Essex Fells Public School

CURRICULUM & INSTRUCTION

Science

Grade: 3

ABSTRACT

Students are expected to demonstrate grade appropriate proficiency in asking questions, developing and using models, planning and carrying out investigations, analyzing and interpreting data, constructing explanations and designing solutions, engaging in argument from evidence, and obtaining, evaluating, and communicating information. Students are expected to use these practices to demonstrate understanding in the disciplines of physical, life and Earth and space sciences. Student performance will be evaluated using a variety of assessments, including teacher-generated tests and quizzes, laboratory activities, homework, research projects, class participation and small group exploration activities.

BOE Approved: 8/12/26

ESSEX FELLS PUBLIC SCHOOLS

Grade 3 Science

Unit of Study: *(Pacing Guide - Specify time frame by days or weeks)*	**Topic: Motion and Forces** **September/November** *(9 weeks)*	**Topic: Weather and Climate** **November/January** *(9 weeks)*	**Topic: Inheritance and Traits** **February/April** *(9 weeks)*
STAGE 1: Desired Results			
Established Goals: **Write out complete NJSLS:** *(Content Specific Standards Only. Only use standards that are applicable to the unit.)*	**Science 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.	**Science 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. **Disciplinary Core Ideas** **ESS1.C: The History of Planet Earth** How do people reconstruct and date events in Earth's planetary history? 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	**Science Standards** **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. **Disciplinary Core Ideas** **LS3.A: Inheritance of Traits:** How are the characteristics of one generation related to the previous generation? Many characteristics of organisms are inherited from their parents. (3- LS3-1) Other characteristics result from

	Disciplinary Core Ideas **PS2.A: Forces and Motion** Each force acts on one particular object and has both strength and a direction. An object at rest typically has multiple forces acting on it, but they add to give zero net force on the object. Forces that do not sum to zero can cause changes in the object's speed or direction of motion. (Boundary: Qualitative and conceptual, but not quantitative addition of forces are used at this level.) (3-PS2-1) The patterns of an object's motion in various situations can be observed and measured; when that past motion exhibits a regular pattern, future motion can be predicted from it. (Boundary: Technical terms, such as magnitude, velocity, momentum, and vector quantity, are not introduced at this level, but the concept that some quantities need both size and direction to be described is developed.) (3-PS2-2) **PS2.B: Types of Interactions** Objects in contact exert forces on each other. (3-PS2-1)	layers were formed. (4ESS1-1) **ESS2.A: Earth Materials and Systems** How do Earth's major systems interact? 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) Earth's major systems are the geosphere (solid and molten rock, soil, and sediments), the hydrosphere (water and ice), the atmosphere (air), and the biosphere (living things, including humans). These systems interact in multiple ways to affect Earth's surface materials and processes. The ocean supports a variety of ecosystems and organisms, shapes landforms, and influences climate. Winds and clouds in the atmosphere interact with the landforms to determine patterns of weather. (5-ESS2-1) **ESS2.D: Weather and Climate** What regulates weather and climate? Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next. (3-ESS2-1) Climate describes a range of an area's typical weather conditions and the extent	individuals' interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment.(3- LS3-2) **LS3.B: Variation of Traits:** Why do individuals of the same species vary in how they look, function, and behave? Different organisms vary in how they look and function because they have different inherited information. (3- LS3-1) The environment also affects the traits that an organism develops. (3- LS3-2) **LS4.A: Evidence of Common Ancestry and Diversity:** What evidence shows that different species are related? Some kinds of plants and animals that once lived on Earth are no longer found anywhere. (Note: moved from K–2) (3-LS4-1) Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments. (3-LS4-1) **LS4.B: Natural Selection:** How does genetic variation among organisms affect survival and reproduction?

	Electric, and magnetic forces between a pair of objects do not require that the objects be in contact. The sizes of the forces in each situation depend on the properties of the objects and their distances apart and, for forces between two magnets, on their orientation relative to each other. (3-PS2- 3), (3-PS2-4) The gravitational force of Earth acting on an object near Earth's surface pulls that object toward the planet's center. (5-PS2-1) **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	to which those conditions vary over years. (3-ESS2-2) **ESS2.E: Biogeology** How do living organisms alter Earth's processes and structures? Living things affect the physical characteristics of their regions. (4-ESS2-1) **ESS3.B: Natural Hazards** How do natural hazards affect individuals and societies? A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts. (3-ESS3-1), (4- ESS3-2) **ESS3.C: Human Impacts on Earth Systems** How do humans change the planet? Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space. But individuals and communities are doing things to help protect Earth's resources and environments. (5-ESS3-1)	Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. (3-LS4-2) **LS4.C: Adaptation:** How does the environment influence populations of organisms over multiple generations? For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3) **LS4.D: Biodiversity and Humans:** What is biodiversity, how do humans affect it, and how does it affect humans? Populations live in a variety of habitats and change in those habitats affects the organisms living there. (3-LS4-4)

	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) **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)	**ESS3.D: Global Climate Change** How do people model and predict the effects of human activities on Earth's climate?	

