

<p><b>Unit: From Molecules to Organisms – Structures and Processes</b></p>	<p><b>Grade Level: 3</b></p>	<p><b>Time Frame: Quarter 1(a)</b></p>
<p><b>Standards:</b>  <b>Science:</b>  <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.</p> <p><b>Common Core State Standards Connections:</b>  <b>ELA/Literacy</b>  <b>RI.3.7</b> Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur). (3-LS1-1)  <b>SL.3.5</b> Create engaging audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details. (3-LS1-1)  <b>Mathematics –</b>  <b>MP.4</b> Model with mathematics. (3-LS1-1)  <b>3.NBT</b> Number and Operations in Base Ten (3-LS1-1)  <b>3.NF</b> Number and Operations—Fractions (3-LS1-1)</p>		
<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>• What are the stages of an organism’s life cycle?</li> <li>• How do the life cycles of organisms compare?</li> <li>• What makes an organism’s life cycle unique?</li> <li>• How do organisms use their characteristics to survive, find mates, and reproduce?</li> </ul>	<p><b>Unit Goals: Students –</b></p> <ul style="list-style-type: none"> <li>• Explore the life cycles of plants and animals.</li> </ul>	
<p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>• Plan and Carry Out Investigations</li> <li>• Develop and Use Models</li> <li>• Analyze and Interpret Data</li> </ul>	<p><b>Vocabulary:</b>  Bird  birth  Cause and effect  Chrysalises  Death  Environment  extinct  Fish  growth  Young plant</p>	<p>larva  life cycle  mammal  mature plant (adult)  metamorphosis  Organism  Reproduction  reptile  seed  Seedling  sprout</p>
<p><b>Demonstration of Learning/Assessments:</b></p> <ul style="list-style-type: none"> <li>• Discover how organisms go through life cycles.</li> <li>• Identify and recognize the common patterns in various life cycles of plants.</li> <li>• Build models of a plant or animal life cycle.</li> <li>• Understand that a given plant’s life cycle always happens in the same order.</li> <li>• Learn about technology that enables scientists to find patterns in data that essential to the continued existence of every organism.</li> </ul>	<p><b>21<sup>st</sup> Century Themes:</b></p> <p><b>Global Awareness:</b> Why learning about life cycles is important.  <b>Health Literacy:</b> Understanding of life cycles.  <b>Environmental Literacy:</b> Understand the variations they see in different life cycles of plants and animals  <b>Creativity and Innovation:</b></p> <ul style="list-style-type: none"> <li>• Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts</li> <li>• Be open and responsive to new and diverse perspectives; incorporate group input and feedback into the work</li> </ul> <p><b>Flexibility and Adaptability:</b> Incorporate feedback effectively  <b>Social and Cross-cultural skills:</b> Know when it is appropriate to listen and when to speak</p>	

<p><b>Resources: Optional/Additional/ Supplementary Resources:</b></p> <p><b>Online tools:</b></p> <ul style="list-style-type: none"> <li>• Brainpoj.com</li> <li>• Brainpopspanol.com</li> <li>• Jonesvilleschools.org</li> <li>• Third Grade Common Core and Next Generation Science NGSS Lessons: Full Year</li> <li>• by Engaging Lessons by Frank (teacherspayteachers.com)</li> <li>• *Bill Nye The Science Guy videos</li> <li>• Edhelper.com</li> <li>• Brainpop.com</li> <li>• United Streaming</li> <li>• curriculumcrafter.org</li> <li>• youtube videos</li> <li>• readworks.org</li> <li>• Science Companion</li> <li>• The Science Penguin Inc. (teacherspayteachers.com)</li> <li>• Magic School Bus Books and videos- Magic School Bus</li> <li>• Butterfly and the Bog Beast and Magic School Bus All Dried Up</li> </ul>	<p><b>Books:</b></p> <ul style="list-style-type: none"> <li>• Aston, D. (2011). A butterfly is patient</li> <li>• Swanson S. (2008). To be like the sun.</li> <li>• Kimura, K. (2011). 999 tadpoles.</li> <li>• Guiberson, B. (1991). Cactus hotel.</li> </ul>	<p><b>Performance Tasks (Labs) <i>Listed below are the suggested activities that can be used to perform the labs. Teachers will have the autonomy to change the materials to make the proper adjustments needed in order to perform lab task.</i></b></p> <ol style="list-style-type: none"> <li>1. <b>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.</b> Work to develop a model that demonstrates a plant or animal life cycle and compare it to other plant or animal life cycles.</li> </ol>
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<b>Unit: Ecosystems: Interactions, Energy, and Dynamics</b>		<b>Grade Level: 3</b>	<b>Time Frame: Quarter 1 (b)</b>			
