

Eagleswood Township School District Curriculum

Science

Grade 3

Standard Alignment September 2016

NJDOE Adoption Date September 2016

Revised January 2020

BOE Approved January 2021

Pacing Guide

Unit	Anticipated Timeframe
Unit 1: Engineering	20 Days
Unit 2: Forces	30 Days
Unit 3: Motion	30 Days
Unit 4 Interdependent Relationships in Ecosystems:Life Cycles and Inherited Traits	20 Days
Unit 5 Interdependent Relationships in Ecosystems:Organisms and Their Environments	30 Days
Unit 6 Interdependent Relationships in Ecosystems:Fossils	20 Days
Unit 7: Weather and Climate	20 Days (June)

Core Materials:

Houghton Mifflin Harcourt Science Textbook

Studies Weekly

Career Readiness, Life Literacies, and Key Skills Core Ideas

The following units will incorporate the following Career Readiness, Life Literacies, and Key Skills Core Ideas:

You can give back in areas that matter to you.

Individuals can choose to accept inevitable risk or take steps to protect themselves by avoiding or reducing risk.

Taxes are collected on a variety of goods and services at the local, state, and federal levels.

An individual's passions, aptitude and skills can affect his/her employment and earning potential.

Collaboration with individuals with diverse perspectives can result in new ways of thinking and/or innovative solutions.

Curiosity and a willingness to try new ideas (intellectual risk-taking) contributes to the development of creativity and innovation skills.

Digital tools allow for remote collaboration and rapid sharing of ideas unrestricted by geographic location or time.

Computer Science and Design Thinking

This Unit will include incorporate the following core ideas.

Computing devices may be connected to other devices to form a system as a way to extend their capabilities

Shared features allow for common troubleshooting strategies that can be effective for many systems.

The development and modification of computing technology is driven by individual's needs and wants and can affect individuals differently.

Data can be organized, displayed, and presented to highlight relationships.

Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.

Often, several design solutions exist, each better in some way than the others.

	Correlation Key	
Holocaust	Amistad	Financial Literacy

Career Readiness, Life Literacies, and Key Skills Practices

<p>Act as a responsible and contributing community members and employee.</p>	<p>Students understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.</p>
<p>Consider the environmental, social and economic impacts of decisions.</p>	<p>Students understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organization, and the environment. They are aware of and utilize new technologies, understandings, procedures, materials, and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and the profitability of the organization.</p>
<p>Demonstrate creativity and innovation.</p>	<p>Students regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.</p>
<p>Utilize critical thinking to make sense of problems and persevere in solving them.</p>	<p>Students readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.</p>

<p>Model integrity, ethical leadership and effective management.</p>	<p>Students consistently act in ways that align personal and community-held ideals and principles while employing strategies to positively influence others in the workplace. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the directions and actions of a team or organization, and they apply insights into human behavior to change others' action, attitudes and/or beliefs. They recognize the near-term and long-term effects that management's actions and attitudes can have on productivity, morals and organizational culture.</p>
<p>Plan education and career paths aligned to personal goals.</p>	<p>Students take personal ownership of their own education and career goals, and they regularly act on a plan to attain these goals. They understand their own career interests, preferences, goals, and requirements. They have perspective regarding the pathways available to them and the time, effort, experience and other requirements to pursue each, including a path of entrepreneurship. They recognize the value of each step in the education and experiential process, and they recognize that nearly all career paths require ongoing education and experience. They seek counselors, mentors, and other experts to assist in the planning and execution of career and personal goals.</p>
<p>Use technology to enhance productivity, increase collaboration and communicate effectively.</p>	<p>Students find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.</p>

<p>Work productively in teams while using cultural/global competence.</p>	<p>Students positively contribute to every team, whether formal or informal. They apply an awareness of cultural differences to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.</p>
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<p>Unit 1: Engineering and Technology</p>	<p>Duration: 15-20 Days (September)</p>
<p>Standards:</p> <p>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.</p> <p>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.</p> <p>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.</p>	
<p>Unit Summary: Students will be exposed to engineering in this unit. This unit has three lessons attached to it and should be completed in about 15-20 Days. They will be able to define problems, design solutions, test solutions, and make improvements to those solutions.</p>	
<p style="text-align: center;">Interdisciplinary Skills</p> <p>Primary Interdisciplinary Connections: Infused within the unit are connections to the NJSL for Mathematics, Language Arts</p>	
<p>NJLSA.SL2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.</p> <p>NJLSA.W10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.</p> <p>SL.3.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade</p>	

3 topics and texts, building on others' ideas and expressing their own clearly.

Career Readiness, Life Literacies, and Key Skills

9.1.5.CR.1: Compare various ways to give back and relate them to your strengths, interests, and other personal factors.

9.1.5.EG.2: Describe how tax monies are spent

9.1.5.RMI.1: Identify risks that individuals and households face.

9.1.5.RMI.2: Justify reasons to have insurance.

9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.

9.2.5.CAP.2: Identify how you might like to earn an income.

9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations. 9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification.

9.4.5.CI.1: Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate change issue and deliberate about possible solutions (e.g., W.4.6, 3.MD.B.3, 7.1.NM.IPERS.6).

9.4.5.CI.2: Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue (e.g., 6.3.5.CivicsPD.3, W.5.7).

9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one's thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a).

9.4.5.CI.4: Research the development process of a product and identify the role of failure as a part of the creative process (e.g., W.4.7, 8.2.5.ED.6)

Computer Science and Design Thinking

8.1.5.CS.1: Model how computing devices connect to other components to form a system.

8.1.5.CS.3: Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.

8.1.5.IC.1: Identify computing technologies that have impacted how individuals live and work and describe the factors that influenced the changes

8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.

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.4: Organize and present climate change data visually to highlight relationships or support a claim.

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.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.

Essential Understanding	Essential Questions
<p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> ● Engineers define problems ● Engineers design solutions ● Engineers test and improve solutions 	<ul style="list-style-type: none"> ● How do we define a problem? ● How do we design a solution? ● How do we test and improve a solution?
Evidence of Student Learning	
<p>Performance Tasks: <i>Activities to provide evidence for student learning of content and cognitive skills.</i></p>	Other Assessments

<ul style="list-style-type: none"> • Students will research and plan how they would design a new type of backpack that could protect its contents from getting wet 	<p>Formative Assessments</p> <ul style="list-style-type: none"> • Teacher Observations • Response Cards • Graphic Organizers <p>Summative Assessments</p> <ul style="list-style-type: none"> • Tests • Quizzes • Hands-On Activities <p>Benchmark Assessment</p> <ul style="list-style-type: none"> • Beginning of the Year Benchmark • Mid-Year Benchmark • End of the Year Benchmark <p>Alternative Assessments</p> <ul style="list-style-type: none"> • Teacher Observations • Group Work/Class Work
<p>Vocabulary</p> <p>constraint/criteria/engineer/technology</p>	
<p>Knowledge and Skills</p>	
<p>Content</p>	<p>Skills</p>

<p><i>Students will know...</i></p> <ul style="list-style-type: none"> • How to define a problem. • How to design a solution to a problem. • How to test and improve a solution. 	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> • Define problems and design solutions to those problems • Test solutions and make improvements to solutions
Instructional Plan	
Suggested Activities	Resources
<ul style="list-style-type: none"> - Backpacking trip supplies (must meet a certain weight limit) - Irrigation model - Prevent a skateboard wheel from coming off of a skateboard 	<ul style="list-style-type: none"> - www.brainpop.com - www.newsela.com (leveled texts) - https://www.teachengineering.org/ - www.readworks.org (leveled texts) - http://www.sps186.org/resources/sciencek5/?p=13475 - https://betterlesson.com/lesson/632399/animal-groups-benefits-and-disadvantages - http://www.livebinders.com/play/play?id=1179151#anchor - http://artsnowlearning.org/ - http://ngss-k-5-ausd.weebly.com/
Print Material	
Websites	
	<ul style="list-style-type: none"> - www.brainpop.com - www.newsela.com (leveled texts) - https://www.teachengineering.org/

- www.readworks.org (leveled texts)
- <http://www.sps186.org/resources/sciencek5/?p=13475>
- <https://betterlesson.com/lesson/632399/animal-groups-benefits-and-disadvantages>
- <http://www.livebinders.com/play/play?id=1179151#anchor>
- <http://artsnowlearning.org/>
- <http://ngss-k-5-ausd.weebly.com/>

Modifications

Special Education Students / 504 *(These are just suggested ideas to modify instruction. All modifications and accommodations should be specific to each student's IEP or 504 plan)* reduce/revise assignments & assignments as per IEP; provide individual and small group assistance; notes, and study guides; provide background knowledge.

