Branchburg Township Public Schools

Office of Curriculum and Instruction

Grade 4 Science Curriculum

Adopted by the Board of Education September 2023

This curriculum is aligned with the 2020 New Jersey Student Learning Standards in Science

Curriculum Scope and Sequence			
Content Area	**Science**	**Course Title/Grade Level:**	**4th Grade**

Topic/Unit Name		Suggested Pacing (Days/Weeks)
Topic/Unit #1	Earth and Human Activity	September-November
Topic/Unit #2	Energy and Waves	December-April
Topic/Unit #3	Molecules and Organisms	May-June

Topic/Unit 1 Title	Earth and Human Activity	Approximate Pacing	September-November

STANDARDS		
NJSLS (Science)		
Students will be able to…	Students will know…	Crosscutting Concepts
4-ESS1-1. Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. [Clarification Statement: Examples of evidence from patterns could include rock layers with marine shell fossils above rock layers with plant fossils and no shells, indicating a change from land to water over time; and, a canyon with different rock layers in the walls and a river in the bottom, indicating that over time a river cut through the rock.] [Assessment Boundary: Assessment does not include specific knowledge of the mechanism of rock formation or memorization of specific rock formations and layers. Assessment is limited to relative time.] 4-ESS2-1. Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. [Clarification Statement: Examples of variables to test could include angle of slope in the downhill movement of water, amount of vegetation, speed of wind, relative rate of deposition, cycles of freezing and thawing of water, cycles of heating and cooling, and volume of water flow.] [Assessment Boundary: Assessment is limited to a single form of weathering or erosion.]	**ESS1.C: The History of Planet Earth** Local, regional, and global patterns of rock formations reveal changes over time due to earth forces, such as earthquakes. The presence and location of certain fossil types indicate the order in which rock layers were formed. **(4-ESS1-1) ESS2.A: Earth Materials and Systems** Rainfall helps to shape the land and affects the types of living things found in a region. Water, ice, wind, living organisms, and gravity break rocks, soils, and sediments into smaller particles and move them around. **(4-ESS2-1) ESS2.B: Plate Tectonics and Large-Scale System Interactions** The locations of mountain ranges, deep ocean trenches, ocean floor structures, earthquakes, and volcanoes occur in patterns. Most earthquakes and volcanoes occur in bands that are often along the boundaries between Crosscutting Concepts Patterns -Patterns can be used as evidence to support an explanation. **ESS2.E: Biogeology**	**Patterns** Patterns can be used as evidence to support an explanation. (4-ESS1-1) (4-ESS2-2) **Connections to Nature of Science Scientific Knowledge Assumes an Order and Consistency in Natural Systems** Science assumes consistent patterns in natural systems. (4-ESS1-1) **Cause and Effect** Cause and effect relationships are routinely identified, tested, and used to explain change. (4-ESS2-1) Cause and effect relationships are routinely identified, tested, and used to explain change. (4-ESS3-2) **Connections to Engineering, Technology, and Applications of Science Interdependence of Science, Engineering, and Technology** - Knowledge of relevant scientific concepts and research findings is important in engineering. (4-ESS3-1)

4-ESS2-2. Analyze and interpret data from maps to describe patterns of Earth's features. [Clarification Statement: Maps can include topographic maps of Earth's land and ocean floor, as well as maps of the locations of mountains, continental boundaries, volcanoes, and earthquakes.] 4-ESS3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment. [Clarification Statement: Examples of renewable energy resources could include wind energy, water behind dams, and sunlight; nonrenewable energy resources are fossil fuels and fissile materials. Examples of environmental effects could include loss of habitat due to dams, loss of habitat due to surface mining, and air pollution from burning of fossil fuels.] 4-ESS3-2. Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.* [Clarification Statement: Examples of solutions could include designing an earthquake resistant building and improving monitoring of volcanic activity.] [Assessment Boundary: Assessment is limited to earthquakes, floods, tsunamis, and volcanic eruptions.] 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.	Living things affect the physical characteristics of their regions. (4- ESS2-1) **ESS3.B: Natural Hazards** A variety of hazards result from natural processes (e.g., earthquakes, tsunamis, volcanic eruptions). Humans cannot eliminate the hazards but can take steps to reduce their impacts. (4-ESS3-2) (Note: This Disciplinary Core Idea can also be found in 3.WC.) **ETS1.B: Designing Solutions to Engineering** Problems Testing a solution involves investigating how well it performs under a range of likely conditions. (secondary to 4-ESS3-2) **ETS1.A: Defining and Delimiting Engineering Problems** Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account. (3-5- ETS1-1)	**Influence of Engineering, Technology, and Science on Society and the Natural World** People's needs and wants change over time, as do their demands for new and improved technologies. (3-5-ETS1-1) Engineers improve existing technologies or develop new ones to increase their benefits, decrease known risks, and meet societal demands. (3-5-ETS1-2)