<p><b>Standards:</b> 3-LS2-1. Construct an argument that some animals form groups that help members survive.  <i>Common Core State Standards Connections:</i>  <i>ELA/Literacy —</i>  <b>RI.3.1</b> Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-LS2-1)  <b>RI.3.3</b> Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (3-LS2-1)  <b>W.3.1</b> Write opinion pieces on topics or texts, supporting a point of view with reasons. (3-LS2-1)  <i>Mathematics —</i>  <b>MP.4</b> Model with mathematics. (3-LS2-1)  <b>3.NBT</b> Number and Operations in Base Ten. (3-LS2-1)</p>						
<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>❖ How do animals benefit from living in groups?</li> <li>❖ How does being part of an animal group help the animals obtain food?</li> <li>❖ How does being part of an animal group help the animals defend themselves?</li> <li>❖ How does being part of an animal group help the animals reproduce effectively?</li> <li>❖ How does being part of an animal group help the animals deal with change?</li> </ul>		<p><b>Unit Goals:</b></p> <ol style="list-style-type: none"> <li>1. Students will develop an understanding that being part of a group can help animals find food, protect themselves from predators, reproduce successfully and adapt to change.</li> <li>2. Animal groups vary greatly in size and function.</li> </ol>				
<p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>• Construct an argument with evidence data and /or models.</li> <li>• Identify the cause and effect relationship between animal groups and their survival.</li> </ul>		<p><b>Vocabulary:</b>                      adapt                      reproduce                      animal groups                      predator                      prey                      herd</p>				
<p><b>Demonstration of Learning/Assessments:</b></p> <ul style="list-style-type: none"> <li>• Students will identify cause-and-effect relationships in order to write an explanatory text on the advantages of groups of animals working together.</li> <li>• Students will construct an argument with evidence (e.g., needs and characteristics of the organisms and habitats involved) that in a particular habitat, some organisms can survive well, some can survive less well, and some cannot survive at all.</li> </ul>						
<p><b>Resources: Additional/Supplementary:</b>  <b>Books:</b>                      Johnston, T. (2001). <i>The barn owls</i>.                      Asper-Smith, A. (2010). <i>Have you ever seen a smack of jellyfish?</i>                      Wright, A. (2015). <i>A tower of giraffes</i>.                      Nargi, L. (2011). <i>The honeybee man</i>.  <b>Video:</b>                      The Battle at Kruger (short video shows a herd of water buffalo working together to save a calf).</p>	<p><b>21<sup>st</sup> Century Themes</b>  <b>Collaborate with Others</b></p> <ul style="list-style-type: none"> <li>• Demonstrate ability to work effectively and respectfully with diverse teams</li> <li>• Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal</li> <li>• Assume shared responsibility for collaborative work, and value the individual contributions made by each team member</li> </ul> <p><b>Environmental Literacy</b></p> <ul style="list-style-type: none"> <li>• Demonstrate knowledge and understanding of the environment and the circumstances and conditions affecting it, particularly as relates to air, climate, land, food, energy, water and ecosystems</li> <li>• Demonstrate knowledge and understanding of society’s impact on the natural world (e.g., population growth, population development, resource consumption rate, etc.)</li> <li>• Investigate and analyze environmental issues, and make accurate conclusions about effective solutions</li> </ul>	<p><b>Performance Tasks (Labs) Listed below are the suggested activities that can be used to perform the labs. Teachers will have the autonomy to change the materials to make the proper adjustments needed in order to perform lab task.</b></p> <p><b>Construct an argument that some animals form groups that help members survive.</b></p> <ul style="list-style-type: none"> <li>• Students will view the video “The Battle at Kruger”. (This short video shows a herd of water buffalo working together to save a calf.) Students will make observations from the video to find evidence to construct an argument that some animals benefit from forming groups.</li> <li>• Students will research names which describe various groups of animal (i.e. pods, herds, pack). Students will create a chart with the names and how this grouping helps animal survive.</li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">geese</td> <td style="width: 33%;">flock</td> <td style="width: 33%;">Geese can cope with the changing environment by migrating, flying in a flock.</td> </tr> </table>		geese	flock	Geese can cope with the changing environment by migrating, flying in a flock.
