

**Green Township School District**  
**Grade 3 Science Curriculum Unit 1**  
**Revised July 2017**

**Unit 1: Forces and Interactions**

<b>Lesson 1.1</b>	<p><b><i>NJ Student Learning Standards:</i></b></p> <ul style="list-style-type: none"> <li>● <b>3-PS2-2.</b> Make observations and/or measurements of an object’s motion to provide evidence that a pattern can be used to predict future motion. [Clarification Statement: Examples of motion with a predictable pattern could include a child swinging in a swing, a ball rolling back and forth in a bowl, and two children on a see-saw.] [Assessment Boundary: Assessment does not include technical terms such as period and frequency.]</li> </ul>	<p><b>Concept(s):</b></p> <ul style="list-style-type: none"> <li>● Linear measurement</li> </ul> <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Compare measurements obtained by using a non-standard and standard units</li> <li>● Explain why standard units are more reliable than non-standard units</li> <li>● Define Measurement</li> </ul>
<b>Lesson 1.2</b>	<p><b><i>NJ Student Learning Standards:</i></b></p> <ul style="list-style-type: none"> <li>● <b>3-PS2-2.</b> Make observations and/or measurements of an object’s motion to provide evidence that a pattern can be used to predict future motion. [Clarification Statement: Examples of motion with a predictable pattern could include a child swinging in a swing, a ball rolling back and forth in a bowl, and two children on a see-saw.] [Assessment Boundary: Assessment does not include technical terms such as period and frequency.]</li> </ul>	<p><b>Concept(s):</b></p> <ul style="list-style-type: none"> <li>● Measuring distance and motion</li> </ul> <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Define and measure distance</li> <li>● Explain the importance of initial and ending position when measuring distance traveled</li> <li>● Explain why people need a standard unit for measuring time</li> <li>● Use time to measure how long it takes an object to move</li> <li>● Demonstrate an understanding that the faster something moves, the less time it takes to cover distance</li> <li>● Use patterns to predict future motion</li> </ul>

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<b>Lesson 1.3</b>	<p><b><i>NJ Student Learning Standards:</i></b></p> <ul style="list-style-type: none"> <li>• <b>3-PS2-2.</b> Make observations and/or measurements of an object’s motion to provide evidence that a pattern can be used to predict future motion. [Clarification Statement: Examples of motion with a predictable pattern could include a child swinging in a swing, a ball rolling back and forth in a bowl, and two children on a see-saw.] [Assessment Boundary: Assessment does not include technical terms such as period and frequency.]</li> </ul>	<p><b>Concept(s):</b></p> <ul style="list-style-type: none"> <li>• Forces and Motion</li> </ul> <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Explain that a push or a pull causes an object at rest to move</li> <li>• Explain that a force can cause a moving object to stop or change direction</li> <li>• Explain that it requires more force to move a heavier object than a lighter one</li> <li>• Use arrows to represent the direction and effort of a force</li> </ul>
<b>Lesson 1.4</b>	<p><b><i>NJ Student Learning Standards:</i></b></p> <ul style="list-style-type: none"> <li>• <b>3-PS2-1.</b> Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. [Clarification Statement: Examples could include an unbalanced force on one side of a ball can make it start moving; and, balanced forces pushing on a box from both sides will not produce any motion at all.] [Assessment Boundary: Assessment is limited to one variable at a time: number, size, or direction of forces. Assessment does not include quantitative force size, only qualitative and relative. Assessment is limited to gravity being addressed as a force that pulls objects down.]</li> </ul>	<p><b>Concept(s):</b></p> <ul style="list-style-type: none"> <li>• Balanced and unbalanced forces</li> </ul> <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Explain that if an object is at rest, two equal forces in opposite directions will cause the object to stay at rest</li> <li>• Explain that when two forces are applied to an object, motion results when the forces are not equal, or not applied in opposite directions</li> </ul>
<b>Lesson 1.5</b>	<p><b><i>NJ Student Learning Standards:</i></b></p> <ul style="list-style-type: none"> <li>• <b>3-PS2-3.</b> Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. [Clarification Statement: Examples of an electric force could include the force on hair from an electrically charged balloon and the electrical forces between a charged rod and pieces of paper; examples of a magnetic force could include the force between two permanent magnets, the force between</li> </ul>	<p><b>Concept(s):</b></p> <ul style="list-style-type: none"> <li>• Contact and non-contact forces</li> </ul> <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Demonstrate that magnetic force is a non-contact force</li> <li>• Describe gravity as an invisible, non-contact force that pulls objects closer to the earth</li> <li>• Classify various forces as contact or non-contact</li> </ul>