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.	**ETS1.B: Developing Possible Solutions** Research on a problem should be carried out befe design process, and shared ideas can lead to improved designs. (3-5-ETS1-2) - Tests are often designed to identify failure points or difficulties, which suggest the elements of the design that need to be improved. (3-5-ETS1-3) **ETS1.C: Optimizing the Design Solution** Different solutions need to be tested in order to determine which of them best solves the problem, given the criteria and the constraints. (3-5-ETS1-3)	
Interdisciplinary Connections:	**CS & DT:**	
RI.4.9 Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably. (4-ESS3-2) (Example:Students research all about earthquakes, volcanoes, ocean trenches, and tectonic plates. Students use this information to integrate their knowledge of natural disasters and write about the subject). W.4.8 Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources. (Example: Students explore google maps and focus on the Ring of Fire. Think about their previous research, gather new research, and the	8.2.5.ITH.2: Evaluate how well a new tool has met its intended purpose and identify any shortcomings it might have. 8.2.5.ETW.4: Explain the impact that resources, such as energy and materials used to develop technology, have on the environment. (Example-Students will compare the cost of using solar panels vs. using power company and one store's prices vs. other store's prices.) 8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data. 8.1.5.DA.5: Propose cause and effect relationships, predict outcomes, or communicate ideas using data. (Example- Students will use various tools to collect, analyze and share data about natural disasters and ways to prevent them using either google forms, google slides, Discovery Education Boards, or Flipgrid)	

location of mountain ranges, volcanoes, deep ocean trenches, and ocean floor structures and write about this subject).	

CLKS:

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).

Example- Students will watch videos, read articles about natural disasters. Students will find out how the E.P.A can help the environment and how a geologist can help predict natural disasters and issue warnings

SL.4.5 Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

Bend 1: I was on vacation in Sedona, Arizona. I noticed that there were “sea life” fossils at the top of a rock formation.
Bend 2: Wind and water shape the land.
Bend 3: There are recognizable patterns of earthquakes and volcanoes
Bend 5: Engineering Scenario: Hurricane Sandy destroyed the Seaside Boardwalk as well as homes. People along the Jersey Shore had their lives changed forever after Superstorm Sandy in 2012. The state of New Jersey is asking you to help make a plan to lessen the impact of a storm for the next weather event.
Bend 5b: Engineering Scenario: When Mr. Jones was building his house he looked at a topographical map before starting construction.

STUDENT LEARNING OBJECTIVES

Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
Students will know: ● fossils ● natural phenomenon ● argument ● claim ● evidence ● models	***Students will be able to:*** ● Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. ● Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. ● Analyze and interpret data from maps to describe patterns of Earth’s features

• structure • function • system • patterns • erosion • natural resources • renewable resources • weathering • natural disasters • topography	• Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment. • Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans • Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. • 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. • 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.

ASSESSMENT OF LEARNING	
Summative Assessment (Assessment at the end of the learning period)	Students will develop a model and construct and argument with evidence to explain the science behind the phenomena using the Disciplinary Core Ideas, Cross Cutting Concepts, and Science and Engineering Practices
Formative Assessments (Ongoing assessments during the learning period to inform instruction)	Models, claims, evidence, data and research, planning and carrying out investigations, classroom discussions, anecdotal notes
Alternative Assessments (Any learning activity or assessment that asks students to *perform* to demonstrate their knowledge, understanding and proficiency)	Discovery Education Board activities, worksheets/activities, PBL (extensions), modified assessments as per IEPs
Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)	Grade level benchmark assessment

RESOURCES
Core instructional materials: NGSS GRC Model
Supplemental materials: Discovery Education Encyclopedia Britannica ScholasticGo
Modifications for Learners
See appendix