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<b>Unit: Heredity: Inheritance and Variation of Traits</b>	<b>Grade Level: 3</b>	<b>Time Frame: Quarter 2(a)</b>
<p><b>Science Standards:</b>  <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.  <b>3-LS3-2.</b> Use evidence to support the explanation that traits can be influenced by the environment.</p> <p><b>Common Core State Standards Connections:</b>  <b>ELA/Literacy –</b>  <b>RI.3.1</b> Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. <b>(3-LS3-1), (3-LS3-2)</b>  <b>RI.3.2</b> Determine the main idea of a text; recount the key details and explain how they support the main idea. <b>(3-LS3-1), (3-LS3-2)</b>  <b>RI.3.3</b> 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. <b>(3-LS3-1), (3-LS3-2)</b>  <b>W.3.2</b> Write informative/explanatory texts to examine a topic and convey ideas and information clearly. <b>(3-LS3-1), (3-LS3-2)</b>  <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>(3-LS3-1), (3-LS3-2)</b>  <b>Mathematics –</b>  <b>MP.2</b> Reason abstractly and quantitatively. <b>(3-LS3-1), (3-LS3-2)</b>  <b>MP.4</b> Model with mathematics. <b>(3-LS3-1), (3-LS3-2)</b>  <b>3.MD.B.4</b> 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. <b>(3-LS3-1), (3-LS3-2)</b></p>		
<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>• What kinds of traits are passed on from parent to offspring?</li> <li>• What environmental factors might influence the traits of a specific organism?</li> </ul>	<p><b>Unit Goals: Students –</b></p> <ul style="list-style-type: none"> <li>• Recognize plant and animal traits and where they come from.</li> <li>• Acquire an understanding that organisms have different inherited traits and that the environment can also affect the traits that an organism develops.</li> <li>• Learn about offspring and parents of plants and animals.</li> <li>• Interpret data about inherited traits.</li> <li>• Note similarities and differences in organisms that can be understood in terms of inheritance.</li> <li>• Find pattern in inherited traits and simulate inheritance in hands-on projects.</li> </ul>	
<p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>• Plan and Carry Out Investigations</li> <li>• Analyze and Interpret Data</li> <li>• Construct explanations, and design solutions</li> <li>• Use practices to demonstrate understanding</li> </ul>	<p><b>Vocabulary:</b>  Organism  Traits  Similarities  Differences</p>	<p>Heredity  Inherited traits  patterns</p>
<p><b>Demonstration of Learning/Assessments:</b></p> <ul style="list-style-type: none"> <li>• Study images of organisms to collect and interpret data and find inherited traits.</li> <li>• Note similarities and differences in organisms</li> <li>• Sort and classify natural phenomena using similarities and differences</li> <li>• Identify cause-and-effect relationships in order to explain change</li> <li>• Use evidence to support the explanation that traits can be influenced by the environment.</li> </ul>	<p><b>21<sup>st</sup> Century Themes:</b>  <b>Global Awareness:</b> How important is understanding heredity and inherited traits  <b>Health Literacy:</b> Understanding heredity and traits.  <b>Environmental Literacy:</b> Explain how traits can be influenced by the environment.  <b>Creativity and Innovation:</b></p> <ul style="list-style-type: none"> <li>• Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts</li> <li>• Be open and responsive to new and diverse perspectives; incorporate group input and feedback into the work</li> </ul> <p><b>Flexibility and Adaptability:</b> Incorporate feedback effectively  <b>Social and Cross-cultural skills:</b> Know when it is appropriate to listen and when to speak</p>	