Interdisciplinary Connections: **Write out complete NJSLS:** *(Must have at least one standard from one of these areas but may have more):* ● *ELA companion standards;* ● *Standards for Mathematical; Practice* ● *Science;* ● *Visual/Performing Arts) - Standard 1;* ● *Comprehensive Health & PE - Standard 2;* ● *Social Studies - Standard 6;* ● *World Languages - Standard 7;*	**ELA Companion** **RI.CR.3.1.** Ask and answer questions and make relevant connections to demonstrate understanding of an informational text, referring explicitly to textual evidence as the basis for the answers. **RI.TS.3.4.** Utilize and reference features of a text when writing or speaking about a text, using text features (e.g., graphics, images, captions, headings) and search tools (e.g., key words, sidebars, hyperlinks) to locate and integrate information relevant to a given topic efficiently. **RI.MF.3.6.** Use information gained from text features (e.g., illustrations, maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur). **RI.AA.3.7.** Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence) to support specific points the author makes in a text. **RI.CT.3.8.** Compare and contrast the elements of informational texts regarding the most important points and key details presented in two texts on the same topic. **W.AW.3.1.** Write opinion texts to present an idea with reasons and information. **W.IW.3.2.** Write informative/ explanatory texts to examine a topic and convey ideas and information clearly. **W.WR.3.5.** Generate questions about a topic and independently locate related information from at least two reference sources (print and non-print) to obtain information on that	**ELA Companion** **RI.CR.3.1.** Ask and answer questions and make relevant connections to demonstrate understanding of an informational text, referring explicitly to textual evidence as the basis for the answers. **RI.TS.3.4.** Utilize and reference features of a text when writing or speaking about a text, using text features (e.g., graphics, images, captions, headings) and search tools (e.g., key words, sidebars, hyperlinks) to locate and integrate information relevant to a given topic efficiently. **RI.MF.3.6.** Use information gained from text features (e.g., illustrations, maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur). **RI.AA.3.7.** Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence) to support specific points the author makes in a text. **W.IW.3.2.** Write informative/ explanatory texts to examine a topic and convey ideas and information clearly. **W.WR.3.5.** Generate questions about a topic and independently locate related information from at least two reference sources (print and non-print) to obtain information on that topic. **W.SE.3.6.** Use discussion, books, or media resources to gather ideas, outline them, and prioritize the information to include while planning to write about a topic. **SL.PE.3.1** Engage effectively in a range of	**ELA Companion** **RI.CR.3.1.** Ask and answer questions and make relevant connections to demonstrate understanding of an informational text, referring explicitly to textual evidence as the basis for the answers. **RI.TS.3.4.** Utilize and reference features of a text when writing or speaking about a text, using text features (e.g., graphics, images, captions, headings) and search tools (e.g., key words, sidebars, hyperlinks) to locate and integrate information relevant to a given topic efficiently. **RI.MF.3.6.** Use information gained from text features (e.g., illustrations, maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur). **RI.CT.3.8.** Compare and contrast the elements of informational texts regarding the most important points and key details presented in two texts on the same topic. **W.AW.3.1.** Write opinion texts to present an idea with reasons and information. **W.IW.3.2.** Write informative/ explanatory texts to examine a topic and convey ideas and information clearly. **W.WR.3.5.** Generate questions about a topic and independently locate related information from at least two reference sources (print and non-print) to obtain information on that topic. **W.SE.3.6.** Use discussion, books, or media resources to gather ideas, outline them, and prioritize the information to include while planning to write about a topic.

	topic. **W.SE.3.6.** Use discussion, books, or media resources to gather ideas, outline them, and prioritize the information to include while planning to write about a topic. **SL.PE.3.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly. **SL.ES.3.3.** Ask and answer questions about information from a speaker, offering appropriate elaboration and detail. **SL.PI.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. **SL.UM.3.5** Use multimedia to demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details. **SL.AS.3.6.** Speak in complete sentences when appropriate to task and situation in order to provide requested detail. **L.VL.3.2.** Determine or clarify the meaning of unknown and multiple-meaning academic and domain-specific words and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies. A. Use sentence-level context as a clue to the meaning of a word or phrase. B. Determine the meaning of the new word formed when a known affix is added to a known word (e.g., agreeable/disagreeable,	collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly. **SL.PE.3.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly. **SL.ES.3.3.** Ask and answer questions about information from a speaker, offering appropriate elaboration and detail. **SL.PI.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. **SL.UM.3.5** Use multimedia to demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or Details. **SL.AS.3.6.** Speak in complete sentences when appropriate to task and situation in order to provide requested detail. **L.VL.3.2.** Determine or clarify the meaning of unknown and multiple-meaning academic and domain-specific words and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies. E. Use sentence-level context as a clue to the meaning of a word or phrase. F. Determine the meaning of the new word formed when a known affix is added to a known word (e.g., agreeable/disagreeable,	**SL.PE.3.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly. **SL.PE.3.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly. **SL.ES.3.3.** Ask and answer questions about information from a speaker, offering appropriate elaboration and detail. **SL.PI.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. **SL.AS.3.6.** Speak in complete sentences when appropriate to task and situation in order to provide requested detail. **L.VL.3.2.** Determine or clarify the meaning of unknown and multiple-meaning academic and domain-specific words and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies. I. Use sentence-level context as a clue to the meaning of a word or phrase. J. Determine the meaning of the new word formed when a known affix is added to a known word (e.g., agreeable/disagreeable, comfortable/uncomfortable, care/careless, heat/preheat). K. Use a known root word as a clue to the meaning of an unknown word with the