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	<p>an electromagnet and steel paperclips, and the force exerted by one magnet versus the force exerted by two magnets. Examples of cause and effect relationships could include how the distance between objects affects strength of the force and how the orientation of magnets affects the direction of the magnetic force.] [Assessment Boundary: Assessment is limited to forces produced by objects that can be manipulated by students, and electrical interactions are limited to static electricity.]</p>	
<p><b>Lesson 1.6</b></p>	<p><b><i>NJ Student Learning Standards:</i></b></p> <ul style="list-style-type: none"> <li>● <b>3-PS2-3.</b> Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. [Clarification Statement: Examples of an electric force could include the force on hair from an electrically charged balloon and the electrical forces between a charged rod and pieces of paper; examples of a magnetic force could include the force between two permanent magnets, the force between an electromagnet and steel paperclips, and the force exerted by one magnet versus the force exerted by two magnets. Examples of cause and effect relationships could include how the distance between objects affects strength of the force and how the orientation of magnets affects the direction of the magnetic force.] [Assessment Boundary: Assessment is limited to forces produced by objects that can be manipulated by students, and electrical interactions are limited to static electricity.]</li> <li>● <b>3-PS2-4.</b> Define a simple design problem that can be solved by applying scientific ideas about magnets.* [Clarification Statement: Examples of problems could include constructing a latch to keep a door shut and creating a device to keep two moving objects from touching each other.]</li> <li>● <b>3-5-ETS1-1.</b> 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.</li> </ul>	<p><b>Concept(s):</b></p> <ul style="list-style-type: none"> <li>● Magnets</li> </ul> <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Explain what kinds of materials magnets attract</li> <li>● Demonstrate that like poles of two magnets repel each other</li> <li>● Demonstrate that opposite poles of two magnets attract each other</li> <li>● Demonstrate and explain that magnetic force can pass through some non-magnetic materials</li> <li>● Construct a toy train that incorporates magnetic levitation</li> </ul>

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	Generate and compare multiple possible s	
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***Other Interdisciplinary Connections***

[NGSS Appendix for Alignment](#)

**NJ Math Standards:**

**3.MD.A.2** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). \* Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. \*Third grade standards exclude compound units such as cm<sup>3</sup> and finding the geometric volume of a container.

**3.MD.B.3 Represent and interpret data:** 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.

**3.MD.B.4.** Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters

**English-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.

**RI.3.2.** Determine the main idea of a text; recount the key details and explain how they support the main idea.

**RI.3.3.** Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

**RI.3.4.** Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.

**RI.3.5.** Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently

**RI.3.7.** Use information gained from text features (e.g., illustrations, maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).

**RI.3.8.** Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence)

**W.3.2.** Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

A. Introduce a topic and group related information together; include text features (e.g.: illustrations, diagrams, captions) when useful to support comprehension.

B. Develop the topic with facts, definitions, and details.

C. Use linking words and phrases (e.g., also, another, and, more, but) to connect ideas within categories of information.