<p><b>Resources: Optional/Additional/Supplementary Resources:</b></p> <p><b>Online tools:</b></p> <ul style="list-style-type: none"> <li>• Brainpoj.com</li> <li>• Brainpopspanol.com</li> <li>• Jonesvilleschools.org</li> <li>• Third Grade Common Core and Next Generation Science NGSS Lessons: Full Year</li> <li>• by Engaging Lessons by Frank (teacherspayteachers.com)</li> <li>• *Bill Nye The Science Guy videos</li> <li>• Edhelper.com</li> <li>• Brainpop.com</li> <li>• United Streaming</li> <li>• curriculumcrafter.org</li> <li>• youtube videos</li> <li>• readworks.org</li> <li>• Science Companion</li> <li>• The Science Penguin Inc. (teacherspayteachers.com)</li> <li>• Magic School Bus Books and videos- Magic School Bus</li> <li>• Butterfly and the Bog Beast and Magic School Bus All Dried Up</li> </ul>	<p><b>Books:</b></p> <p>Patent, D. (1989) Grandfather’s nose: Why we all look alike or different.</p> <p>Leedy, L. (1993) Tracks in the sand.</p> <p>Eastman, P. (1998). Are you my mother?</p> <p>Crenson, V. (2009). Horseshoe crabs and shorebirds: The story of a food web.</p> <p>Jenkins, S. (2008) What do you do with a tail like this?</p> <p>Miller, D. (2007) Arctic lights, arctic nights.</p> <p>Peters, L. (2003). Our family tree: An evolution story</p> <p>Bardoe, C. (2015). Gregor Mendel: The friar who grew peas.</p>	<p><b>Performance Tasks (Labs) <i>Listed below are the suggested activities that can be used to perform the labs. Teachers will have the autonomy to change the materials to make the proper adjustments needed in order to perform lab task.</i></b></p> <ol style="list-style-type: none"> <li>1. <b>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.</b></li> <li>2. <b>3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.</b> Choose one parent, grandparent, or older family member. Interview them about at least four traits that they see being passed through the family. After your interview gather pictures of family members and either in a PowerPoint or poster describe each of the four traits mentioned, who has had them, and how they were passed down. (Make sure to include the name and relationship of the person you interviewed.)</li> </ol>
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<b>Unit: Heredity: Biological Evolution- Unity and Diversity</b>		<b>Grade Level: 3</b>	<b>Time Frame: Quarter 2(b)</b>
<p><b>Science Standards:</b>  <b>Students who demonstrate understanding can:</b>  <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.  <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.  <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.  <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.*</p> <p><b>Common Core State Standards Connections:</b>  <b>ELA/Literacy –</b>  <b>RI.3.1</b> Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-LS4-1), (3-LS4-2), (3-LS4-3, 3-LS4-4)  <b>RI.3.2</b> Determine the main idea of a text; recount the key details and explain how they support the main idea. (3-LS4-1), (3-LS4-2), (3-LS4-3), (3LS4-4)  <b>RI.3.3</b> Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (3-LS4-1), (3-LS4-2 3-LS4-3), (3-LS4-4)  <b>W.3.1</b> Write opinion pieces on topics or texts, supporting a point of view with reasons. (3-LS4-1), (3-LS4-3), (3-LS4-4)  <b>W.3.2</b> Write informative/explanatory texts to examine a topic and convey ideas and information clearly. (3-LS4-1), (3-LS4-2), (3-LS4-3), (3-LS4-4)  <b>W.3.8</b> Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. (3-LS4-1)  <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. (3-LS4-2), (3-LS4-3), (3-LS4-4)  <b>Mathematics –</b>  <b>MP.2</b> Reason abstractly and quantitatively. (3-LS4-1), (3-LS4-2), (3-LS4-3), (3-LS4-4)  <b>MP.4</b> Model with mathematics. (3-LS4-1), (3-LS4-2), (3-LS4-3), (3-LS4-4)  <b>MP.5</b> Use appropriate tools strategically. (3-LS4-1)  <b>3.MD.B.3</b> Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. (3-LS4-2), (3-LS4-3)  <b>3.MD.B.4</b> 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. (3-LS4-1)</p>			
<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>• What can you learn from studying a fossil?</li> <li>• What do fossils tell us about the past?</li> <li>• How does human civilization affect an environment and the animals and plants that live there?</li> <li>• What kinds of things may have caused the different extinctions (before and after the emergence of humans) throughout time?</li> <li>• Can you think of how different traits may improve the survival and reproduction of different animals and plants (including humans)?</li> <li>• Choose one type of environment and list some of the animals and plants that thrive there, those that may be there in small numbers, and those that do not live there at all (i.e. a desert environment).</li> <li>• Can you name a population of animals (or plants) that was greatly affected by a change to its habitat?</li> </ul>		<p><b>Unit Goals: Students –</b></p> <ul style="list-style-type: none"> <li>• Explore fossils</li> <li>• Discover what fossils can tell us about animals that lived long ago</li> <li>• Understand that when an environment changes, it affects the species (animals and plants) living there.</li> <li>• Understand that some species have gone extinct and there is fossil evidence of their existence.</li> <li>• Understand the process of natural selection and how it affects survival and reproduction.</li> <li>• Understand what a “population” is and how a change in their environment can affect them</li> </ul>	