Topic/Unit 2 Title	Energy and Waves	Approximate Pacing	December-April

STANDARDS		
NJSLS (Science)		
Students will be able to…	Students will know…	Crosscutting Concepts
4-PS3-1. Use evidence to construct an explanation relating the speed of an object to the energy of that object. [Assessment Boundary: Assessment does not include quantitative measures of changes in the speed of an object or on any precise or quantitative definition of energy.] **4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.** [Assessment Boundary: Assessment does not include quantitative measurements of energy.] **4-PS3-3. Ask questions and predict outcomes about the changes in energy that occur when objects collide**. [Clarification Statement: Emphasis is on the change in the energy due to the change in speed, not on the forces, as objects interact.] [Assessment Boundary: Assessment does not include quantitative measurements of energy.] **4-PS3-4. Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.*** [Clarification Statement: Examples of devices could include electric circuits that convert electrical energy into motion energy of	**PS3.A: Definitions of Energy** The faster a given object is moving, the more energy it possesses. (4- PS3-1) Energy can be moved from place to place by moving objects or through sound, light, or electric currents. (4-PS3-2),(4-PS3-3) **PS3.B: Conservation of Energy and Energy Transfer** Energy is present whenever there are moving objects, sound, light, or heat. When objects collide, energy can be transferred from one object to another, thereby changing their motion. In such collisions, some energy is typically also transferred to the surrounding air; as a result, the air gets heated and sound is produced. (4-PS3-2),(4-PS3-3) Light also transfers energy from place to place. (4-PS3-2) Energy can also be transferred from place to place by electric currents, which can then be used locally to produce motion, sound, heat, or light. The currents may have been produced to begin with by transforming the energy of motion into electrical energy. (4-PS3-2),(4- PS3-4)	**Energy and Matter** Energy can be transferred in various ways and between objects. (4-PS3-1),(4-PS3-2),(4-PS3-3),(4-PS3-4) **Connections to Engineering, Technology, and Applications of Science** Influence of Science, Engineering and Technology on Society and the Natural World Engineers improve existing technologies or develop new ones. (4-PS3-4) **Connections to Nature of Science** Science is a Human Endeavor Most scientists and engineers work in teams. (4-PS3-4) Science affects everyday life. (4-PS3-4) **Patterns** Similarities and differences in patterns can be used to sort and classify natural phenomena. (4-PS4-1) Similarities and differences in patterns can be used to sort and classify designed products. (4- PS4-3)

a vehicle, light, or sound; and, a passive solar heater that converts light into heat. Examples of constraints could include the materials, cost, or time to design the device.] [Assessment Boundary: Devices should be limited to those that convert motion energy to electric energy or use stored energy to cause motion or produce light or sound.] **4-PS4-1. Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.** [Clarification Statement: Examples of models could include diagrams, analogies, and physical models using wire to illustrate wavelength and amplitude of waves.] [Assessment Boundary: Assessment does not include interference effects, electromagnetic waves, non-periodic waves, or quantitative models of amplitude and wavelength.] **4-PS4-2. Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.** [Assessment Boundary: Assessment does not include knowledge of specific colors reflected and seen, the cellular mechanisms of vision, or how the retina works.] **4-PS4-3. Generate and compare multiple solutions that use patterns to transfer information.*** [Clarification Statement: Examples of solutions could include drums sending coded information through sound waves, using a grid of 1's and 0's representing black and white to send information about a picture, and using Morse code	**ESS3.A: Natural Resources** Energy and fuels that humans use are derived from natural sources, and their use affects the environment in multiple ways. Some resources are renewable over time, and others are not. (4-ESS3-1) **PS3.C: Relationship Between Energy and Forces** When objects collide, the contact forces transfer energy so as to change the objects' motions. (4-PS3-3) **PS3.D: Energy in Chemical Processes and Everyday Life** The expression "produce energy" typically refers to the conversion of stored energy into a desired form for practical use. (4-PS3-4) **ETS1.A: Defining Engineering Problems** Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account. (secondary to 4-PS3-4) **PS4.A: Wave Properties**	**Cause and Effect** Cause and effect relationships are routinely identified. (4-PS4-2) **Connections to Engineering, Technology, and Applications of Science Interdependence of Science, Engineering, and Technology** Knowledge of relevant scientific concepts and research findings is important in engineering. (4-PS4-3)