English Language learners: *use consistent, simplified language; provide bilingual when appropriate; provide cooperative learning opportunities, use modeling, visual aids, and manipulatives.*

Students at Risk of Failure: *Provide less distracting seating if possible, frequent check-in by teacher, study guides, notes, etc.*

Gifted Students: *provide additional enrichment activity involving demonstrating knowledge, deeper research to answer a higher level questions, or complimentary assignment.*

**For additional modifications and accommodations, see below*

English Language Learners

- Provide pictures and well labeled models
- Speak slowly and gesture when necessary
- Pre-teach vocabulary words
- Extended Time

- Less questions on a page for tests
- Modified Assignments

Gifted and Talented

- Higher level questioning
- Students design questions
- Higher level texts
- Peer tutoring
- Choice of activity to extend learning
- Expose to sophisticated vocabulary
- Open ended questions to activate higher level thinking
- Enrichment opportunities to push assessment boundaries

Basic Skills/Economically Disadvantaged/Students at Risk

- Strategic grouping
- Pre-teach concepts
- Small group for assessments
- Communication logs

Special Education

- Follow all IEP modifications
- Provide student with specific graphic organizers to help them note take about the different levels of government
- Provide students with notes from the lesson and discussions
- Labeled pictures related to concepts
- Check in's during experiments to help refocus

504

- Provide differentiated instruction as needed
- Follow all IEP modifications
- Review concepts and important vocabulary from previous lessons before teaching new information
- Check for student understanding often with formal, informal, verbal, and nonverbal measures
- Progress Monitoring

- Modified textbooks or audio-video materials

Unit 2 Disciplinary Core Ideas Chart

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p>Asking Questions and Defining Problems Asking questions and defining problems in grades 3–5 builds on grades K–2 experiences and progresses to specifying qualitative relationships. Ask questions that can be investigated based on patterns such as cause and effect relationships. (3-PS2-3) Define a simple problem that can be solved through the development of a new or improved object or tool. (3-PS2-4)</p> <p>Planning and Carrying Out Investigations Planning and carrying out investigations to answer questions or test solutions to problems in 3–5 builds on K–2 experiences and progresses to include investigations that control variables and provide evidence to support explanations or design solutions. Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered. (3-PS2-1) Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon or test a design solution. (3-PS2-2)</p>	<p>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)</p> <p>PS2.B: Types of Interactions Objects in contact exert forces on each other. (3-PS2-1) Electric, and magnetic forces between a pair of objects do not require</p>	<p>Patterns Patterns of change can be used to make predictions. (3-PS2-2)</p> <p>Cause and Effect Cause and effect relationships are routinely identified. (3-PS2-1) Cause and effect relationships are routinely identified, tested, and used to explain change. (3-PS2-3)</p> <p>-----</p> <p>Connections to Engineering, Technology, and Applications of Science Interdependence of Science, Engineering, and Technology Scientific discoveries about the natural world can often lead to new and improved technologies, which are developed through the engineering design process. (3-PS2-4)</p>

<p>----- Connections to Nature of Science Science Knowledge is Based on Empirical Evidence Science findings are based on recognizing patterns. (3-PS2-2)</p> <p>Scientific Investigations Use a Variety of Methods Science investigations use a variety of methods, tools, and techniques. (3-PS2-1)</p>	<p>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)</p>	
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<u>Career Readiness, Life Literacies, and Key Skills Practices</u>	
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<p>Utilize critical thinking to make sense of problems and persevere in solving them.</p>	<p>Students readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.</p>
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<p>Use technology to enhance productivity, increase collaboration and communicate effectively.</p>	<p>Students find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.</p>
<p>Work productively in teams while using cultural/global competence.</p>	<p>Students positively contribute to every team, whether formal or informal. They apply an awareness of cultural differences to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.</p>

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Often, several design solutions exist, each better in some way than the others.

Unit 2: Forces	Duration: 30 Days(October-November)
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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-PS2-3 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.

Unit Summary: Students will be exposed to forces. This unit has three lessons attached to it and should be completed in about 30-40 Days. They will be able to explore how forces work, discover different types of forces, learn about forces that act from a distance.

Interdisciplinary Skills

Primary Interdisciplinary Connections: Infused within the unit are connections to the NJSLs for Mathematics, Language Arts

RI.3.1. Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

SL.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.3.6. Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.

Career Readiness, Life Literacies, and Key Skills

9.1.5.CR.1: Compare various ways to give back and relate them to your strengths, interests, and other personal factors.

9.1.5.EG.2: Describe how tax monies are spent

9.1.5.RMI.1: Identify risks that individuals and households face.

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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).

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Computer Science and Design Thinking

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8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.

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.4: Organize and present climate change data visually to highlight relationships or support a claim.

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.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.

Essential Understandings

Essential Questions

Students will understand that...

- Forces are all around them
- There are different types of forces

- What are forces?
- What are some types of forces?
- What forces act from a distance?

<ul style="list-style-type: none"> • Certain forces act from a distance 	
Evidence of Student Learning	
Performance Tasks: <i>Activities to provide evidence for student learning of content and cognitive skills.</i>	Other Assessments
<ul style="list-style-type: none"> • Students will describe how and object can remain at rest when mass and forces are changing all around it. They will use online resources to identify other ways to describe force and motion 	<p>Formative Assessments</p> <ul style="list-style-type: none"> Interactive Notebook Performance Assessments Exit Slips <p>Summative Assessments</p> <ul style="list-style-type: none"> • Tests • Summary • Labs <p>Benchmark Assessment</p> <ul style="list-style-type: none"> • Beginning of the Year Benchmark • Mid-Year Benchmark • End of the Year Benchmark <p>Alternative Assessments</p> <ul style="list-style-type: none"> • Participation Rubric • Teacher Observations • Group Work/Class Work
Vocabulary	

balanced forces/electricity/force/gravity/magnet/net force/static electricity/unbalanced forces	
Knowledge and Skills	
Content	Skills
<p><i>Students will know...</i></p> <ul style="list-style-type: none"> ● What forces are ● Different types of forces ● What forces act from a distance 	<p><i>Students will be able to ...</i></p> <ul style="list-style-type: none"> ● Explore how forces work ● Discover different types of forces ● Learn about forces that act from a distance
Instructional Plan	
Suggested Activities	Resources
<ul style="list-style-type: none"> - Apply a strong and a weak force to a toy truck to see how it affects the motion of the object - Observe and measure contact forces by observing spring scales that are attached to two cars facing in the opposite direction - Build an electromagnet 	<ul style="list-style-type: none"> - www.brainpop.com - www.newsela.com (leveled texts) - https://www.teachengineering.org/ - www.readworks.org (leveled texts) - http://www.sps186.org/resources/sciencek5/?p=13475 - https://betterlesson.com/lesson/632399/animal-groups-benefits-and-disadvantages - http://www.livebinders.com/play/play?id=1179151#anchor - http://artsnowlearning.org/ - http://ngss-k-5-ausd.weebly.com/
Literature	
<ul style="list-style-type: none"> - HMH Science Dimensions Textbook/Workbook 	

- Studies Weekly Science

Websites

- www.brainpop.com
- www.newsela.com (leveled texts)
- <https://www.teachengineering.org/>
- www.readworks.org (leveled texts)
- <http://www.sps186.org/resources/sciencek5/?p=13475>
- <https://betterlesson.com/lesson/632399/animal-groups-benefits-and-disadvantages>
- <http://www.livebinders.com/play/play?id=1179151#anchor>
- <http://artsnowlearning.org/>
- <http://ngss-k-5-ausd.weebly.com/>

Modifications

Special Education Students / 504 (*These are just suggested ideas to modify instruction. All modifications and accommodations should be specific to each student's IEP or 504 plan*) reduce/revise assignments & assignments as per IEP; provide individual and small group assistance; notes, and study guides; provide background knowledge.