D. Provide a conclusion.

**W.3.10.** Write routinely over extended time frames (time for research, reflection, metacognition/self-correction and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

**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.

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	<p>A. Explicitly draw on previously read text or material and other information known about the topic to explore ideas under discussion.</p> <p>B. Follow agreed-upon norms for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).</p> <p>C. Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others. D. Explain their own ideas and understanding in light of the discussion.</p> <p><b>SL.3.3.</b> Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.</p> <p><b>SL.3.4.</b> Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.</p> <p><b>SL.3.5.</b> Use multimedia to demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details.</p> <p><b>SL.3.6.</b> Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.</p>
<p><b><u>21st Century Skills/ Career Ready Practices:</u></b></p>	<p><b>CRP1. Act as a responsible and contributing citizen and employee.</b></p> <p><b>CRP2. Apply appropriate academic and technical skills.</b></p> <p><b>CRP3. Attend to personal health and financial well-being.</b></p> <p><b>CRP4. Communicate clearly and effectively and with reason.</b></p> <p><b>CRP5. Consider the environmental, social and economic impacts of decisions.</b></p> <p><b>CRP6. Demonstrate creativity and innovation.</b></p> <p><b>CRP7. Employ valid and reliable research strategies.</b></p> <p><b>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</b></p> <p><b>CRP9. Model integrity, ethical leadership and effective management.</b></p> <p><b>CRP10. Plan education and career paths aligned to personal goals.</b></p> <p><b>CRP11. Use technology to enhance productivity.</b></p> <p><b>CRP12. Work productively in teams while using cultural global competence.</b></p>
<p><b><u>2014 NJ Technology Standards:</u></b></p>	<p><b>8.1 Educational Technology</b> (<a href="#">Word</a>   <a href="#">PDF</a>)</p> <p>All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.</p> <p><b>8.2 Technology Education, Engineering, Design and Computational Thinking - Programming</b> (<a href="#">Word</a>   <a href="#">PDF</a>)</p> <p>All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.</p> <p>Please see relevant projects for technology standards <a href="#">8.1</a> and <a href="#">8.2</a>:</p>
<p><b><i>District/School Primary and Supplementary Resources</i></b></p>	

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<p><b><u>Primary Resource:</u></b></p> <p><b><i>Knowing Science: Third Grade</i></b>  <a href="http://www.knowingscience.com">www.knowingscience.com</a>          2016 Knowing Science, LLC</p>	<p><a href="#">BrainPOP</a>  <a href="#">Pebble Go</a></p>
<p><b><i>Materials</i></b></p>	
<p>Materials for each session activity and lesson are listed in the Knowing Science Teacher’s Manual.</p>	
<p><b>School/ Formative Assessment Plan</b></p>	<p><b>School/District Summative Assessment Plan</b></p>
<ul style="list-style-type: none"> <li>• Teacher observation of students engaged in group and independent activities.</li> <li>• Individual and small group conferences/interviews to assess understanding with rubric</li> <li>• Self-assessment by students with guidance from teacher.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher created assessments and projects</li> <li>• Teacher/District created benchmark assessments</li> </ul>

<p><b><u>Differentiation/Accommodations/Modifications</u></b></p>
<p>Gifted and Talented</p>
<p>(content, process, product and learning environment)</p> <p><b>Extension Activities</b></p> <ul style="list-style-type: none"> <li>• Conduct research and provide presentation of various topics.</li> <li>• Design surveys to generate and analyze data to be used in discussion.</li> <li>• Debate topics of interest / cultural importance.</li> <li>• Authentic listening and reading sources that provide data and support for speaking and writing prompts.</li> <li>• Exploration of art and/or artists to understand society and history.</li> <li>• Implement RAFT Activities as they pertain to the types / modes of communication (role, audience, format, topic).</li> </ul> <p><b>Anchor Activities</b></p> <ul style="list-style-type: none"> <li>• Use of Higher Level Questioning Techniques</li> </ul>

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- Provide assessments at a higher level of thinking

English Language Learners

**Modifications for Classroom**

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice.
- Model skills/techniques that need to be mastered.
- Extended time to complete class work
- Visual dictionaries to help build vocabulary
- Provide copy of classnotes
- Pair with a peer for assistance during class

**Modifications for Homework/Assignments**

- Modified Assignments
- Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary)
- Extended time for assignment completion as needed
- Highlight key vocabulary
- Use graphic organizers

Students with Disabilities

**(appropriate accommodations, instructional adaptations, and/or modifications as determined by the IEP or 504 team)**

**Modifications for Classroom**

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Extended time to complete class work
- Provide copy of classnotes
- Preferential seating to be mutually determined by the student and teacher
- Student may request to use a computer to complete assignments.
- Establish expectations for correct spelling on assignments.
- Extra textbooks for home.