<p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>• Analyze and Interpret Data</li> <li>• Construct Explanations and Design Solutions</li> <li>• Engage in Argument from Evidence</li> </ul>		<p><b>Vocabulary:</b>                      Aquatic                      Extinct                      Fossil                      Terrestrial</p>	

<p><b>Demonstration of Learning/Assessments:</b></p> <ul style="list-style-type: none"> <li>Analyze and interpret data from fossils to provide signs of the organisms and environments they lived in long ago.</li> <li>Identify types of fossils</li> <li>Explain how fossil characterize plants and animal from the past.</li> </ul>		<p><b>21<sup>st</sup> Century Themes:</b></p> <p><b>Global Awareness:</b> Understanding where fossils come from and how they help us understand the past and the world we live in now.</p> <p><b>Health Literacy:</b> How the discovery of fossils impacts today’s health.</p> <p><b>Environmental Literacy:</b> Explain how fossils findings cause environmental changes in present-day plants and animals.</p> <p><b>Creativity and Innovation:</b></p> <ul style="list-style-type: none"> <li>Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts</li> <li>Be open and responsive to new and diverse perspectives; incorporate group input and feedback into the work</li> </ul> <p><b>Flexibility and Adaptability:</b> Incorporate feedback effectively</p> <p><b>Social and Cross-cultural skills:</b> Know when it is appropriate to listen and when to speak</p>
<p><b>Resources: Optional/Additional/Supplementary Resources:</b></p> <p><b>Online tools:</b></p> <ul style="list-style-type: none"> <li>Brainpoj.com</li> <li>Brainpopspanol.com</li> <li>Jonesvilleschools.org</li> <li>Third Grade Common Core and Next Generation Science NGSS Lessons: Full Year</li> <li>by Engaging Lessons by Frank (teacherspayteachers.com)</li> <li>*Bill Nye The Science Guy videos</li> <li>Edhelper.com</li> <li>Brainpop.com</li> <li>exploringnature.org</li> <li>curriculumcrafter.org</li> <li>youtube videos</li> <li>readworks.org</li> <li>Science Companion</li> </ul>	<p><b>Books:</b></p> <ul style="list-style-type: none"> <li>Baylor, B. (1984) If you are a hunter of fossils.</li> <li>Aliki. (1990) Dinosaur bones.</li> <li>Sanders, S. (2002). Crawdad creek</li> <li>Ewart, C. (2014). Fossil.</li> <li>Cannon, J. (1993). Stلالuna.</li> <li>Patent, D. (1989) Grandfather’s nose: Why we all look alike or different.</li> <li>McDermot, G. (1987). Anansi the spider: A tale from the Ashanti</li> <li>Arnosky, J. (1996). Every autumn comes the bear.</li> <li>behGall, C. (2006). Dear fish.</li> <li>Barrett, J. (1988). Animals should definitely not wear clothing.</li> <li>Rockwell, A. (2006). Backyard bear.</li> <li>Lionni, L. (1974). Fish is fish</li> <li>Base, G. (2001). The water hole.</li> <li>Peet, B. (1981). The wump world.</li> <li>Brown, P. (2009). The curious garden.</li> <li>A. (2006). Backyard bear.</li> <li>Base, G. (2001). The water hole.</li> <li>Brown, P. (2009). The curious garden.</li> </ul>	<p><b>Performance Tasks (Labs) Listed below are the suggested activities that can be used to perform the labs. Teachers will have the autonomy to change the materials to make the proper adjustments needed in order to perform lab task.</b></p> <ol style="list-style-type: none"> <li><b>33-LS4-1. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.</b></li> <li><b>3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.</b></li> <li><b>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.</b></li> <li><b>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.*</b></li> </ol> <p>Have students pretend they are scientists presenting information about their assigned fossil to the class. Students must make a claim about the fossil, providing evidence of common ancestry</p>

Unit Earth's Systems	Grade Level: 3	Time Frame: Quarter 3 (a)