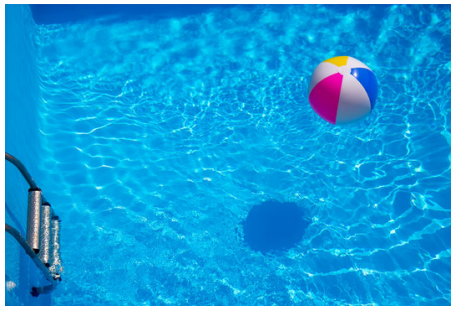
to send text.] The performance expectations above were developed using the following elements from	Waves, which are regular patterns of motion, can be made in water by disturbing the surface. When waves move across the surface of deep water, the water goes up and down in place; there is no net motion in the direction of the wave except when the water meets a beach. (Note: This grade band endpoint was moved from K–2.) (4-PS4- 1) Waves of the same type can differ in amplitude (height of the wave) and wavelength (spacing between wave peaks). (4-PS4-1) **PS4.B: Electromagnetic Radiation** An object can be seen when light reflected from its surface enters the eyes. (4-PS4-2) **PS4.C: Information Technologies and Instrumentation** Digitized information can be transmitted over long distances without significant degradation. High-tech devices, such as computers or cell phones, can receive and decode information—convert it from digitized form to voice—and vice versa. (4-PS4-3) **ETS1.C: Optimizing The Design Solution** Different solutions need to be tested in order to determine which of them best solves the problem, given the criteria and the constraints. (secondary to 4-PS4-3)	

Interdisciplinary Connections:	CS & DT:
SL.4.5 Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes. (Examples: Students create a Flipgrid to share their ideas about how energy works through light, sound, motion, or heat). 4.MD.A.1 Know relative sizes of measurement units within one system of units including km, m, cm. mm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36) (Example: Students create an experiment using golf balls to demonstrate energy and energy transfer to an object (potential to kinetic). Test and record data using graphs and tables. Students will measure using one system to record their information. The students will draw a model explaining their experiment.)	8.2.5.ED.1: Explain the functions of a system and its subsystems. 8.2.5.ED.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task. (Example-Students learned that when the steel spheres come together, it creates friction and heat. Students first make a paper Heat Spinner and observe how air can create movement. Then, students use their Heat Spinners to experiment with a heat source (an incandescent bulb) and discover how heat energy can make the spinner move in different ways.) 8.2.5.ED.2: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models. 8.2.5.ETW.1: Describe how resources such as material, energy, information, time, tools, people, and capital are used in products or systems. 8.2.5.ETW.4: Explain the impact that resources, such as energy and materials used to develop technology, have on the environment. (Example- Students will work collaboratively to develop models to demonstrate energy transfer to show how energy works) 8.1.5.CS.2: Model how computer software and hardware work together as a system to accomplish tasks. 8.1.5.NI.1: Develop models that successfully transmit and receive information using both wired and wireless methods. (Example: Students learn that messages traveled are decoded by the computers in our phone. Students practice coding on Bitsbox.)
CLKS:	
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.CivicsCM.3).	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS	

Bend 1: Bowling Strike Fast **vs.** Bowling Strike Slow **(What do you notice about each video? Similar/different - what are the results and what do you think caused them?)**
Bend 2: When I plug my cell phone into an outlet to charge it, it lights up and makes a sound.
Bend 3- Windmill Phenomena **(observe the video clip and/or picture -- what do you notice, what do you wonder, what science do you see?)**

Bend 4: Slow Motion Tuning Fork **(Watch the video-- What do see? What do you think is happening? What do you wonder?)**

Bend 5: Beach Ball Scenario **(observe the video clip and/or picture). Erica and her friends are playing with an inflatable ball by passing it back and forth. It passes over Erica's head and lands in the pool. One of her friends does a cannonball jump into the pool and the ball begins to move. The following conversation ensues.**



Friend 1: Hurry, Erica and grab the ball! The waves will pull it underwater!
Friend 2: It's just going to move up and down with the waves. It won't move closer to you. You're going to have to swim over there to get it.
Friend 3: The waves will gradually push the ball towards you. So you don't have to swim after it, Erica.
Which friend(s) do you agree with most? Why?