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- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting
- Provide oral reminders and check student work during independent work time
- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

**Modifications for Homework and Assignments**

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.
- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

**Modifications for Assessments**

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.

Students at Risk of School Failure

**Modifications for Classroom**

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Extended time to complete class work
- Provide copy of classnotes
- Preferential seating to be mutually determined by the student and teacher
- Student may request to use a computer to complete assignments.
- Establish expectations for correct spelling on assignments.
- Extra textbooks for home.
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting
- Provide oral reminders and check student work during independent work time



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- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

**Modifications for Homework and Assignments**

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.
- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

**Modifications for Assessments**

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.

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**Unit 2: Life Cycles and Traits**

<b>Lesson 2.1</b>	<p><b><i>NJ Student Learning Standards:</i></b></p> <ul style="list-style-type: none"> <li>● <b>3-LS1-1.</b> Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. [Clarification Statement: Changes organisms go through during their life form a pattern.] [Assessment Boundary: Assessment of plant life cycles is limited to those of flowering plants. Assessment does not include details of human reproduction.]</li> </ul>	<p><b>Concept(s):</b></p> <ul style="list-style-type: none"> <li>● Foundations of life cycles</li> </ul> <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Identify and sequence life cycles stages common to flowering plants and trees</li> <li>● Identify and sequence general animal life cycle stages</li> <li>● Differentiate among direct development and complete and incomplete metamorphosis</li> <li>● Comprehend and respond to nonfiction reading texts</li> </ul>
<b>Lesson 2.2</b>	<p><b><i>NJ Student Learning Standards:</i></b></p> <ul style="list-style-type: none"> <li>● <b>3-LS1-1.</b> Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. [Clarification Statement: Changes organisms go through during their life form a pattern.] [Assessment Boundary: Assessment of plant life cycles is limited to those of flowering plants. Assessment does not include details of human reproduction.]</li> </ul>	<p><b>Concept(s):</b></p> <ul style="list-style-type: none"> <li>● Life cycles of common plants</li> </ul> <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Identify, describe, and sequence life cycle stages common to flowering plants</li> <li>● Conduct investigations to compare life cycles of familiar plants</li> <li>● Make and record accurate observations regarding growth of familiar plants</li> <li>● Comprehend and respond to nonfiction reading texts</li> </ul>

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<b>Lesson 2.3</b>	<p><b><i>NJ Student Learning Standards:</i></b></p> <ul style="list-style-type: none"> <li>● <b>3-LS1-1.</b> Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. [Clarification Statement: Changes organisms go through during their life form a pattern.] [Assessment Boundary: Assessment of plant life cycles is limited to those of flowering plants. Assessment does not include details of human reproduction.]</li> </ul>	<p><b>Concept(s):</b></p> <ul style="list-style-type: none"> <li>● Characteristics of the frog life cycle</li> </ul> <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Identify, describe, and sequence life cycle stages common to most frogs</li> <li>● Conduct investigations which relate to frog life cycle stages</li> <li>● Make and record accurate observations regarding growth of tadpoles and froglets</li> <li>● Recognize and understand that conducting science investigations involving animals require safe and ethical practices</li> <li>● Comprehend and respond to nonfiction reading texts</li> </ul>
<b>Lesson 2.4</b>	<p><b><i>NJ Student Learning Standards:</i></b></p> <ul style="list-style-type: none"> <li>● <b>3-LS3-1.</b> 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. [Clarification Statement: Patterns are the similarities and differences in traits shared between offspring and their parents, or among siblings. Emphasis is on organisms other than humans.] [Assessment Boundary: Assessment does not include genetic mechanisms of inheritance and prediction of traits. Assessment is limited to non-human examples.]</li> <li>● <b>3-LS3-2.</b> Use evidence to support the explanation that traits can be influenced by the environment. [Clarification Statement: Examples of the environment affecting a trait could include normally tall plants grown with insufficient water are stunted; and, a pet dog that is given too much food and little exercise may become overweight.]</li> <li>● <b>3-LS4-1.</b> Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago. [Clarification Statement: Examples of data could include type, size, and distributions of fossil organisms. Examples of fossils and</li> </ul>	<p><b>Concept(s):</b></p> <ul style="list-style-type: none"> <li>● Plants and animals have traits that can either be inherited or a product of the organism’s environment</li> </ul> <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Differentiate among inherited, learned, and acquired traits</li> <li>● Understand that physical and behavioral traits are passed from parent to offspring</li> <li>● Construct a structured inquiry survey about inherited human traits</li> <li>● Explore how nature has influenced human learning and technology</li> <li>● Explain the role of trait variation in the survival of plants and animals</li> <li>● Comprehend and respond to nonfiction reading texts</li> </ul>