	comfortable/uncomfortable, care/careless, heat/preheat). C. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., company, companion). D. Use glossaries or beginning dictionaries, both print and digital, to determine or clarify the precise meaning of key words and phrases **Mathematics** **3.M.4** Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units). **3.MD.B.3** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. **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 thehorizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. **Recommended Texts:** *Forces All Around* *Handbook of Forces* *What My Sister Taught Me About Magnets* *Hoverboard* *Explaining a Bridge*	comfortable/uncomfortable, care/careless, heat/preheat). G. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., company, companion). H. Use glossaries or beginning dictionaries, both print and digital, to determine or clarify the precise meaning of key words and phrases **Mathematics** **3.M.4** Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units). **3.MD.B.3** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. **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. **Recommended Texts:** *What's Going On with the Weather?* *Dangerous Weather Ahead* *Sky Notebook* *Seeing the World Through Numbers*	same root (e.g., company, companion). L. Use glossaries or beginning dictionaries, both print and digital, to determine or clarify the precise meaning of key words and phrases **Mathematics** **3.M.4** Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units). **3.MD.B.3** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. **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. **Recommended Texts:** *Blue Whales and Buttercups* *The Code* *How the Sparrow Learned Its Song* *Scorpion Scientist* *Handbook of Traits*

Integration of Career Readiness, Life Literacies & Key Skills: Write out complete NJSLS: (*Must have at least one standard from:* ● *9.1 Personal Financial Literacy; or* ● *9.2 Career Awareness, Exploration, Preparation & Training; or* ● *9.4 Life Literacies & Key Skills)*	**Career Awareness, Exploration & Training** **Life Literacies & Key Skills** **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.IML.2:** Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3). **9.4.5.IML.6:** Use appropriate sources of information from diverse sources, contexts, disciplines, and cultures to answer questions (e.g., RI.5.7, 6.1.5.HistoryCC.7, 7.1.NM.IPRET.5). **9.4.8.CI.1:** Assess data gathered on varying perspectives on causes of climate change (e.g., crosscultural, gender-specific, generational), and determine how the data can best be used to design multiple potential solutions (e.g., RI.7.9, 6.SP.B.5, 7.1.NH.IPERS.6, 8.2.8.ETW.4). **9.4.8.CI.2:** Repurpose an existing resource in an innovative way (e.g., 8.2.8.NT.3). **9.4.8.CI.3:** Examine challenges that may exist in the adoption of new ideas (e.g., 2.1.8.SSH, 6.1.8.CivicsPD.2). **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,	**Career Awareness, Exploration & Training** **Life Literacies & Key Skills** **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.IML.2:** Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3). **9.4.5.IML.6:** Use appropriate sources of information from diverse sources, contexts, disciplines, and cultures to answer questions (e.g., RI.5.7, 6.1.5.HistoryCC.7, 7.1.NM.IPRET.5). **9.4.5.DC.8:** Propose ways local and global communities can engage digitally to participate in and promote climate action (e.g., 6.3.5.GeoHE.1). **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.	**Career Awareness, Exploration & Training** **Life Literacies & Key Skills** **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.IML.2:** Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3). **9.4.5.IML.6:** Use appropriate sources of information from diverse sources, contexts, disciplines, and cultures to answer questions (e.g., RI.5.7, 6.1.5.HistoryCC.7, 7.1.NM.IPRET.5). **9.4.5.IML.3:** Represent the same data in multiple visual formats in order to tell a story about the data. **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).

	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.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).	
Integration of Computer Science and Design Thinking: Write out complete NJSLS: *(Must have at least one standard from:* *● 8.1 Computer Science; or* *● 8.2 Design Thinking)*	**Computer Science** ● 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. **Design Thinking** ● 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.ED.5: Describe how specifications and limitations impact the engineering design process. ● 8.2.5.ED.6: Evaluate and test alternative solutions to a problem using the constraints and tradeoffs identified in the design process.	**Computer Science** ● 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. **Design Thinking** ● 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.ED.5: Describe how specifications and limitations impact the engineering design process. ● 8.2.5.ED.6: Evaluate and test alternative solutions to a problem using the constraints and tradeoffs identified in the	**Computer Science** ● 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. **Design Thinking** ● 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.ED.5: Describe how specifications and limitations impact the engineering design process. ● 8.2.5.ED.6: Evaluate and test alternative solutions to a problem using the constraints and tradeoffs identified in the

		design process. 8.2.5.ETW.2: Describe ways that various technologies are used to reduce improper use of resources. 8.2.5.ETW.3: Explain why human-designed systems, products, and environments need to be constantly monitored, maintained, and improved. 8.2.5.ETW.4: Explain the impact that resources, such as energy and materials used to develop technology, have on the environment. 8.2.5.ETW.5: Identify the impact of a specific technology on the environment and determine what can be done to increase positive effects and to reduce any negative effects, such as climate change.	design process. 8.2.5.NT.1: Troubleshoot a product that has stopped working and brainstorm ideas to correct the problem. 8.2.5.NT.3: Redesign an existing product for a different purpose in a collaborative team. 8.2.5.NT.4: Identify how improvement in the understanding of materials science impacts technologies. 8.2.5.ETW.1: Describe how resources such as material, energy, information, time, tools, people, and capital are used in products or systems.
21st Century Life and Careers: Career Education: Write out complete NJSLS: *(Only include if a CTE curriculum* ● *9.3 Career and Technical Education)*	**N/A**	**N/A**	**N/A**

