument from evidence*, and *obtaining, evaluating, and*

communicating information. Students are also expected to use these practices to demonstrate understanding of the core ideas.

Recommended Pacing

4-8 Weeks

Standards

3-ESS2-1	Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.
3-ESS2-2	Obtain and combine information to describe climates in different regions of the world.
3-ESS3-1	Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.
3-5-ETS1-1	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
3-5-ETS1-2	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
3-5-ETS1-3	Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.
Integration of Technology	
8.1	Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems
Interdisciplinary Connections	
RI.3.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers
RI.3.9	Compare and contrast the most important points and key details presented in two texts on the same topic.
MP.2	Reason abstractly and quantitatively
MP.4	Model with mathematics.
Career Readiness, Life Literacies and Key Skills	

9.1.5.CR.1	Compare various ways to give back and relate them to your strengths, interests, and other personal factors.
9.4.5.CI.1	Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate change issue and deliberate about possible solutions (e.g., W.4.6, 3.MD.B.3,7.1.NM.IPERS.6).
9.4.5.CI.2	Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue (e.g., 6.3.5.CivicsPD.3, W.5.7).
9.4.5.CT.1	Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
9.4.5.CT.2	Identify a problem and list the types of individuals and resources (e.g., school, community agencies, governmental, online) that can aid in solving the problem (e.g., 2.1.5.CHSS.1, 4-ESS3-1).
9.4.5.CT.3	Describe how digital tools and technology may be used to solve problems.
9.4.5.CT.4	Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.Civics CM.3).

Suggested Resources/Technology Tools

Additional Book & Video Resources:
https://www.getepic.com/ Search keywords: weather and storms

https://newsela.com/

- Search by subject, topic and grade level

Additional Curriculum Resources:
NJ Model Curriculum--https://www.nj.gov/education/modelcurriculum/sci/3u1.pdf

https://www.weather.gov/owlie/science_kt

https://www.noaa.gov/education

Tier 1 Modifications and Accommodations

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MLL

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G/T

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- complex, in-depth assignments
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- Staples on sticks to indicate units of measurement
- Visual warning system for lab emergencies

Career Readiness, Life Literacies, and Key Skills NJSLS

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- ❑ Attend to personal health and financial well being.
- ❑ Communicate clearly and effectively and with reason.
- ❑ Consider the environmental social and economics impacts of decisions.
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- ❑ Model integrity, ethical leadership, and effective management.
- ❑ Plan education and career paths aligned to personal goals.
- ❑ Use technology to enhance productivity.
- ❑ Work productively in teams while using cultural global competence.

Suggestions on integrating these standards can be found at: https://www.nj.gov/education/standards/clicks/

LINKS TO CAREERS:
https://www.ametsoc.org/index.cfm/ams/education-careers/career-guides-tools/all-about-careers-in-meteorology/

Unit 4

Power of Flowers

Summary and Rationale

This unit develops the idea that by studying how plants reproduce and pass on their traits, we human beings have figured out how to make food plants even more useful to us. Students first discover how plants reproduce by exploring the process of pollination and fruiting. Then students are introduced to the process of plant domestication (selection of traits based on inheritance and variation)

Recommended Pacing

4-8 Weeks)

Standards	
3-LS1-1	Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
3-LS3-1	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.
Interdisciplinary Connections	
RI.3.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
RI.3.2	Determine the main idea of a text; recount the key details and explain how they support the main idea.
W.3.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
SL.3.4	Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.
MP.2	Reason abstractly and quantitatively.
MP.4	Model with mathematics.
3.MD.B.4	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.
Integration of Technology	
8.1	Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems
Career Readiness, Life Literacies and Key Skills	
9.1.5.CR.1	Compare various ways to give back and relate them to your strengths, interests, and other personal factors.
9.4.5.CI.1	Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate change issue and deliberate about possible solutions (e.g., W.4.6, 3.MD.B.3,7.1.NM.IPERS.6).
9.4.5.CI.2	Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue (e.g., 6.3.5.CivicsPD.3, W.5.7).
9.4.5.CT.1	Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).