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	<p>environments could include marine fossils found on dry land, tropical plant fossils found in Arctic areas, and fossils of extinct organisms.] [Assessment Boundary: Assessment does not include identification of specific fossils or present plants and animals. Assessment is limited to major fossil types and relative ages.]</p> <ul style="list-style-type: none"><li>● <b>3-LS4-2.</b> Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. [Clarification Statement: Examples of cause and effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten by predators; and, animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.]</li><li>● <b>3-LS4-3.</b> 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. [Clarification Statement: Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.]</li><li>● <b>3-LS4-4.</b> 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.* [Clarification Statement: Examples of environmental changes could include changes in land characteristics, water distribution, temperature, food, and other organisms.] [Assessment Boundary: Assessment is limited to a single environmental change. Assessment does not include the greenhouse effect or climate change.]</li></ul>	
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<b>Lesson 2.5</b>	<p><b><i>NJ Student Learning Standards:</i></b></p> <ul style="list-style-type: none"> <li>● <b>3-LS4-2.</b> Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. [Clarification Statement: Examples of cause and effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten by predators; and, animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.]</li> </ul>	<p><b>Concept(s):</b></p> <ul style="list-style-type: none"> <li>● Animal communities and survival</li> </ul> <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Differentiate between types of animal groups and the purpose of each</li> <li>● Associate specific animals with each type of group</li> <li>● Explain how different senses are used for communication between group members</li> <li>● Comprehend and respond to nonfiction reading texts</li> </ul>
<b>Lesson 2.6</b>	<p><b><i>NJ Student Learning Standards:</i></b></p> <ul style="list-style-type: none"> <li>● <b>3-LS4-1.</b> Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago. [Clarification Statement: Examples of data could include type, size, and distributions of fossil organisms. Examples of fossils and environments could include marine fossils found on dry land, tropical plant fossils found in Arctic areas, and fossils of extinct organisms.] [Assessment Boundary: Assessment does not include identification of specific fossils or present plants and animals. Assessment is limited to major fossil types and relative ages.]</li> </ul>	<p><b>Concept(s):</b></p> <ul style="list-style-type: none"> <li>● Fossils and prehistoric organisms</li> </ul> <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Explain what a fossil is</li> <li>● Describe how fossils are formed</li> <li>● Develop an argument from evidence that Earth’s environments/organisms have changed over millions of years</li> </ul>

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[NGSS Appendix for Alignment](#)

**NJ Math Standards:**

**3.MD.A.2** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). \* Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. \*Third grade standards exclude compound units such as cm<sup>3</sup> and finding the geometric volume of a container.

**3.MD.B.3 Represent and interpret data:** 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.

**3.MD.B.4.** Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters

**English-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.

**RI.3.2.** Determine the main idea of a text; recount the key details and explain how they support the main idea.

**RI.3.3.** Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

**RI.3.4.** Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.

**RI.3.5.** Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently

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**W.3.2.** Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

A. Introduce a topic and group related information together; include text features (e.g.: illustrations, diagrams, captions) when useful to support comprehension.