Enduring Understandings: *(Follow UbD: What big ideas will students know?)*	● An object will move in the direction of the largest force. ● An object will not be in motion if the forces are equal. ● Simple Machines make it easier to do work ● There are 7 groups of simple machines that can be used in various combinations	● Meteorologists make weather measurements in the same way each time so they can make comparisons. ● Temperature data for one month can be described as the range of daily high temperatures over the whole month. ● Precipitation data for one month can be described as the total precipitation over the whole month. ● Although the temperature in a place can change each day, there is a pattern that can be described by the range of temperatures. Different places have different temperature ranges. ● Scientists evaluate evidence to find the strongest evidence. Stronger evidence makes an argument more convincing. ● Even though weather can be different every day, there is a pattern to the weather. The seasons that happen in one year repeat at the same time every year. ● Different places have different climates. ● There is a patter to where different types of weather happen. ● People can design solutions to prevent damage caused by natural hazards.	● Organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. ● Patterns are the similarities and differences in traits shared between offspring and their parents, or among siblings. ● Variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. ● Traits can be influenced by the environment
Essential Questions: *(Follow UbD best practices in the creation of questions)*	1. How can one predict an object's continued motion, changes in motion, or stability? 2. What underlying forces explain the	1. How can meteorologists describe weather in a way that helps them make comparisons. 2. Is there a pattern to the weather that	1. How are life cycles of plants and animals similar? 2. What affects an organism's traits?

	variety of interactions observed? 3. Why are some physical systems more stable than others? 4. What is energy? 5. What is meant by conservation of energy? 6. How is energy transferred between objects or systems? 7. How are forces related to energy?	we can use to make predictions? 3. How can we predict what the weather in a place will be like many years from now? 4. How can people prepare for natural hazards?	3. How do adaptations help plants and animals survive? 4. How do variations in traits provide advantages for survival?
STAGE 2: Evidence			
Assessment & Evidence: *(By what criteria will performances of understanding be judged? Include:* *1. Formative,* *2. Summative,* *3. Alternative - Performance/Project)* *4. Benchmark)*	**Formative Assessments** ● Class Discussions ● Classroom Polls - using various apps; responses only seen by teacher ● Cooperative Learning Activities that students complete in class where the teacher can assess an individual or group ● Exit Tickets ● In-class Assignments ● Inquiry Evaluations ● Labs ● Quizzes ● Strategic Questioning -higher order questions require more in-depth thinking by students. This can help the teacher discern the level and extent of student understanding ● Teacher Observations ● Think - Pair -Share - students write down answers to a teacher posed question. Students discuss their answer	**Formative Assessments** ● Class Discussions ● Classroom Polls - using various apps; responses only seen by teacher ● Cooperative Learning Activities that students complete in class where the teacher can assess an individual or group ● Exit Tickets ● In-class Assignments ● Inquiry Evaluations ● Labs ● Quizzes ● Strategic Questioning -higher order questions require more in-depth thinking by students. This can help the teacher discern the level and extent of student understanding ● Teacher Observations ● Think - Pair -Share - students write down answers to a teacher posed question. Students discuss their answer	**Formative Assessments** ● Class Discussions ● Classroom Polls - using various apps; responses only seen by teacher ● Cooperative Learning Activities that students complete in class where the teacher can assess an individual or group ● Exit Tickets ● In-class Assignments ● Inquiry Evaluations ● Labs ● Quizzes ● Strategic Questioning -higher order questions require more in-depth thinking by students. This can help the teacher discern the level and extent of student understanding ● Teacher Observations ● Think - Pair -Share - students write down answers to a teacher posed question. Students discuss their answer

	with a peer/peers. The teacher moves around the classroom to listen to various discussions, gaining valuable insight into levels of understanding ● Write It Down - students write down an explanation of what they understand about a topic ● 3-2-1 Countdown - 3 things you didn't know before; 2 things that surprised you about this topic, 1 thing you want to start doing with what you learned **Summative Assessments** ● Culminating experiment ● End of Chapter or Unit Tests ● Research Papers ● Written/Essay Assessments **Benchmark Assessments** ● Short Answer/Multiple Choice/Fill in the Blank **Alternative Assessments** ● Create Something - have students build/create something that requires that they apply what they have learned ● Oral Presentations ● Research Based Writing ● Questions for Comprehension	with a peer/peers. The teacher moves around the classroom to listen to various discussions, gaining valuable insight into levels of understanding ● Write It Down - students write down an explanation of what they understand about a topic ● 3-2-1 Countdown - 3 things you didn't know before; 2 things that surprised you about this topic, 1 thing you want to start doing with what you learned **Summative Assessments** ● Culminating experiment ● End of Chapter or Unit Tests ● Research Papers ● Written/Essay Assessments **Benchmark Assessments** ● Short Answer/Multiple Choice/Fill in the Blank **Alternative Assessments** ● Create Something - have students build/create something that requires that they apply what they have learned ● Oral Presentations ● Research Based Writing ● Questions for Comprehension	with a peer/peers. The teacher moves around the classroom to listen to various discussions, gaining valuable insight into levels of understanding ● Write It Down - students write down an explanation of what they understand about a topic ● 3-2-1 Countdown - 3 things you didn't know before; 2 things that surprised you about this topic, 1 thing you want to start doing with what you learned **Summative Assessments** ● Culminating experiment ● End of Chapter or Unit Tests ● Research Papers ● Written/Essay Assessments **Benchmark Assessments** ● Short Answer/Multiple Choice/Fill in the Blank **Alternative Assessments** ● Create Something - have students build/create something that requires that they apply what they have learned ● Oral Presentations ● Research Based Writing ● Questions for Comprehension