STUDENT LEARNING OBJECTIVES	
Key Knowledge	**Process/Skills/Procedures/Application of Key Knowledge**

Students will know:	***Students will be able to:***
• natural phenomenon • argument • claim • evidence • models • structure • function • system • patterns • kinetic energy • potential energy • amplitude • wavelength • coding • electrical currents	• Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. • Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.

ASSESSMENT OF LEARNING	
Summative Assessment (Assessment at the end of the learning period)	Students will develop a model and construct and argument with evidence to explain the science behind the phenomena using the Disciplinary Core Ideas, Cross Cutting Concepts, and Science and Engineering Practices
Formative Assessments (Ongoing assessments during the learning period to inform instruction)	Models, claims, evidence, data and research, planning and carrying out investigations, classroom discussions, anecdotal notes
Alternative Assessments (Any learning activity or assessment that asks students to *perform* to demonstrate their knowledge, understanding and proficiency)	Discovery Education Board activities, worksheets/activities, PBL (extensions), modified assessments as per IEPs

Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)	Grade level benchmark assessment
RESOURCES	
Core instructional materials: NGSS GRC Model	
Supplemental materials: Discovery Education Encyclopedia Britannica ScholasticGo	
Modifications for Learners	
See appendix	

Topic/Unit 3 Title	Molecules and Organisms	Approximate Pacing	May-June

STANDARDS		
NJSLS (Science)		
Students will be able to…	Students will know…	Crosscutting Concepts
4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. [Clarification Statement: Examples of structures could include thorns, stems, roots, colored petals, heart, stomach, lung, brain, and skin.] [Assessment Boundary: Assessment is limited to macroscopic structures within plant and animal systems.] **4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.** [Clarification Statement: Emphasis is on systems of information transfer.] [Assessment Boundary: Assessment does not include the mechanisms by which the brain stores and recalls information or the mec	**LS1.A: Structure and Function** Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. **(4-LS1-1) LS1.D: Information Processing** Different sense receptors are specialized for particular kinds of information, which may be then processed by the animal's brain. Animals are able to use their perceptions and memories to guide their actions. (4-LS1-2)	**Systems and System Models** A system can be described in terms of its components and their interactions. (4- LS1-1),(4-LS1-2)

Interdisciplinary Connections:	CS & DT:
SL.4.5 Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes. (Example: Students will create a Discovery Education board	8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim. (Example: Students have learned about specific plant and animals' (cacti, dogs, deer) internal and external structures that help them survive. Students will research other

that shows the internal and external features of their animal and plant). RL.4.9 Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably. (Example- Students will research their animal and plant to learn all about how their internal and external features help it survive and adapt in their environment)	plants and animals internal and external structures, compare and contrast them, and record their findings using nearpod. 8.1.5.DA.5: Propose cause and effect relationships, predict outcomes, or communicate ideas using data. *Example: Students use Google Docs to construct their arguments and claims about the science behind each natural phenomena*

CLKS:

9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements
Example: Students explore and learn about internal and external structures and traits of various animals and plants. Zookeepers as well as all pet store owners have the knowledge of animals to care for them whereas zoologists have the knowledge to protect and prevent extinction of certain animals. Botanists have to know the structure of plants to help them survive versus a gardener who grows plants.

UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

Bend 1: Cacti have thorns. 
Bend 2: Cacti can go without water for a long period of time.


Bend 3: I noticed my dog began shedding, more than usual over the past few weeks.
Bend 4: The deer in my backyard ran away when I walked outside.

STUDENT LEARNING OBJECTIVES

Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
Students will know: ● natural phenomenon ● argument ● claim ● evidence ● models ● structure ● function ● system ● patterns ● adaption ● reproduction ● behavior ● survival ● internal features ● external features	***Students will be able to:*** ● Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. ● Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

ASSESSMENT OF LEARNING	
Summative Assessment (Assessment at the end of the learning period)	Students will develop a model and construct and argument with evidence to explain the science behind the phenomena using the Disciplinary Core Ideas, Cross Cutting Concepts, and Science and Engineering Practices
Formative Assessments (Ongoing assessments during the learning period to inform instruction)	Models, claims, evidence, data and research, planning and carrying out investigations, classroom discussions, anecdotal notes
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