English Language learners: *use consistent, simplified language; provide bilingual when appropriate; provide cooperative learning opportunities, use modeling, visual aids, and manipulatives.*

Students at Risk of Failure: *Provide less distracting seating if possible, frequent check-in by teacher, study guides, notes, etc.*

Gifted Students: *provide additional enrichment activity involving demonstrating knowledge, deeper research to answer a higher level questions, or complimentary assignment.*

Suggested Options for Differentiation

English Language Learners

- Preview lessons
- Labeled pictures
- Use visuals
- Teacher tutoring
- Modified Assignments

Gifted and Talented

- Higher level questioning
- Students design questions
- Differentiated Assignments
- Choice board to extend learning
- Peer tutoring

Basic Skills/Economically Disadvantaged/Students at Risk

- Highlight key words
- Preview lessons
- Graphic organizers
- Cooperative learning groups

Special Education

- Provide differentiated instruction as needed
- Follow all IEP modifications
- Pre-teach and model strategies to learn and practice new vocabulary words pertaining to the unit
- Modified assignments

504

- Provide differentiated instruction as needed
- Follow all IEP modifications
- Review concepts and important vocabulary from previous lessons before teaching new information

- Check for student understanding often with formal, informal, verbal, and nonverbal measures
- Progress Monitoring
- Modified textbooks or audio-video materials.

Unit 3 Disciplinary Core Ideas Chart

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p>Asking Questions and Defining Problems Asking questions and defining problems in grades 3–5 builds on grades K–2 experiences and progresses to specifying qualitative relationships. Ask questions that can be investigated based on patterns such as cause and effect relationships. (3-PS2-3) Define a simple problem that can be solved through the development of a new or improved object or tool. (3-PS2-4)</p> <p>Planning and Carrying Out Investigations Planning and carrying out investigations to answer questions or test solutions to problems in 3–5 builds on K–2 experiences and progresses to include investigations that control variables and provide evidence to support explanations or design solutions. Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are</p>	<p>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)</p>	<p>Patterns Patterns of change can be used to make predictions. (3-PS2-2)</p> <p>Cause and Effect Cause and effect relationships are routinely identified. (3-PS2-1) Cause and effect relationships are routinely identified, tested, and used to explain change. (3-PS2-3)</p> <p>-----</p> <p>Connections to Engineering, Technology, and Applications of Science Interdependence of Science, Engineering, and Technology Scientific discoveries about the natural world can often lead to new and improved technologies, which are developed through the engineering design process. (3-PS2-4)</p>

<p>controlled and the number of trials considered. (3-PS2-1) Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon or test a design solution. (3-PS2-2)</p> <p>-----</p> <p>Connections to Nature of Science Science Knowledge is Based on Empirical Evidence Science findings are based on recognizing patterns. (3-PS2-2)</p> <p>Scientific Investigations Use a Variety of Methods Science investigations use a variety of methods, tools, and techniques. (3-PS2-1)</p>	<p>PS2.B: Types of Interactions Objects in contact exert forces on each other. (3-PS2-1) 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)</p>	
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	Correlation Key	
Holocaust	Amistad	Financial Literacy

Career Readiness, Life Literacies, and Key Skills Practices

<p>Act as a responsible and contributing community members and employee.</p>	<p>Students understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.</p>
<p>Consider the environmental, social and economic impacts of decisions.</p>	<p>Students understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organization, and the environment. They are aware of and utilize new technologies, understandings, procedures, materials, and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and the profitability of the organization.</p>
<p>Demonstrate creativity and innovation.</p>	<p>Students regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.</p>
<p>Utilize critical thinking to make sense of problems and persevere in solving them.</p>	<p>Students readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.</p>

<p>Model integrity, ethical leadership and effective management.</p>	<p>Students consistently act in ways that align personal and community-held ideals and principles while employing strategies to positively influence others in the workplace. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the directions and actions of a team or organization, and they apply insights into human behavior to change others' action, attitudes and/or beliefs. They recognize the near-term and long-term effects that management's actions and attitudes can have on productivity, morals and organizational culture.</p>
<p>Plan education and career paths aligned to personal goals.</p>	<p>Students take personal ownership of their own education and career goals, and they regularly act on a plan to attain these goals. They understand their own career interests, preferences, goals, and requirements. They have perspective regarding the pathways available to them and the time, effort, experience and other requirements to pursue each, including a path of entrepreneurship. They recognize the value of each step in the education and experiential process, and they recognize that nearly all career paths require ongoing education and experience. They seek counselors, mentors, and other experts to assist in the planning and execution of career and personal goals.</p>
<p>Use technology to enhance productivity, increase collaboration and communicate effectively.</p>	<p>Students find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.</p>

<p>Work productively in teams while using cultural/global competence.</p>	<p>Students positively contribute to every team, whether formal or informal. They apply an awareness of cultural differences to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.</p>
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Career Readiness, Life Literacies, and Key Skills Core Ideas

The following unit will incorporate the following Career Readiness, Life Literacies, and Key Skills Core Ideas:

You can give back in areas that matter to you.

Individuals can choose to accept inevitable risk or take steps to protect themselves by avoiding or reducing risk.

Taxes are collected on a variety of goods and services at the local, state, and federal levels.

An individual's passions, aptitude and skills can affect his/her employment and earning potential.

Collaboration with individuals with diverse perspectives can result in new ways of thinking and/or innovative solutions.

Curiosity and a willingness to try new ideas (intellectual risk-taking) contributes to the development of creativity and innovation skills.

Digital tools allow for remote collaboration and rapid sharing of ideas unrestricted by geographic location or time.

Computer Science and Design Thinking

This unit will incorporate the following core ideas.

Computing devices may be connected to other devices to form a system as a way to extend their capabilities

Shared features allow for common troubleshooting strategies that can be effective for many systems.

The development and modification of computing technology is driven by individual's needs and wants and can affect individuals differently.

Data can be organized, displayed, and presented to highlight relationships.

Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.

Often, several design solutions exist, each better in some way than the others.

Unit 3: Motion	Duration: 30 (December-January)
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.	
Unit Summary: Students will be exposed to motion. This unit has two lessons attached to it and should be completed in about 30-40 Days. They will be able to explore types of forces and motion, learn about the relationship between forces and motion, and identify patterns in motion.	
Interdisciplinary Skills	
Primary Interdisciplinary Connections: Infused within the unit are connections to the NJSL for Mathematics, Language Arts	

RI.3.1. Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

SL.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.3.6. Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.

Career Readiness, Life Literacies, and Key Skills

9.1.5.CR.1: Compare various ways to give back and relate them to your strengths, interests, and other personal factors.

9.1.5.EG.2: Describe how tax monies are spent

9.1.5.RMI.1: Identify risks that individuals and households face.

9.1.5.RMI.2: Justify reasons to have insurance.

9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.

9.2.5.CAP.2: Identify how you might like to earn an income.

9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.

9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification.

9.4.5.CI.1: Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate change issue and deliberate about possible solutions (e.g., W.4.6, 3.MD.B.3,7.1.NM.IPERS.6).

9.4.5.CI.2: Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue (e.g., 6.3.5.CivicsPD.3, W.5.7).

9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one's thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a).

Computer Science and Design Thinking

8.1.5.CS.1: Model how computing devices connect to other components to form a system.

8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.

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.4: Organize and present climate change data visually to highlight relationships or support a claim.

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.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.

Essential Understandings

Essential Questions

<p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> ● Motion is all around them ● There are patterns that take place during motion 	<ul style="list-style-type: none"> ● What is motion? ● What are some patterns in motion?
<p>Evidence of Student Learning</p>	
<p>Performance Tasks: <i>Activities to provide evidence for student learning of content and cognitive skills.</i></p> <ul style="list-style-type: none"> ● Students will write clues and guess what an object is based on its motion. 	<p style="text-align: center;">Other Assessments</p> <p>Formative Assessments</p> <ul style="list-style-type: none"> Teacher Observations Response Cards Graphic Organizers <p>Summative Assessments</p> <ul style="list-style-type: none"> ● Tests ● Hands-On Activities <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Beginning of the Year Benchmark ● Mid-Year Benchmark ● End of the Year Benchmark <p>Alternative Assessments</p> <ul style="list-style-type: none"> ● Teacher Observations ● Group Work/Class Work
<p>Vocabulary</p>	

frame of reference/motion/position/speed	
Knowledge and Skills	
Content	Skills
<i>Students will know...</i> <ul style="list-style-type: none"> ● What motion is ● What some patterns in motion are 	<i>Students will be able to ...</i> <ul style="list-style-type: none"> ● Explore types of forces and motion ● Learn about the relationship between forces and motion ● Identify patterns in motion
Instructional Plan	
Suggested Activities	Resources
<ul style="list-style-type: none"> - Students will work with a team to measure and describe walking speeds - Students will investigate variables in pendulums 	<ul style="list-style-type: none"> - www.brainpop.com - www.newsela.com (leveled texts) - https://www.teachengineering.org/ - www.readworks.org (leveled texts) - http://www.sps186.org/resources/sciencek5/?p=13475 - https://betterlesson.com/lesson/632399/animal-groups-benefits-and-disadvantages - http://www.livebinders.com/play/play?id=1179151#anchor - http://artsnowlearning.org/ - http://ngss-k-5-ausd.weebly.com/
Print Materials	
<ul style="list-style-type: none"> - HMH Dimensions textbook/workbook 	