	● Peer Assessment ● Presentations ● Scientific Notebooks ● Self-Assessment ● WebQuests	● Peer Assessment ● Presentations ● Scientific Notebooks ● Self-Assessment ● WebQuests	● Peer Assessment ● Presentations ● Scientific Notebooks ● Self-Assessment ● WebQuests
STAGE 3: Learning Plan			
Learning Activities/Content: *(What is the core content of this unit? What performance tasks/ activities will students do? What skills will students know? Include content that adheres to NJ Administrative Code and Statutes:* ● *Amistad Law* ● *Holocaust Law* ● *LGBTQ/Disabilities Law)*	**N.J.S.A. 18A:35-4.36a** ● Determine the cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. ● Apply their understanding of magnetic interactions to define a simple design problem that can be solved with magnets. ● ● Analyze the text to identify which claims are supported by evidence and facts in the text and which claims are ● based on speculation or reasoned judgment. ● Using the Internet, find examples of magnetized machines. ● Read about how scientists collect data and study ecosystems. ● DEI: Compare how different	**N.J.S.A. 18A:35-4.36a** ● Explain how air temperature, moisture, wind speed and direction, and precipitation make up the weather in a particular place and time. ● Explain the difference between the weather and the climate of a given area. ● Explain the stages of the water cycle. ● Climate Change: Brainstorm possible solutions to a climate change issue and evaluate the feasibility. Potential Activities: ● Vocabulary Review: air pressure, climate, season, atmosphere, cloud, weather, axis, precipitation, wind ● Have students attempt to describe the weather outside in their science notebooks, for example whether it is	**N.J.S.A. 18A:35-4.36a** ● Examine and compare the life cycles of different plants and animals. ● Recognize the relationship between an organism and their parents based on their characteristics. Potential activities: ● Introduce vocabulary- birth, instinct, offspring, variation, germinate, life cycle, reproduction, inherit, metamorphosis, trait ● Inquiry Activity: Seed Growth ● Inquiry Activity: Parts of a Seed ● Inquiry Activity: Graphing Inherited Traits ● Analyze the text to identify which claims are supported by evidence and facts in the text and which claims are

	scientists from around the ● globe conduct research and how the results of their studies are used.	sunny or cloudy, temperature, humidity, precipitation, wind, etc. ● Inquiry Activity: Air is Around You ● Inquiry Activity: Compare Weather Patterns ● Student-to-student talk to discuss weather changes in different places around the world. ● Read several books that highlight the way in which climate changes are creating large-scale changes. ● Write scientific explanations about weather patterns and natural disasters. ● Read, use models, and construct explanations to visualize the process of weather patterns.	based on speculation or reasoned judgment. ● Using the Internet, find examples of food webs and/or food chains. ● Read about how scientists collect data and study ecosystems. ● DEI: Compare how different scientists from around the globe conduct research and how the results of their studies are used.
Resources: *(Include names of texts and all online resources)*	Amplify Science: Balancing Forces: Investigating Floating Trains ● http://www.nextgenscience.org/ ● http://www.learn360.com ● Scholastic News (w/ online resource) ● Science Spin (w/ online resource) ● Brainpop Jr.	Amplify Science: Weather and Climate: Establishing an Orangutan Reserve ● http://www.nextgenscience.org/ ● http://www.learn360.com ● Scholastic News (w/ online resource) ● Science Spin (w/ online resource) ● Brainpop Jr.	Amplify Science: Inheritance and Traits: Variation in Wolves ● http://www.nextgenscience.org/ ● http://www.learn360.com ● Scholastic News (w/ online resource) ● Science Spin (w/ online resource) ● Brainpop Jr.
Differentiation: *(What type of differentiated instruction will be used for each of the following subgroups:* *1. Special Education* *2. English Language*	**Special Education** ● Individualized Education Plans (IEPs) ● Exemplars of varied performance levels ● Multi-media presentations	**Special Education** ● Individualized Education Plans (IEPs) ● Exemplars of varied performance levels ● Multi-media presentations	**Special Education** ● Individualized Education Plans (IEPs) ● Exemplars of varied performance levels ● Multi-media presentations

Learners (ELLs) *3. At Risk/BSI* *4. Gifted & Talented/Advanced 5. 504)*	● Sheltered Instruction ● Consultation with CST ● Manipulatives ● Scaffolded Lessons ● Guided note-taking ● Study Guides ● Modified homework ● Differentiated pre-typed class notes and example problems ● Use of the inclusion teacher to re-instruct in flexible small groups for the struggling learner ● Use of alternate assessments **English Language Learners (ELLs)** ● Total Physical Response (TPR) ● SIOP ● Dictionaries ● Mnemonic devices ● Visual aids ● Modeling	● Sheltered Instruction ● Consultation with CST ● Manipulatives ● Scaffolded Lessons ● Guided note-taking ● Study Guides ● Modified homework ● Differentiated pre-typed class notes and example problems ● Use of the inclusion teacher to re-instruct in flexible small groups for the struggling learner ● Use of alternate assessments **English Language Learners (ELLs)** ● Total Physical Response (TPR) ● SIOP ● Dictionaries ● Mnemonic devices ● Visual aids ● Modeling	● Sheltered Instruction ● Consultation with CST ● Manipulatives ● Scaffolded Lessons ● Guided note-taking ● Study Guides ● Modified homework ● Differentiated pre-typed class notes and example problems ● Use of the inclusion teacher to re-instruct in flexible small groups for the struggling learner ● Use of alternate assessments **English Language Learners (ELLs)** ● Total Physical Response (TPR) ● SIOP ● Dictionaries ● Mnemonic devices ● Visual aids ● Modeling