B. Develop the topic with facts, definitions, and details.

C. Use linking words and phrases (e.g., also, another, and, more, but) to connect ideas within categories of information.

D. Provide a conclusion.

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**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.

A. Explicitly draw on previously read text or material and other information known about the topic to explore ideas under discussion.

B. Follow agreed-upon norms for discussions (e.g., gaining the floor in respectful ways, listening to others with care,

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	<p>speaking one at a time about the topics and texts under discussion).  C. Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others. D. Explain their own ideas and understanding in light of the discussion.  <b>SL.3.3.</b> Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.  <b>SL.3.4.</b> Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.  <b>SL.3.5.</b> Use multimedia to demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details.  <b>SL.3.6.</b> Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.</p>
<p><b><u>21st Century Skills/ Career Ready Practices:</u></b></p>	<p><b>CRP1. Act as a responsible and contributing citizen and employee.</b>  <b>CRP2. Apply appropriate academic and technical skills.</b>  <b>CRP3. Attend to personal health and financial well-being.</b>  <b>CRP4. Communicate clearly and effectively and with reason.</b>  <b>CRP5. Consider the environmental, social and economic impacts of decisions.</b>  <b>CRP6. Demonstrate creativity and innovation.</b>  <b>CRP7. Employ valid and reliable research strategies.</b>  <b>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</b>  <b>CRP9. Model integrity, ethical leadership and effective management.</b>  <b>CRP10. Plan education and career paths aligned to personal goals.</b>  <b>CRP11. Use technology to enhance productivity.</b>  <b>CRP12. Work productively in teams while using cultural global competence.</b></p>
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<p><b><u>Primary Resource:</u></b></p> <p><b><i>Knowing Science: Third Grade</i></b></p>	<p><a href="#">BrainPOP</a>  <a href="#">Pebble Go</a></p>

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<b>Materials</b>	
Materials for each session activity and lesson are listed in the Knowing Science Teacher’s Manual.	
<b>School/ Formative Assessment Plan</b>	<b>School/District Summative Assessment Plan</b>
<ul style="list-style-type: none"> <li>• Teacher observation of students engaged in group and independent activities.</li> <li>• Individual and small group conferences/interviews to assess understanding with rubric</li> <li>• Self-assessment by students with guidance from teacher.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher created assessments and projects</li> <li>• Teacher/District created benchmark assessments</li> </ul>

<b><u>Differentiation/Accommodations/Modifications</u></b>
Gifted and Talented
<p>(content, process, product and learning environment)</p> <p><b>Extension Activities</b></p> <ul style="list-style-type: none"> <li>• Conduct research and provide presentation of various topics.</li> <li>• Design surveys to generate and analyze data to be used in discussion.</li> <li>• Debate topics of interest / cultural importance.</li> <li>• Authentic listening and reading sources that provide data and support for speaking and writing prompts.</li> <li>• Exploration of art and/or artists to understand society and history.</li> <li>• Implement RAFT Activities as they pertain to the types / modes of communication (role, audience, format, topic).</li> </ul> <p><b>Anchor Activities</b></p> <ul style="list-style-type: none"> <li>• Use of Higher Level Questioning Techniques</li> <li>• Provide assessments at a higher level of thinking</li> </ul>
English Language Learners



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**Modifications for Classroom**

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice.
- Model skills/techniques that need to be mastered.
- Extended time to complete class work
- Visual dictionaries to help build vocabulary
- Provide copy of classnotes
- Pair with a peer for assistance during class

**Modifications for Homework/Assignments**

- Modified Assignments
- Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary)
- Extended time for assignment completion as needed
- Highlight key vocabulary
- Use graphic organizers

Students with Disabilities

**(appropriate accommodations, instructional adaptations, and/or modifications as determined by the IEP or 504 team)**

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- Student may request to use a computer to complete assignments.
- Establish expectations for correct spelling on assignments.
- Extra textbooks for home.
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting
- Provide oral reminders and check student work during independent work time
- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests

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- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

**Modifications for Homework and Assignments**

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.
- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

**Modifications for Assessments**

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.