- Studies Weekly Science

Websites

- www.brainpop.com
- www.newsela.com (leveled texts)
- <https://www.teachengineering.org/>
- www.readworks.org (leveled texts)
- <http://www.sps186.org/resources/sciencek5/?p=13475>
- <https://betterlesson.com/lesson/632399/animal-groups-benefits-and-disadvantages>
- <http://www.livebinders.com/play/play?id=1179151#anchor>
- <http://artsnowlearning.org/>
- <http://ngss-k-5-ausd.weebly.com/>

Modifications

Special Education Students / 504 (*These are just suggested ideas to modify instruction. All modifications and accommodations should be specific to each student's IEP or 504 plan*) reduce/revise assignments & assignments as per IEP; provide individual and small group assistance; notes, and study guides; provide background knowledge.

English Language learners: *use consistent, simplified language; provide bilingual when appropriate; provide cooperative learning opportunities, use modeling, visual aids, and manipulatives.*

Students at Risk of Failure: *Provide less distracting seating if possible, frequent check-in by teacher, study guides, notes, etc.*

Gifted Students: *provide additional enrichment activity involving demonstrating knowledge, deeper research to answer a higher level questions, or complimentary assignment.*

Suggested Options for Differentiation

English Language Learners

- Provide pictures and well labeled models
- Speak slowly and gesture when necessary
- Pre-teach vocabulary words
- Extended Time
- Less questions on a page for tests

Gifted and Talented

- Create an enhanced set of introductory activities (e.g. advance organizers, concept maps, concept puzzles)
- Provide options, alternatives and choices to differentiate and broaden the curriculum
- Organize and offer flexible small group learning activities
- Differentiate Assignments
- Complete different homework assignments than peers
- Open ended questions to activate higher level thinking
- Higher level texts

Basic Skills/Economically Disadvantaged/Students at Risk

- Pre-teach vocabulary using visuals and gestures
- Chunk texts
- Highlight key words
- Frequent breaks
- Strategic grouping
- Pre-teach concepts
- Communication logs

Modifications/Accommodations

Special Education

- Provide differentiated instruction as needed

<ul style="list-style-type: none"> ● Follow all IEP modifications ● Review concepts and important vocabulary from previous lessons before teaching new information ● Check for student understanding often with formal, informal, verbal, and nonverbal measures ● Progress Monitoring ● Strategic grouping ● Pre-teach concepts
504 <ul style="list-style-type: none"> ● Provide differentiated instruction as needed ● Follow all IEP modifications ● Review concepts and important vocabulary from previous lessons before teaching new information ● Check for student understanding often with formal, informal, verbal, and nonverbal measures ● Progress Monitoring ● Modified textbooks or audio-video materials

Unit 4 Disciplinary Core Ideas Chart

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p>Developing and Using Models Modeling in 3–5 builds on K–2 experiences and progresses to building and revising simple models and using models to represent events and design solutions. Develop models to describe phenomena. (3-LS1-1)</p> <p>-----Conn ections to Nature of Science Scientific Knowledge is Based on Empirical Evidence Science findings are based on recognizing patterns. (3-LS1-1)</p>	<p>LS1.B: Growth and Development of Organisms Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. (3-LS1-1)</p>	<p>Patterns Patterns of change can be used to make predictions. (3-LS1-1)</p>
Correlation Key		

Holocaust	Amistad	Financial Literacy
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<u>Career Readiness, Life Literacies, and Key Skills Practices</u>	
Act as a responsible and contributing community members and employee.	Students understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.
Consider the environmental, social and economic impacts of decisions.	Students understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organization, and the environment. They are aware of and utilize new technologies, understandings, procedures, materials, and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and the profitability of the organization.
Demonstrate creativity and innovation.	Students regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.

<p>Utilize critical thinking to make sense of problems and persevere in solving them.</p>	<p>Students readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.</p>
<p>Model integrity, ethical leadership and effective management.</p>	<p>Students consistently act in ways that align personal and community-held ideals and principles while employing strategies to positively influence others in the workplace. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the directions and actions of a team or organization, and they apply insights into human behavior to change others' action, attitudes and/or beliefs. They recognize the near-term and long-term effects that management's actions and attitudes can have on productivity, morals and organizational culture.</p>
<p>Plan education and career paths aligned to personal goals.</p>	<p>Students take personal ownership of their own education and career goals, and they regularly act on a plan to attain these goals. They understand their own career interests, preferences, goals, and requirements. They have perspective regarding the pathways available to them and the time, effort, experience and other requirements to pursue each, including a path of entrepreneurship. They recognize the value of each step in the education and experiential process, and they recognize that nearly all career paths require ongoing education and experience. They seek counselors, mentors, and other experts to assist in the planning and execution of career and personal goals.</p>

<p>Use technology to enhance productivity, increase collaboration and communicate effectively.</p>	<p>Students find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.</p>
<p>Work productively in teams while using cultural/global competence.</p>	<p>Students positively contribute to every team, whether formal or informal. They apply an awareness of cultural differences to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.</p>

Career Readiness, Life Literacies, and Key Skills Core Ideas
<p><i>The following unit will the following Career Readiness, Life Literacies, and Key Skills Core Ideas:</i></p> <p>You can give back in areas that matter to you.</p> <p>Individuals can choose to accept inevitable risk or take steps to protect themselves by avoiding or reducing risk.</p> <p>Taxes are collected on a variety of goods and services at the local, state, and federal levels.</p> <p>An individual’s passions, aptitude and skills can affect his/her employment and earning potential.</p> <p>Collaboration with individuals with diverse perspectives can result in new ways of thinking and/or innovative solutions.</p> <p>Curiosity and a willingness to try new ideas (intellectual risk-taking) contributes to the development of creativity and innovation skills.</p>

Digital tools allow for remote collaboration and rapid sharing of ideas unrestricted by geographic location or time.

Computer Science and Design Thinking

This unit will include incorporate the following core ideas.

Computing devices may be connected to other devices to form a system as a way to extend their capabilities

Shared features allow for common troubleshooting strategies that can be effective for many systems.

The development and modification of computing technology is driven by individual's needs and wants and can affect individuals differently.

Data can be organized, displayed, and presented to highlight relationships.

Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.

Often, several design solutions exist, each better in some way than the others.

Unit 4: Life Cycles and Inherited Traits

Duration: 20 Days (February)

Standards:

3-LS1-1 - Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

3-LS3-1 - Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.

Unit Summary: Students will be exposed to life cycles and inherited traits. This unit has three lessons attached to it and should be completed in about 15-20 Days. They will be able to explore the life cycles of plants and animals and discover inherited plant and animal traits.

Interdisciplinary Skills

Primary Interdisciplinary Connections: Infused within the unit are connections to the NJSLs for Mathematics, Language Arts

RI.3.1. Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

SL.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.3.6. Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.

Career Readiness, Life Literacies, and Key Skills

9.1.5.CR.1: Compare various ways to give back and relate them to your strengths, interests, and other personal factors.

9.1.5.EG.2: Describe how tax monies are spent

9.1.5.RMI.1: Identify risks that individuals and households face.

9.1.5.RMI.2: Justify reasons to have insurance.

9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.

9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification.

9.4.5.CI.1: Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate change issue and deliberate about possible solutions (e.g., W.4.6, 3.MD.B.3, 7.1.NM.IPERS.6).

9.4.5.CI.2: Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue (e.g., 6.3.5.CivicsPD.3, W.5.7).

9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one's thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a).

9.4.5.CI.4: Research the development process of a product and identify the role of failure as a part of the creative process (e.g., W.4.7, 8.2.5.ED.6)

Computer Science and Design Thinking

8.1.5.CS.1: Model how computing devices connect to other components to form a system.

8.1.5.CS.3: Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.

8.1.5.IC.1: Identify computing technologies that have impacted how individuals live and work and describe the factors that influenced the changes

8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.