	● Provide notes to students as needed in native language ● Cultural responsiveness ● Present information in a variety of ways (notes, guided notes, video clips, images, diagrams, graphic organizers, stations) ● Group students with others of different learning levels and abilities. ● Non-verbal assessments **Students At-Risk (BSI)** ● Read, Encode, Annotate, Ponder (iREAP) ● Interactive maps ● Jigsaw groups ● Vocabulary Self-Collection Strategy (VSS) ● Graphic organizers ● Use of technology for class assignments and homework ● Provide opportunities for students to discuss material verbally and also periods of quiet reflection. **Gifted and Talented (Advanced) Students:**	● Provide notes to students as needed in native language ● Cultural responsiveness ● Present information in a variety of ways (notes, guided notes, video clips, images, diagrams, graphic organizers, stations) ● Group students with others of different learning levels and abilities. ● Non-verbal assessments **Students At-Risk (BSI)** ● Read, Encode, Annotate, Ponder (iREAP) ● Interactive maps ● Jigsaw groups ● Vocabulary Self-Collection Strategy (VSS) ● Graphic organizers ● Use of technology for class assignments and homework ● Provide opportunities for students to discuss material verbally and also periods of quiet reflection. **Gifted and Talented (Advanced) Students:**	● Provide notes to students as needed in native language ● Cultural responsiveness ● Present information in a variety of ways (notes, guided notes, video clips, images, diagrams, graphic organizers, stations) ● Group students with others of different learning levels and abilities. ● Non-verbal assessments **Students At-Risk (BSI)** ● Read, Encode, Annotate, Ponder (iREAP) ● Interactive maps ● Jigsaw groups ● Vocabulary Self-Collection Strategy (VSS) ● Graphic organizers ● Use of technology for class assignments and homework ● Provide opportunities for students to discuss material verbally and also periods of quiet reflection. **Gifted and Talented (Advanced) Students:**

	● Project Based Learning ● Multimedia presentations ● Open-ended and informative writing ● VoiceThreads/Prezi/PWP ● Internet based research ● Open-ended responses ● Curriculum Compacting ● Advanced problems to extend the critical thinking skills of advanced learner ● Supplemental reading material for independent study ● Flexible grouping ● Tiered assignments ● Topic selection by interest ● Elevated questioning techniques using Webb's Depth of Knowledge matrix **504 Plans** ● Preferential seating. ● Extended time on tests and assignments. ● Reduced homework or classwork.	● Project Based Learning ● Multimedia presentations ● Open-ended and informative writing ● VoiceThreads/Prezi/PWP ● Internet based research ● Open-ended responses ● Curriculum Compacting ● Advanced problems to extend the critical thinking skills of advanced learner ● Supplemental reading material for independent study ● Flexible grouping ● Tiered assignments ● Topic selection by interest ● Elevated questioning techniques using Webb's Depth of Knowledge matrix **504 Plans** ● Preferential seating. ● Extended time on tests and assignments. ● Reduced homework or classwork.	● Project Based Learning ● Multimedia presentations ● Open-ended and informative writing ● VoiceThreads/Prezi/PWP ● Internet based research ● Open-ended responses ● Curriculum Compacting ● Advanced problems to extend the critical thinking skills of advanced learner ● Supplemental reading material for independent study ● Flexible grouping ● Tiered assignments ● Topic selection by interest ● Elevated questioning techniques using Webb's Depth of Knowledge matrix **504 Plans** ● Preferential seating. ● Extended time on tests and assignments. ● Reduced homework or classwork.

	● Verbal, visual, or technology aids. ● Modified textbooks or audio-video materials. ● Oral assessments	● Verbal, visual, or technology aids. ● Modified textbooks or audio-video materials. ● Oral assessments	● Verbal, visual, or technology aids. ● Modified textbooks or audio-video materials. ● Oral assessments

Unit of Study: *(Pacing Guide - Specify time frame by days or weeks)*	**Topic: Environments and Survival** **April/June** *(9 weeks)*		
STAGE 1: Desired Results			
Established Goals: **Write out complete NJSLS:** *(Content Specific Standards Only. Only use standards that are applicable to the unit.)*	**Science Standards** **3-LS2-1** Construct an argument that some animals form groups that help members survive. **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. **Disciplinary Core Ideas** **LS2.C: Ecosystem Dynamics, Functioning, and Resilience:** What happens to ecosystems when the environment changes ? When the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die. (secondary to 3-LS4-4) **LS2.D: Social Interactions and Group Behavior:** How do organisms interact in groups so as to benefit individuals? Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size. (Note: Moved from K–2) (3-LS2-1) **LS4.A: Evidence of Common Ancestry and Diversity:**		