Students at Risk of School Failure

**Modifications for Classroom**

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<u><i>Unit 3: Weather</i></u>		
<b>Lesson 3.1</b>	<p><b><i>NJ Student Learning Science Standards:</i></b></p> <ul style="list-style-type: none"> <li>• <b>3-ESS2-1.</b> Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. [Clarification Statement: Examples of data could include average temperature, precipitation, a</li> </ul>	<p><b>Concept(s):</b></p> <ul style="list-style-type: none"> <li>• Unit introduction ‘What is weather?’</li> </ul> <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Identify and describe components of weather (temperature, precipitation, air pressure, wind, and humidity)</li> <li>• Make observations and collect data on local weather over a period of time</li> <li>• Build working models of weather instruments</li> <li>• Describe the relationship between the water cycle and weather</li> <li>• Math cloud formations with weather conditions</li> <li>• Describe the interdependent components of weather in forecasting</li> <li>• Comprehend and respond to nonfiction reading texts</li> </ul>
<b>Lesson 3.2</b>	<p><b><i>NJ Student Learning Science Standards:</i></b></p> <ul style="list-style-type: none"> <li>• <b>3-ESS2-2.</b> Obtain and combine information to describe climates in different regions of the world.</li> </ul>	<p><b>Concept(s):</b></p> <ul style="list-style-type: none"> <li>• Climates and Biomes</li> </ul> <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Identify and describe general characteristics of polar, tropical, and temperate climate zones</li> <li>• Explain the connection between Earth’s orbit and seasons in temperate zones</li> <li>• Understand the concept of biome and make comparisons between biomes in each climate zone</li> <li>• Comprehend and respond to nonfiction reading texts</li> </ul>

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<b>Lesson 3.3</b>	<p><b><i>NJ Student Learning Science Standards:</i></b></p> <ul style="list-style-type: none"> <li>● <b>3-ESS3-1.</b> Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.* [Clarification Statement: Examples of design solutions to weather-related hazards could include barriers to prevent flooding, wind resistant roofs, and lightning rods.]</li> </ul>	<p><b>Concept(s):</b></p> <ul style="list-style-type: none"> <li>● Types of extreme weather</li> </ul> <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Identify and describe general characteristics of tornadoes, hurricanes, and winter storms</li> <li>● Understand the damage that each type of extreme weather event may cause</li> <li>● Comprehend and respond to nonfiction reading texts</li> </ul>
<b>Lesson 3.4</b>	<p><b><i>NJ Student Learning Science Standards:</i></b></p> <ul style="list-style-type: none"> <li>● <b>3-ESS3-1.</b> Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.* [Clarification Statement: Examples of design solutions to weather-related hazards could include barriers to prevent flooding, wind resistant roofs, and lightning rods.]</li> <li>● <b>3-5-ETS1-1.</b> Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.</li> <li>● <b>3-5-ETS1-2.</b> 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.</li> <li>● <b>3-5-ETS1-3.</b> 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.</li> </ul>	<p><b>Concept(s):</b></p> <ul style="list-style-type: none"> <li>● Engineering challenge: hurricane house</li> </ul> <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>● Understand the basic engineering design process</li> <li>● Identify hazards to property associated with extreme weather conditions</li> <li>● Learn the basics of house construction</li> <li>● Match stormproof technology to appropriate focus areas of the house</li> <li>● Design, build, and test a model of a house capable of withstanding extreme weather</li> <li>● Work cooperatively in small groups to accomplish the task</li> <li>● Comprehend and respond to nonfiction reading texts</li> </ul>

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*Other Interdisciplinary Connections*

[NGSS Appendix for Alignment](#)

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**Anchor Activities**

- Use of Higher Level Questioning Techniques
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English Language Learners

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