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.4: Organize and present climate change data visually to highlight relationships or support a claim.

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.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.

Essential Understandings	Essential Questions
<p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> ● There are plant life cycles ● There are animal life cycles ● There are traits that plants inherit ● There are traits that animals inherit 	<ul style="list-style-type: none"> ● What are some plant life cycles? ● What are some animal life cycles? ● What are inherited plant and animal traits?
Evidence of Student Learning	
<p>Performance Tasks: <i>Activities to provide evidence for student learning of content and cognitive skills.</i></p> <ul style="list-style-type: none"> ● Students will work to develop a model that demonstrates a plant or animal life cycle and compare it to other plant or animal life cycles. 	<p style="text-align: center;">Other Assessments</p> <p>Formative Assessments</p> <ul style="list-style-type: none"> ● Interactive Notebook ● Performance Assessments ● Exit Slips ● Graphic Organizers <p>Summative Assessments</p> <ul style="list-style-type: none"> ● Quizzes

	<ul style="list-style-type: none"> ● Summary ● Hands-On Activities <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Beginning of the Year Benchmark ● Mid-Year Benchmark ● End of the Year Benchmark <p>Alternative Assessments</p> <ul style="list-style-type: none"> ● Teacher Observations ● Group Work/Class Work
<p>Vocabulary</p> <p>Life cycle/metamorphosis/organism/pupa/trait</p>	
<p>Knowledge and Skills</p>	
<p>Content</p>	<p>Skills</p>
<p><i>Students will know....</i></p> <ul style="list-style-type: none"> ● What some plant life cycles are ● What some animal life cycles are ● What traits animals inherit ● What traits plants inherit 	<p><i>Students will be able to ...</i></p> <ul style="list-style-type: none"> ● Explore the life cycles of plants and animals ● Discover inherited plant and animal traits
<p>Instructional Plan</p>	
<p>Suggested Activities</p>	<p>Resources</p>

<ul style="list-style-type: none"> ● Plant seeds to watch them germinate and grow (observe the life cycle) ● Compare and contrast poster of insects and amphibians ● Observe mealworm metamorphosis 	<ul style="list-style-type: none"> - www.brainpop.com - www.newsela.com (leveled texts) - https://www.teachengineering.org/ - www.readworks.org (leveled texts) - http://www.sps186.org/resources/sciencek5/?p=13475 - https://betterlesson.com/lesson/632399/animal-groups-benefits-and-disadvantages - http://www.livebinders.com/play/play?id=1179151#anchor - http://artsnowlearning.org/ - http://ngss-k-5-ausd.weebly.com/
<p>Print Material</p> <ul style="list-style-type: none"> - HMH Dimensions Textbook/Workbook - Studies Weekly Science 	
<p>Websites</p> <ul style="list-style-type: none"> - www.brainpop.com - www.newsela.com (leveled texts) - https://www.teachengineering.org/ - www.readworks.org (leveled texts) - http://www.sps186.org/resources/sciencek5/?p=13475 - https://betterlesson.com/lesson/632399/animal-groups-benefits-and-disadvantages - http://www.livebinders.com/play/play?id=1179151#anchor - http://artsnowlearning.org/ - http://ngss-k-5-ausd.weebly.com/ 	

Modifications

Special Education Students / 504 (*These are just suggested ideas to modify instruction. All modifications and accommodations should be specific to each student's IEP or 504 plan*) reduce/revise assignments & assignments as per IEP; provide individual and small group assistance; notes, and study guides; provide background knowledge.

English Language learners: *use consistent, simplified language; provide bilingual when appropriate; provide cooperative learning opportunities, use modeling, visual aids, and manipulatives.*

Students at Risk of Failure: *Provide less distracting seating if possible, frequent check-in by teacher, study guides, notes, etc.*

Gifted Students: *provide additional enrichment activity involving demonstrating knowledge, deeper research to answer a higher level questions, or complimentary assignment.*

Suggested Options for Differentiation

English Language Learners

- Provide pictures and well labeled models
- Speak slowly and gesture when necessary
- Pre-teach vocabulary words
- Extended time on assessments
- Small group for assessment

Gifted and Talented

- Organize and offer flexible small group learning activities
- Teach cognitive and methodological skills
- Use centers

Basic Skills/Economically Disadvantaged/Students at Risk

- Strategic grouping
- Pre-teach concepts

<ul style="list-style-type: none"> ● Small group for assessments ● Check in's during experiments to help refocus ● Communication logs
<p>Special Education</p> <ul style="list-style-type: none"> ● Follow all IEP modifications ● Provide visual aids to support concepts being taught ● Use graphic organizers to help students organize important information from a lesson ● Reword Directions ● Strategic grouping ● Pre-teach concepts ● Small group for assessments ● Check in's during experiments to help refocus
<p>504</p> <ul style="list-style-type: none"> ● Provide differentiated instruction as needed ● Follow all IEP modifications ● Review concepts and important vocabulary from previous lessons before teaching new information ● Check for student understanding often with formal, informal, verbal, and nonverbal measures ● Progress Monitoring ● Modified textbooks or audio-video materials

Unit 5 Disciplinary Core Ideas Chart

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p>Analyzing and Interpreting Data Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used. Analyze and interpret data to</p>	<p>LS2.C: Ecosystem Dynamics, Functioning, and Resilience 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</p>	<p>Cause and Effect Cause and effect relationships are routinely identified and used to explain change. (3-LS4- 2),(3-LS4-3)</p> <p>Scale, Proportion, and Quantity Observable phenomena exist from very</p>

<p>make sense of phenomena using logical reasoning. (3-LS4-1)</p> <p>Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in 3–5 builds on K–2 experiences and progresses to the use of evidence in constructing explanations that specify variables that describe and predict phenomena and in designing multiple solutions to design problems. Use evidence (e.g., observations, patterns) to construct an explanation. (3-LS4-2)</p> <p>Engaging in Argument from Evidence Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s). Construct an argument with evidence. (3-LS4-3) Make a claim about the merit of a solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem. (3-LS4-4)</p>	<p>environment, and some die. (secondary to 3-LS4-4)</p> <p>LS4.A: Evidence of Common Ancestry and Diversity 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)</p> <p>LS4.B: Natural Selection Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. (3-LS4-2)</p> <p>LS4.C: Adaptation For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3)</p> <p>LS4.D: Biodiversity and Humans Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4)</p>	<p>short to very long time periods. (3-LS4-1)</p> <p>Systems and System Models A system can be described in terms of its components and their interactions. (3-LS4-4)</p> <p>-----</p> <p>Connections to Engineering, Technology, and Applications of Science</p> <p>Interdependence of Science, Engineering, and Technology Knowledge of relevant scientific concepts and research findings is important in engineering. (3-LS4-4)</p> <p>-----</p> <p>Connections to Nature of Science</p> <p>Scientific Knowledge Assumes an Order and Consistency in Natural Systems Science assumes consistent patterns in natural systems. (3-LS4-1)</p>
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	Correlation Key	
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Holocaust

Amistad

Financial Literacy

Career Readiness, Life Literacies, and Key Skills Practices

Act as a responsible and contributing community members and employee.	Students understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.
Consider the environmental, social and economic impacts of decisions.	Students understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organization, and the environment. They are aware of and utilize new technologies, understandings, procedures, materials, and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and the profitability of the organization.
Demonstrate creativity and innovation.	Students regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.

<p>Utilize critical thinking to make sense of problems and persevere in solving them.</p>	<p>Students readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.</p>
<p>Model integrity, ethical leadership and effective management.</p>	<p>Students consistently act in ways that align personal and community-held ideals and principles while employing strategies to positively influence others in the workplace. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the directions and actions of a team or organization, and they apply insights into human behavior to change others' action, attitudes and/or beliefs. They recognize the near-term and long-term effects that management's actions and attitudes can have on productivity, morals and organizational culture.</p>
<p>Plan education and career paths aligned to personal goals.</p>	<p>Students take personal ownership of their own education and career goals, and they regularly act on a plan to attain these goals. They understand their own career interests, preferences, goals, and requirements. They have perspective regarding the pathways available to them and the time, effort, experience and other requirements to pursue each, including a path of entrepreneurship. They recognize the value of each step in the education and experiential process, and they recognize that nearly all career paths require ongoing education and experience. They seek counselors, mentors, and other experts to assist in the planning and execution of career and personal goals.</p>

<p>Use technology to enhance productivity, increase collaboration and communicate effectively.</p>	<p>Students find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.</p>
<p>Work productively in teams while using cultural/global competence.</p>	<p>Students positively contribute to every team, whether formal or informal. They apply an awareness of cultural differences to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.</p>

Career Readiness, Life Literacies, and Key Skills Core Ideas

The following unit will incorporate the following Career Readiness, Life Literacies, and Key Skills Core Ideas:

You can give back in areas that matter to you.