	What evidence shows that different species are related? Some kinds of plants and animals that once lived on Earth are no longer found anywhere. (Note: moved from K–2) (3-LS4-1) Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments. (3-LS4-1) **LS4.B: Natural Selection:** How does genetic variation among organisms affect survival and reproduction? Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. (3-LS4-2) **LS4.C: Adaptation:** How does the environment influence populations of organisms over multiple generations? For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3) **LS4.D: Biodiversity and Humans:** What is biodiversity, how do humans effect		

	it, and how does it affect humans? Populations live in a variety of habitats and change in those habitats affects the organisms living there. (3-LS4-4)		
Interdisciplinary Connections: **Write out complete NJSLS:** *(Must have at least one standard from one of these areas but may have more):* ● *ELA companion standards;* ● *Standards for Mathematical; Practice* ● *Science;* ● *Visual/Performing Arts) - Standard 1;* ● *Comprehensive Health & PE - Standard 2;* ● *Social Studies - Standard 6;* ● *World Languages - Standard 7;*	**ELA Companion** **RI.CR.3.1.** Ask and answer questions and make relevant connections to demonstrate understanding of an informational text, referring explicitly to textual evidence as the basis for the answers. **RI.TS.3.4.** Utilize and reference features of a text when writing or speaking about a text, using text features (e.g., graphics, images, captions, headings) and search tools (e.g., key words, sidebars, hyperlinks) to locate and integrate information relevant to a given topic efficiently. **RI.MF.3.6.** Use information gained from text features (e.g., illustrations, maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur). **RI.AA.3.7.** Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence) to support specific points the author makes in a text. **RI.CT.3.8.** Compare and contrast the elements of informational texts regarding the most important points and key details presented in two texts on the same topic. **W.AW.3.1.** Write opinion texts to present an idea with reasons and information.		

	W.IW.3.2. Write informative/ explanatory texts to examine a topic and convey ideas and information clearly. **W.WR.3.5.** Generate questions about a topic and independently locate related information from at least two reference sources (print and non-print) to obtain information on that topic. **W.SE.3.6.** Use discussion, books, or media resources to gather ideas, outline them, and prioritize the information to include while planning to write about a topic. **SL.PE.3.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly. **SL.ES.3.3.** Ask and answer questions about information from a speaker, offering appropriate elaboration and detail. **SL.PI.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. **SL.UM.3.5** Use multimedia to demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details. **SL.AS.3.6.** Speak in complete sentences when appropriate to task and situation in order to provide requested detail. **L.VL.3.2.** Determine or clarify the meaning of unknown and multiple-meaning academic and domain-specific words and phrases based on		

	grade 3 reading and content, choosing flexibly from a range of strategies. M. Use sentence-level context as a clue to the meaning of a word or phrase. N. Determine the meaning of the new word formed when a known affix is added to a known word (e.g., agreeable/disagreeable, comfortable/uncomfortable, care/careless, heat/preheat). O. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., company, companion). P. Use glossaries or beginning dictionaries, both print and digital, to determine or clarify the precise meaning of key words and phrases **Mathematics** **3.M.4** Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units). **3.MD.B.3** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. **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 thehorizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. **Recommended Texts:** *Earthworms Underground* *Mystery Mouths*		

	Environment News *Cockroach Robots* *Biomimicry Handbook*		
Integration of Career Readiness, Life Literacies & Key Skills: **Write out complete NJSLS: (***Must have at least one standard from:* ● *9.1 Personal Financial Literacy; or* ● *9.2 Career Awareness, Exploration, Preparation & Training; or* ● *9.4 Life Literacies & Key Skills)*	**Career Awareness, Exploration & Training** **Life Literacies & Key Skills** **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.IML.2:** Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3). **9.4.5.IML.6:** Use appropriate sources of information from diverse sources, contexts, disciplines, and cultures to answer questions (e.g., RI.5.7, 6.1.5.HistoryCC.7, 7.1.NM.IPRET.5). **9.4.5.IML.3:** Represent the same data in multiple visual formats in order to tell a story about the data. **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).		

Integration of Computer Science and Design Thinking: Write out complete NJSLS: *(Must have at least one standard from:* *● 8.1 Computer Science; or* *● 8.2 Design Thinking)*	**Computer Science** ● 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. **Design Thinking** ● 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.ED.5: Describe how specifications and limitations impact the engineering design process. ● 8.2.5.ED.6: Evaluate and test alternative solutions to a problem using the constraints and tradeoffs identified in the design process.		
21st Century Life and Careers: Career Education: Write out complete NJSLS: *(Only include if a CTE curriculum*	**N/A**		