<p><b>Standards:</b>                      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</p> <p><b>Common Core State Standards Connections:</b>  <b>ELA:</b>  <u>RI.3.1</u> Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-ESS2-2)  <u>RI.3.9</u> Compare and contrast the most important points and key details presented in two texts on the same topic. (3-ESS2-2)  <u>W.3.8</u> Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. (3-ESS2-2)  <b>Mathematics:</b>  <u>MP.2</u> Reason abstractly and quantitatively. (3-ESS2-1),(3-ESS2-2)  <u>MP.4</u> Model with mathematics. (3-ESS2-1),(3-ESS2-2)  <u>MP.5</u> Use appropriate tools strategically. (3-ESS2-1)  <u>3.MD.A.2</u> Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. (3-ESS2-1)  <u>3.MD.B.3</u> 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 bar graphs. (3-ESS2-1)</p>		
<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>❖ How is weather predicted and measured?</li> <li>❖ What is the difference between weather and climate?</li> <li>❖ How does the weather impact society and nature?</li> </ul>	<p><b>Unit Goals:</b> Students will observe visuals (videos, weather reports, books, and online sources) to obtain information about expected weather patterns. Students will explain that temperature, wind, precipitation are factors that influence weather and those pattern can be used to forecast the weather.</p>	
<p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>• Gather data on weather (i.e. temperature, precipitation, wind direction) and display in graphic form.</li> <li>• Analyze and interpret data to describe the climate in different regions of the world.</li> </ul>	<p><b>Vocabulary:</b>                      Atmosphere, climate, weather, hazard, precipitation, rain gauge, thermometer, wind vane, forecast, patterns</p>	
<p><b>Demonstration of Learning/Assessments:</b></p> <ul style="list-style-type: none"> <li>• Students will gather data and represent in table and various graphic displays in order to reveal patterns that describe weather conditions during a particular season.</li> <li>• Students will combine information in order compare and contrast the climates from different regions in a written text.</li> </ul>	<p><b>21<sup>st</sup> Century Themes:</b>                      Environmental Literacy:</p> <ul style="list-style-type: none"> <li>• Demonstrate knowledge and understanding of the environment and the circumstances and conditions affecting it, particularly as relates to air, climate, land, food, energy, water and ecosystems</li> <li>• Demonstrate knowledge and understanding of society’s impact on the natural world (e.g., population growth, population development, resource consumption rate, etc.) • Investigate and analyze environmental issues, and make accurate conclusions about effective solutions</li> </ul>	
<p><b>Resources:</b>                      Rabe, T. (2004). Oh say can you say what’s the weather today? All about weather                      Gibbons, G. (1993). Weather forecasting.                      Dean, J. (2013). Freddy the Frogcaster.                      DeWitt, L. (2015). What will the weather be?                      Singer, M. (2001). On the same day in March: A tour of the world’s weather.                      Aillaud, C. (2005). Recess at 20 below.                      Alberti, T. (2006). Climates</p>	<p><b>Performance Tasks (Labs)</b> <i>Listed below are the suggested activities that can be used to perform the labs. Teachers will have the autonomy to change the materials to make the proper adjustments needed in order to perform lab task.</i></p> <ol style="list-style-type: none"> <li>1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.</li> <li>2. Obtain and combine information to describe climates in different regions of the world</li> </ol> <ul style="list-style-type: none"> <li>• Students may make weather observations and record those conditions in a table/chart. Information can be gathered daily from local news reports. They also graph and analyze the data to find weather patterns. They can use those patterns to make predictions of upcoming weather. Student may look up past weather conditions for a particular time period to determine patterns and make future weather predictions.</li> </ul>	



Unit Earth and Human Activity	Grade Level: 3	Time Frame: Quarter 3(b)