Individuals can choose to accept inevitable risk or take steps to protect themselves by avoiding or reducing risk.

Taxes are collected on a variety of goods and services at the local, state, and federal levels.

An individual's passions, aptitude and skills can affect his/her employment and earning potential.

Collaboration with individuals with diverse perspectives can result in new ways of thinking and/or innovative solutions.

Curiosity and a willingness to try new ideas (intellectual risk-taking) contributes to the development of creativity and innovation skills.

Digital tools allow for remote collaboration and rapid sharing of ideas unrestricted by geographic location or time.

Computer Science and Design Thinking

This unit will incorporate the following core ideas.

Computing devices may be connected to other devices to form a system as a way to extend their capabilities

Shared features allow for common troubleshooting strategies that can be effective for many systems.

The development and modification of computing technology is driven by individual's needs and wants and can affect individuals differently.

Data can be organized, displayed, and presented to highlight relationships.

Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.

Often, several design solutions exist, each better in some way than the others.

Unit 5: Organisms and Their Environment

Duration: 30Days (March-April)

Unit Summary: Students will be exposed to organisms and their environment. This unit has four lessons attached to it and should be completed in about 30-40 Days. They will be able to explore inheritance and variation of traits in organisms, discover how different organisms adapt to their environment, and identify the cause and effect of how organisms change when environments change.

Standards:

3-LS2-1 - Construct an argument that some animals form groups that help members survive.

3-LS3-2 - Use evidence to support the explanation that traits can be influenced by the environment.

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.

NJ Student Learning Standards

Interdisciplinary Skills

Primary Interdisciplinary Connections: Infused within the unit are connections to the NJSLS for Mathematics, Language Arts

RI.3.1. Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

SL.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.3.6. Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.

Career Readiness, Life Literacies, and Key Skills

9.1.5.CR.1: Compare various ways to give back and relate them to your strengths, interests, and other personal factors.

9.1.5.EG.2: Describe how tax monies are spent

9.1.5.RMI.1: Identify risks that individuals and households face.

9.1.5.RMI.2: Justify reasons to have insurance.

9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.

9.2.5.CAP.2: Identify how you might like to earn an income.

9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.

9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification.

9.4.5.CI.1: Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate change issue and deliberate about possible solutions (e.g., W.4.6, 3.MD.B.3, 7.1.NM.IPERS.6).

9.4.5.CI.2: Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue (e.g., 6.3.5.CivicsPD.3, W.5.7).

9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one’s thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a).

9.4.5.CI.4: Research the development process of a product and identify the role of failure as a part of the creative process (e.g., W.4.7, 8.2.5.ED.6)

Computer Science and Design Thinking

8.1.5.CS.1: Model how computing devices connect to other components to form a system.

8.1.5.CS.3: Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.

8.1.5.IC.1: Identify computing technologies that have impacted how individuals live and work and describe the factors that influenced the changes

8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.

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.4: Organize and present climate change data visually to highlight relationships or support a claim.

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.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.

Essential Understandings

Essential Questions

Students will understand that...

- The environment affects traits
- Adaptations help an organism survive
- Organisms can succeed in their environments with the proper characteristics
- Environments can changes and there is an effect because of that

- How does the environment affect traits?
- What are adaptations?
- How can organisms succeed in their environment?
- What happens when environments change?

Evidence of Student Learning

<p>Performance Tasks: <i>Activities to provide evidence for student learning of content and cognitive skills.</i></p> <ul style="list-style-type: none"> • Students will research, plan, and write ideas about why some animals have thicker body fat than others. 	<p style="text-align: center;">Other Assessments</p> <p>Formative Assessments</p> <ul style="list-style-type: none"> Exit Slips Response Cards Graphic Organizers <p>Summative Assessments</p> <ul style="list-style-type: none"> • Summary • Labs • Hands-On Activities <p>Benchmark Assessment</p> <ul style="list-style-type: none"> • Beginning of the Year Benchmark • Mid-Year Benchmark • End of the Year Benchmark <p>Alternative Assessments</p> <ul style="list-style-type: none"> • Teacher Observations • Participation Rubric • Group Work/Class Work
<p>Vocabulary</p> <p>adaptation/camouflage/environment/habitat/mimicry/population</p>	
<p>Knowledge and Skills</p>	
<p>Content</p>	<p>Skills</p>

<p><i>Students will know....</i></p> <ul style="list-style-type: none"> ● How the environment affects traits ● What adaptations are ● How organisms can succeed in their environment ● What happens when environments change 	<p><i>Students will be able to ...</i></p> <ul style="list-style-type: none"> ● Explore inheritance and variation of traits in organisms ● Discover how different organisms adapt to their environment ● Identify the cause and effect of how organisms change when environments change
<p>Instructional Plan</p>	
<p style="text-align: center;">Suggested Activities</p> <ul style="list-style-type: none"> ● Design a greenhouse ● Water and watch how plants grow over 2 weeks depending on how much water you give them ● Illustrate adaptations ● Model bird beaks ● Battle of the beans ● Design and model a solution to help caribou migrate after an environmental change cause by human activity ● Investigate various career opportunities within each area of study 	<p style="text-align: center;">Resources</p> <ul style="list-style-type: none"> - www.brainpop.com - www.newsela.com (leveled texts) - https://www.teachengineering.org/ - www.readworks.org (leveled texts) - http://www.sps186.org/resources/sciencek5/?p=13475 - https://betterlesson.com/lesson/632399/animal-groups-benefits-and-disadvantages - http://www.livebinders.com/play/play?id=1179151#anchor - http://artsnowlearning.org/ - http://ngss-k-5-ausd.weebly.com/
<p>Print Materials</p> <ul style="list-style-type: none"> - HMH Dimensions Textbook/Workbook - Studies Weekly Science - <i>Great Black Heroes: Five Brilliant Scientists: Five Brilliant Scientists</i> by Lyndia Jones - <i>Mrs. Katz and Tush</i> by Patricia Polacco(also) 	

Websites

- www.brainpop.com
- www.newsela.com (leveled texts)
- <https://www.teachengineering.org/>
- www.readworks.org (leveled texts)
- <http://www.sps186.org/resources/sciencek5/?p=13475>
- <https://betterlesson.com/lesson/632399/animal-groups-benefits-and-disadvantages>
- <http://www.livebinders.com/play/play?id=1179151#anchor>
- <http://artsnowlearning.org/>
- <http://ngss-k-5-ausd.weebly.com/>

Modifications

Special Education Students / 504 (*These are just suggested ideas to modify instruction. All modifications and accommodations should be specific to each student's IEP or 504 plan*) reduce/revise assignments & assignments as per IEP; provide individual and small group assistance; notes, and study guides; provide background knowledge.

English Language learners: *use consistent, simplified language; provide bilingual when appropriate; provide cooperative learning opportunities, use modeling, visual aids, and manipulatives.*

Students at Risk of Failure: *Provide less distracting seating if possible, frequent check-in by teacher, study guides, notes, etc.*

Gifted Students: *provide additional enrichment activity involving demonstrating knowledge, deeper research to answer a higher level questions, or complimentary assignment.*

Suggested Options for Differentiation

English Language Learners

- Provide pictures and well labeled models
- Speak slowly and gesture when necessary
- Extended time on assessments

- Small group for assessment

Gifted and Talented

- Differentiate Assignments
- Differentiate Texts
- Complete Different Homework than peers

Basic Skills/Economically Disadvantaged/Students at Risk

- Graphic organizers
- Build background knowledge
- Increased parent communication
- Strategic grouping
- Pre-teach concepts
- Small group for assessments

Special Education

- Follow all IEP modifications
- Provide manipulatives or the opportunity to draw solution strategies
- Pre-Teach concepts
- Extended Time
- Strategic grouping
- Small group for assessments
- Check in's during experiments to help refocus

504

- Provide differentiated instruction as needed
- Follow all IEP modifications
- Review concepts and important vocabulary from previous lessons before teaching new information
- Check for student understanding often with formal, informal, verbal, and nonverbal measures
- Progress Monitoring
- Modified textbooks or audio-video materials