● *9.3 Career and Technical Education)*			
Enduring Understandings: *(Follow UbD: What big ideas will students know?)*	When it's easy for organisms to meet their needs in their environment, they are likely to survive. When it's hard for organisms to meet their needs in their environment, they are not likely to survive. Organisms in a population can have different traits. An organisms's traits can make it easier or harder for the organism to meet its needs in its' environment. In a population, organisms with adaptive traits are more likely to survive in their environment. In a population, organisms with non-adaptive traits are less likely to survive in their environment. Organisms' traits can inspire engineers to create designs that solve prsoblems. When an environment changes, traits that were adaptive might now be non-adaptive. When the environment changes, that doesn't mean that organisms can decide to change their traits to survive. Engineers can use what they learn from		

	organisms' traits to design solutions to problems.		
Essential Questions: *(Follow UbD best practices in the creation of questions)*	What makes organisms in a population more likely to survive or less likely to survive? Why are some organisms in a population more likely to survive than others in their environment? How can organisms' traits help engineers make successful designs? How can organisms have traits that are adaptive at one time and non-adaptive at another time? How do engineers learn, plan, make and test their designs?		
STAGE 2: Evidence			
Assessment & Evidence: *(By what criteria will performances of understanding be judged? Include:* *1. Formative,* *2. Summative,* *3. Alternative - Performance/Project)* *4. Benchmark)*	**Formative Assessments** ● Class Discussions ● Classroom Polls - using various apps; responses only seen by teacher ● Cooperative Learning Activities that students complete in class where the teacher can assess an individual or group ● Exit Tickets ● In-class Assignments ● Inquiry Evaluations ● Labs ● Quizzes ● Strategic Questioning -higher order questions require more in-depth thinking by students. This can help the teacher discern		

	the level and extent of student understanding ● Teacher Observations ● Think - Pair -Share - students write down answers to a teacher posed question. Students discuss their answer with a peer/peers. The teacher moves around the classroom to listen to various discussions, gaining valuable insight into levels of understanding ● Write It Down - students write down an explanation of what they understand about a topic ● 3-2-1 Countdown - 3 things you didn't know before; 2 things that surprised you about this topic, 1 thing you want to start doing with what you learned **Summative Assessments** ● Culminating experiment ● End of Chapter or Unit Tests ● Research Papers ● Written/Essay Assessments **Benchmark Assessments** ● Short Answer/Multiple Choice/Fill in the Blank **Alternative Assessments** ● Create Something - have students build/create something that requires that they apply what they have learned		

	● Oral Presentations ● Research Based Writing ● Questions for Comprehension ● Peer Assessment ● Presentations ● Scientific Notebooks ● Self-Assessment ● WebQuests		
STAGE 3: Learning Plan			
Learning Activities/Content: *(What is the core content of this unit? What performance tasks/ activities will students do? What skills will students know? Include content that adheres to NJ Administrative Code and Statutes:* ● *Amistad Law* ● *Holocaust Law* ● *LGBTQ/Disabilities Law)*	● Use evidence to support the explanation that traits can be influenced by the environment Examples of the environment affecting a trait could include normally tall plants grown with insufficient water are stunted; and, a pet dog that is given too much food and little exercise may become overweight.). ● 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 examples of cause and effect relationships could be plants that have larger thorns		

	than other plants may be less likely to be eaten by predators; and, animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.). Climate Change: Collaborate with peers on the effects of extreme weather and extreme temperatures on animal survival. DEI: Create assignments that capitalize on students' cultural and linguistic resources from their backgrounds (e.g., home and community) that can serve as intellectual resources in the science classroom. Potential Activities: ● Introduce vocabulary: adaptation, hibernation, natural selection, camouflage, migration, population, competition, mimicry, trait ● Read a newspaper or journal article that provides information about an ecosystem and explain why the author included certain informational items and terms. ● Read an editorial that proposes human needs as more important than animals within an ecosystem. ● Analyze the text to identify which claims are supported by evidence and		

	facts in the text and which claims are based on speculation or reasoned judgment. ● Using the Internet, find examples of food webs and/or food chains. ● Read about how scientists collect data and study ecosystems. ● DEI: Compare how different scientists from around the globe conduct research and how the results of their studies are used.		
Resources: *(Include names of texts and all online resources)*	Amplify Science: Environments and Survival: Snails, Robots, and Biomimicry ● http://www.nextgenscience.org/ ● http://www.learn360.com ● Scholastic News (w/ online resource) ● Science Spin (w/ online resource) ● Brainpop Jr.		
Differentiation: *(What type of differentiated instruction will be used for each of the following subgroups:* *1. Special Education* *2. English Language Learners (ELLs)* *3. At Risk/BSI* *4. Gifted & Talented/Advanced 5. 504)*	**Special Education** ● Individualized Education Plans (IEPs) ● Exemplars of varied performance levels ● Multi-media presentations ● Sheltered Instruction ● Consultation with CST ● Manipulatives		

	● Scaffolded Lessons ● Guided note-taking ● Study Guides ● Modified homework ● Differentiated pre-typed class notes and example problems ● Use of the inclusion teacher to re-instruct in flexible small groups for the struggling learner ● Use of alternate assessments **English Language Learners (ELLs)** ● Total Physical Response (TPR) ● SIOP ● Dictionaries ● Mnemonic devices ● Visual aids ● Modeling ● Provide notes to students as needed in native language ● Cultural responsiveness ● Present information in a variety of ways		

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	● Internet based research ● Open-ended responses ● Curriculum Compacting ● Advanced problems to extend the critical thinking skills of advanced learner ● Supplemental reading material for independent study ● Flexible grouping ● Tiered assignments ● Topic selection by interest ● Elevated questioning techniques using Webb's Depth of Knowledge matrix **504 Plans** ● Preferential seating. ● Extended time on tests and assignments. ● Reduced homework or classwork. ● Verbal, visual, or technology aids. ● Modified textbooks or audio-video materials. ● Oral assessments		