9.4.5.CT.2	Identify a problem and list the types of individuals and resources (e.g., school, community agencies, governmental, online) that can aid in solving the problem (e.g., 2.1.5.CHSS.1, 4-ESS3-1).
9.4.5.CT.3	Describe how digital tools and technology may be used to solve problems.
9.4.5.CT.4	Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.Civics CM.3).

Suggested Resources/Technology Tools

Additional Book & Video Resources:
https://www.getepic.com/ Search keywords: flowers

https://newsela.com/

- Search by subject, topic and grade level

Additional Curriculum Resources:
NJ Model Curriculum--Traits: https://www.nj.gov/education/modelcurriculum/sci/3u4.pdf
NJ Model Curriculum--Continuing the Cycle: https://www.nj.gov/education/modelcurriculum/sci/3u5.pdf

Tier 1 Modifications and Accommodations

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MLL

- Provide additional wait time for student responses to questions to allow students the ability to undergo the process of translation between languages, composition of response and attempted response.
- Simplification of sentence structure and repetition of questions/sentences exactly as stated before trying to rephrase to allow MLL students to hear the sentence and try to comprehend it.
- Rephrase idioms and teach their meanings as when learning a new language, translations are often very literal. IE "Take a stab at it." Ensure students understand what is meant.
- Use directed reading activities. Ensure preview of text before assigned/read, provide pre-reading questions about the main idea and offer help utilizing key words.
- Allow the use of Google Translate where appropriate.
- Utilize bilingual reading texts provided by the STC program.

G/T

Utilize differentiation in the areas of acceleration, enrichment, and grouping. Examples include, but are not limited to:

- interdisciplinary and problem-based assignments with planned scope and sequence
- advance, accelerated, or compacted content
- abstract and advanced higher-level thinking
- allowance for individual student interests
- assignments geared to development in areas of affect, creativity, cognition, and research skills
- complex, in-depth assignments
- diverse enrichment that broadens learning
- variety in types of resources
- internships, mentorships and independent study where applicable

504/IEP

Modifications and accommodations must be aligned to stated plan and uphold expectations of the plan lawfully. Every student requires a different set of accommodations based upon need. Examples specific to science practice include, but are not limited to:

- Note taker or lab assistant
- Group lab assignments
- Use of scribe
- Adjustable tables and lab equipment within reach
- Classrooms, labs and field trips in accessible locations
- Additional time and separate room for test taking
- Additional time for in-class assignments
- Additional time in lab
- Visual and tactile instructional demonstrations
- Computer with voice output, spelling and grammar checker
- Seating in the front of the class
- Tactile drawings and graphs, and three-dimensional models
- Assignments in electronic format
- Large-print handouts, lab signs and equipment labels
- TV monitor connected to microscope to enlarge images
- Computer equipped to enlarge screen characters and images
- Auditory lab warning signals
- Adaptive lab equipment (talking calculators, talking thermometers, light probes, tactile timers)
- Staples on sticks to indicate units of measurement
- Visual warning system for lab emergencies

Career Readiness, Life Literacies, and Key Skills NJSLS

Please select all standards that apply to this unit of study:

- ❑ Act as a responsible and contributing citizen and employee.
- ❑ Apply appropriate academic and technical skills.
- ❑ Attend to personal health and financial well being.
- ❑ Communicate clearly and effectively and with reason.
- ❑ Consider the environmental social and economics impacts of decisions.
- ❑ Demonstrate creativity and innovation.
- ❑ Employ valid and reliable research strategies.
- ❑ Utilize critical thinking to make sense of problems and persevere in solving them.
- ❑ Model integrity, ethical leadership, and effective management.
- ❑ Plan education and career paths aligned to personal goals.

- ❑ Use technology to enhance productivity.
- ❑ Work productively in teams while using cultural global competence.

Suggestions on integrating these standards can be found at: https://www.nj.gov/education/standards/clicks/

LINKS TO CAREERS:
https://www.environmentalscience.org/career/botanist