Unit 6 Disciplinary Core Ideas Chart

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p>Analyzing and Interpreting Data Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used. Analyze and interpret data to make sense of phenomena using logical reasoning. (3-LS4-1)</p>	<p>LS2.C: Ecosystem Dynamics, Functioning, and Resilience 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)</p>	<p>Cause and Effect Cause and effect relationships are routinely identified and used to explain change. (3-LS4- 2),(3-LS4-3)</p>
<p>Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in 3–5 builds on K–2 experiences and progresses to the use of evidence in constructing explanations that specify variables that describe and predict phenomena and in designing multiple solutions to design problems. Use evidence (e.g., observations, patterns) to construct an explanation. (3-LS4-2)</p>	<p>LS4.A: Evidence of Common Ancestry and Diversity 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)</p>	<p>Scale, Proportion, and Quantity Observable phenomena exist from very short to very long time periods. (3-LS4-1)</p>
<p>Engaging in Argument from Evidence Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed</p>	<p>LS4.B: Natural Selection Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. (3-LS4-2)</p>	<p>Systems and System Models A system can be described in terms of its components and their interactions. (3-LS4-4)</p> <p>-----</p> <p>Connections to Engineering, Technology, and Applications of Science</p>
	<p>LS4.C: Adaptation For any particular environment, some kinds of organisms survive well, some survive less well, and</p>	<p>Interdependence of Science, Engineering, and Technology Knowledge of relevant scientific concepts and research findings is important in engineering. (3-LS4-4)</p> <p>-----</p> <p>Connections to Nature of Science</p>
		<p>Scientific Knowledge Assumes an Order and Consistency in Natural Systems Science assumes consistent patterns in natural systems. (3-LS4-1)</p>

<p>world(s). Construct an argument with evidence. (3-LS4-3) Make a claim about the merit of a solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem. (3-LS4-4)</p>	<p>some cannot survive at all. (3-LS4-3)</p> <p>LS4.D: Biodiversity and Humans Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4)</p>	
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	Correlation Key	
Holocaust	Amistad	Financial Literacy

<u>Career Readiness, Life Literacies, and Key Skills Practices</u>	
<p>Act as a responsible and contributing community members and employee.</p>	<p>Students understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.</p>

<p>Consider the environmental, social and economic impacts of decisions.</p>	<p>Students understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organization, and the environment. They are aware of and utilize new technologies, understandings, procedures, materials, and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and the profitability of the organization.</p>
<p>Demonstrate creativity and innovation.</p>	<p>Students regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.</p>
<p>Utilize critical thinking to make sense of problems and persevere in solving them.</p>	<p>Students readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.</p>
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<p>Plan education and career paths aligned to personal goals.</p>	<p>Students take personal ownership of their own education and career goals, and they regularly act on a plan to attain these goals. They understand their own career interests, preferences, goals, and requirements. They have perspective regarding the pathways available to them and the time, effort, experience and other requirements to pursue each, including a path of entrepreneurship. They recognize the value of each step in the education and experiential process, and they recognize that nearly all career paths require ongoing education and experience. They seek counselors, mentors, and other experts to assist in the planning and execution of career and personal goals.</p>
<p>Use technology to enhance productivity, increase collaboration and communicate effectively.</p>	<p>Students find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.</p>
<p>Work productively in teams while using cultural/global competence.</p>	<p>Students positively contribute to every team, whether formal or informal. They apply an awareness of cultural differences to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.</p>

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Computer Science and Design Thinking

This unit will incorporate the following core ideas.

Computing devices may be connected to other devices to form a system as a way to extend their capabilities

Shared features allow for common troubleshooting strategies that can be effective for many systems.

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Data can be organized, displayed, and presented to highlight relationships.

Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.

Often, several design solutions exist, each better in some way than the others.

Science/Unit 6: Fossils	Duration: 15-20 Days (May)
<p>Unit Summary: Students will be exposed to fossils. This unit has two lessons attached to it and should be completed in about 15-20 Days. They will be able to explore fossils and discover what fossils can tell us about animals that lived long ago.</p>	
<p>Standards:</p> <p>3-LS4-1 - Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.</p>	
<p>NJ Student Learning Standards</p>	
<p>Interdisciplinary Skills</p>	
<p>Primary Interdisciplinary Connections: Infused within the unit are connections to the NJSLs for Mathematics, Language Arts</p>	
<p>RI.3.1. Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.</p> <p>SL.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.</p> <p>SL.3.6. Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.</p>	
<p>Career Readiness, Life Literacies, and Key Skills</p>	
<p>9.1.5.CR.1: Compare various ways to give back and relate them to your strengths, interests, and other personal factors.</p> <p>9.1.5.EG.2: Describe how tax monies are spent</p> <p>9.1.5.RMI.1: Identify risks that individuals and households face.</p> <p>9.1.5.RMI.2: Justify reasons to have insurance.</p> <p>9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.</p> <p>9.2.5.CAP.2: Identify how you might like to earn an income.</p> <p>9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.</p> <p>9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification.</p> <p>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).</p> <p>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).</p>	

Computer Science and Design Thinking

- 8.1.5.CS.1: Model how computing devices connect to other components to form a system.
- 8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.
- 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.4: Organize and present climate change data visually to highlight relationships or support a claim.
- 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.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.

Essential Understandings

Essential Questions

Students will understand that...

- Fossils are the remains or traces of an organism that lived long ago
- Fossils tell us about the past

- What is a fossil?
- What do fossils tell us about the past?

Evidence of Student Learning

Performance Tasks: *Activities to provide evidence for student learning of content and cognitive skills.*

- Students will create a diorama to model an ancient environment

Other Assessments

Formative Assessments

Teacher Observations
Interactive Notebook
Performance Assessments

Summative Assessments

- Tests
- Quizzes
- Summary

	<p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Beginning of the Year Benchmark ● Mid-Year Benchmark ● End of the Year Benchmark <p>Alternative Assessments</p> <ul style="list-style-type: none"> ● Participation Rubric ● Teacher Observations ● Group Work/Class Work
<p>Vocabulary</p> <p>adaptation/camouflage/environment/habitat/mimicry/population</p>	
<p>Knowledge and Skills</p>	
<p>Content</p>	<p>Skills</p>
<p><i>Students will know....</i></p> <ul style="list-style-type: none"> ● What fossils are ● That fossils tell us about the past 	<p><i>Students will be able to ...</i></p> <ul style="list-style-type: none"> ● Explore fossils ● Discover what fossils can tell us about animals that lived long ago
<p>Instructional Plan</p>	
<p style="text-align: center;">Suggested Activities</p> <ul style="list-style-type: none"> ● Shoe tracing to resemble a fossil ● Walking pattern models ● What animals from the past look like animals from today ● Analyze fossil patterns ● Explore the ways we rely of fossil fuels 	<p style="text-align: center;">Resources</p> <ul style="list-style-type: none"> - www.brainpop.com - www.newsela.com (leveled texts) - https://www.teachengineering.org/ - www.readworks.org (leveled texts) - http://www.sps186.org/resources/sciencek5/?p=134

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- <https://betterlesson.com/lesson/632399/animal-groups-benefits-and-disadvantages>
- <http://www.livebinders.com/play/play?id=1179151#anchor>
- <http://artsnowlearning.org/>
- <http://ngss-k-5-ausd.weebly.com/>

Print Material

- HMH Dimensions Textbook/Workbook
- Studies Weekly Science
- *Gutsy Girls Go For Science: Paleontologists* by Karen Bush Gibson

Websites

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- www.newsela.com (leveled texts)
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- www.readworks.org (leveled texts)
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Modifications

Special Education Students / 504 (*These are just suggested ideas to modify instruction. All modifications and accommodations should be specific to each student's IEP or 504 plan*) reduce/revise assignments & assignments as per IEP; provide individual and small group assistance; notes, and study guides; provide background knowledge.

English Language learners: *use consistent, simplified language; provide bilingual when appropriate; provide cooperative learning opportunities, use modeling, visual aids, and manipulatives.*

Students at Risk of Failure: *Provide less distracting seating if possible, frequent check-in by teacher, study guides, notes, etc.*

Gifted Students: *provide additional enrichment activity involving demonstrating knowledge, deeper research to answer a higher level questions, or complimentary assignment.*

Suggested Options for Differentiation

English Language Learners

- Provide pictures and well labeled models
- Speak slowly and gesture when necessary
- Extended time on assessments
- Small group for assessment

Gifted and Talented

- Differentiate Assignments
- Differentiate Texts
- Complete Different Homework than peers

Basic Skills/Economically Disadvantaged/Students at Risk

- Graphic organizers
- Build background knowledge
- Increased parent communication
- Strategic grouping
- Pre-teach concepts
- Small group for assessments

Special Education

- Follow all IEP modifications
- Provide manipulatives or the opportunity to draw solution strategies
- Pre-Teach concepts
- Extended Time
- Strategic grouping

- Small group for assessments
- Check in's during experiments to help refocus

504

- Provide differentiated instruction as needed
- Follow all IEP modifications
- Review concepts and important vocabulary from previous lessons before teaching new information
- Check for student understanding often with formal, informal, verbal, and nonverbal measures
- Progress Monitoring
- Modified textbooks or audio-video materials

Science Unit 4: Weather and Climate

Duration: 20 days

This unit will incorporate the following Core Ideas:

Career Readiness, Life Literacies, and Key Skills

You can give back in areas that matter to you.

Individuals can choose to accept inevitable risk or take steps to protect themselves by avoiding or reducing risk.

Taxes are collected on a variety of goods and services at the local, state, and federal levels.

An individual's passions, aptitude and skills can affect his/her employment and earning potential.

Collaboration with individuals with diverse perspectives can result in new ways of thinking and/or innovative solutions.

Curiosity and a willingness to try new ideas (intellectual risk-taking) contributes to the development of creativity and innovation skills.

– Computer Science and Design Thinking

Computing devices may be connected to other devices to form a system as a way to extend their capabilities

Shared features allow for common troubleshooting strategies that can be effective for many systems.

The development and modification of computing technology is driven by individual's needs and wants and can affect individuals differently.

Data can be organized, displayed, and presented to highlight relationships.

Digital tools allow for remote collaboration and rapid sharing of ideas unrestricted by geographic location or time.

Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.

Often, several design solutions exist, each better in some way than the others.

Standards:

3-ESS2-1 - Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

3-ESS2-2 - Obtain and combine information to describe climates in different regions of the world.

3-ESS3.1 Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.

3-5- ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost

3-5- ETS1-2 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

3-5- ETS1-3 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.

Interdisciplinary Skills

Primary Interdisciplinary Connections: Infused within the unit are connections to the NJSLs for Mathematics, Language Arts

RI.3.1. Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

SL.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.3.6. Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.

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. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.

Career Readiness, Life Literacies, and Key Skills

9.1.5.CR.1: Compare various ways to give back and relate them to your strengths, interests, and other personal factors.

9.1.5.EG.2: Describe how tax monies are spent

9.1.5.RMI.1: Identify risks that individuals and households face.

9.1.5.RMI.2: Justify reasons to have insurance.

9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.

9.2.5.CAP.2: Identify how you might like to earn an income.

9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.

9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification.

9.4.5.CI.1: Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate change issue and deliberate about possible solutions (e.g., W.4.6, 3.MD.B.3,7.1.NM.IPERS.6).

9.4.5.CI.2: Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue (e.g., 6.3.5.CivicsPD.3, W.5.7).

9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one’s thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a).

9.4.5.CI.4: Research the development process of a product and identify the role of failure as a part of the creative process (e.g., W.4.7, 8.2.5.ED.6)

Computer Science and Design Thinking

8.1.5.CS.1: Model how computing devices connect to other components to form a system.

8.1.5.CS.3: Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.

8.1.5.IC.1: Identify computing technologies that have impacted how individuals live and work and describe the factors that influenced the changes

8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.

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.4: Organize and present climate change data visually to highlight relationships or support a claim.

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.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.

Essential Understandings

Essential Questions

<p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> ● Climate describes patterns of typical weather conditions over different scales and variations. ● Data in tables and graphical displays to describe typical weather conditions. ● Weather patterns can be analyzed. ● Solutions can be designed to reduce the impact of a weather-related hazard. 	<ul style="list-style-type: none"> ● How do seasonal changes affect weather conditions? ● How can I use data in tables and graphical displays to describe typical weather conditions? ● How does the global location of a region determine the climate? ● How do engineers design a solution to reduce the impact of a weather-related hazard?
<p>Evidence of Student Learning</p>	
<p>Suggested Performance Tasks: <i>Activities to provide evidence for student learning of content and cognitive skills.</i></p> <ul style="list-style-type: none"> ● Students will research and make a safety plan to prepare for severe weather in their area ● Students will create a weather journal recording the data of the weather and climate outside their classroom door and using weather data websites. They will then complete a weather observation data graph chart. 	<p style="text-align: center;">Other Assessments</p> <p>Formative Assessments</p> <ul style="list-style-type: none"> ● Teacher Observations ● Response Cards ● Graphic Organizers & Guided Note Taking ● Cooperative Group Learning <p>Summative Assessments</p> <ul style="list-style-type: none"> ● RST- Research Simulation Task ● Tests ● Quizzes ● Labs and engineering based projects ● Benchmarks <p>Benchmark Assessment</p>

	<ul style="list-style-type: none"> ● Beginning of the Year District Benchmark ● Mid-Year District Benchmark ● End of the Year District Benchmark <p>Alternative Assessments</p> <ul style="list-style-type: none"> ● Teacher Observations ● Participation Rubric ● Group Work/Class ● Guided Observations ● Questions Starters
<p>Vocabulary</p> <p>weather, climate, resources, precipitation, thermometer, anemometer, barometer, wind vane, sleet</p>	
<p>Knowledge and Skills</p>	
<p>Content</p>	<p>Skills</p>
<p><i>Students will understand ...</i></p> <ul style="list-style-type: none"> ● How weather is measured ● How weather is predicted ● How severe weather can impact our planet ● 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. ● Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years. ● Weather changes from day to day and over the seasons can be measured and documented. ● A variety of natural hazards result from natural 	<p><i>Students will be able to ...</i></p> <ul style="list-style-type: none"> ● Explore how weather is predicted and measured ● Learn about the difference between weather and climate ● Identify the impact of severe weather on society and nature. ● Record weather patterns and predict what weather that particular area might see in the future. ● Research weather and climate in regions around the world and locate reasons for the region's weather conditions. ● Identify and describe weather related hazards. ● Find ways for humans to reduce the impact of

processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts.

Students will...

- Develop and refine models;
- Generate, discuss and analyze data;
- Construct spoken and written scientific explanations;
- Engage in evidence-based argumentation; and
- Reflect on their own understanding.

these weather related natural processes.

- Use <http://www.weather.com/> and/or <http://www.almanac.com/weather/history/NJ> in order to create data tables and graphical displays pertaining to weather conditions over time.
- Visit <http://easyscienceforkids.com/all-aboutclimate-around-the-world/> and <http://www.ucmp.berkeley.edu/glossary/gloss5/biome/> to learn more about the world's biomes in order to create an interactive presentation.
- Design a solution to reduce the impact of a weather-related hazard. Research the cost and work with a set budget.

Instructional Plan

Suggested Activities

- Create pictures of different wind patterns.
- Color your location based on how much rain it receives.
- Analyze weather data.
- Create a bar graph depicting average precipitation in your town
- Research weather conditions from several locations in the United States.
- Plan a way to control the impact of flooding.
- Collaborate a new location for blue penguins to go.
- Students will record the humidity for your location from www.weather.gov and whether the pinecone is open or closed each day. Represent your data in a table. After two weeks graph your data. What happens to the pinecone when the humidity is high? What happens to the pinecone when the humidity is low? Describe any

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weather patterns over the two weeks. Using the data describe the typical weather conditions expected during this time of the year.http://www.hookedonscience.org/files/2015_Experiment_Archive_PINECONE_HYGROMETER.pdf

- <http://ngss-k-5-ausd.weebly.com>
- <https://www.scienceaz.com/main/Download/resource/saz/id/326/unitId/13/format/single>This guide provides an overview of unit concepts, a spark activity, vocabulary list, Internet links, and extension activities. It describes unit resources and addresses misconceptions. Students will understand why it is clear one day and cloudy another day or why is it snowing in one location and sunny in another location.

Print Materials

- HMH Dimensions Textbook/Workbook
- Studies Weekly Science
- Snowflake Bentley by Jacqueline Briggs Martin
- Hurricanes by Gail Gibbons
- Come On, Rain! by Karen Hesse
- Albert by Donna Jo Napoli

Websites

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