<p><b>Standards:</b>                      3-ESS3-1      <b>Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.</b></p> <p><b>Common Core State Standards Connections:</b>  <b>ELA:</b>  <u>W.3.1</u>      <u>Write opinion pieces on topics or texts, supporting a point of view with reasons. (3-ESS3-1)</u>  <u>W.3.7</u>      <u>Conduct short research projects that build knowledge about a topic. (3-ESS3-1)</u>  <b>Mathematics:</b>  <u>MP.2</u>      <u>Reason abstractly and quantitatively. (3-ESS3-1)</u>  <u>MP.4</u>      <u>Model with mathematics. (3-ESS3-1)</u></p>		
<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>❖ What are some severe weather impacts?</li> <li>❖ How can we use data to help minimize damage caused by severe weather?</li> <li>❖ How can we evaluate the benefits and drawbacks of design solutions to help prevent severe weather damage?</li> </ul>	<p><b>Unit Goals:</b> Students will analyze patterns and cause and effect relationships between severe weather and developing and improving technologies in order to make a claim about the merit of some technological solutions.</p>	
<p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>• Construct explanations and evaluate design solutions that reduce damage caused by severe weather.(i.e. barriers to prevent flooding, salting roads in snowy weather)</li> </ul>	<p><b>Vocabulary:</b>                      Severe weather                      Floods                      Hurricanes                      Tornado                      blizzards</p>	
<p><b>Demonstration of Learning/Assessments:</b></p> <ul style="list-style-type: none"> <li>• Identify a variety of design solutions that are used in response to severe weather conditions.</li> <li>• Write an opinion piece about the merit of a design solution based on evidence of how well it solves the problem.</li> </ul>	<p><b>21<sup>st</sup> Century Themes:</b>  <b>Environmental Literacy</b>                      • Demonstrate knowledge and understanding of the environment and the circumstances and conditions affecting it, particularly as relates to air, climate, land, food, energy, water and ecosystems                      • Investigate and analyze environmental issues, and make accurate conclusions about effective solutions  <b>Reason Effectively</b>                      • Effectively analyze and evaluate evidence, arguments, claims and beliefs                      *Use various types of reasoning (inductive, deductive, etc.) as appropriate to the situation</p>	
<p><b>Resources: Additional;Supplementary</b>                      Seuss, D. (1949). Bartholomew and the oobleck                      Nivola, C. (2008). Planting the trees of Kenya: The story of Wangari Mathaai.                      Rose, C. (2015). Over in the wetlands: A hurricane-on-the-bayou story                      Simon, S. (2001). Tornadoes.</p>	<p><b>Performance Tasks (Labs) Listed below are the suggested activities that can be used to perform the labs. Teachers will have the autonomy to change the materials to make the proper adjustments needed in order to perform lab task.</b></p> <p><b>Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.</b></p> <ul style="list-style-type: none"> <li>• Students will research various tools that help reduce damage caused by severe weather (I.e. snow plows, lighting rods, salt spreaders, solar roads) and then present their findings on the benefits and drawbacks.</li> <li>• Students may look at severe weather tools and collaborate with team members to improve the selected tools.</li> </ul>	

Unit: <b>Motion and Stability: Forces and Interactions</b>	Grade Level: <b>3</b>	Time Frame: <b>Quarter 4</b>
<p><b>Standards:</b></p> <p><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.</p> <p><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.</p> <p><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.</p> <p><b>3-PS2-4.</b> Define a simple design problem that can be solved by applying scientific ideas about magnets.*</p> <p><b>Common Core State Standards Connections:</b></p> <p><b>ELA:</b></p> <p><b>RI.3.1</b> Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. <i>(3-PS2-1)</i></p> <p><b>W.3.7</b> Conduct short research projects that build knowledge about a topic. <i>(3-PS2-1)</i></p> <p><b>W.3.8</b> Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. <i>(3-PS2-1)</i></p> <p><b>Mathematics :</b></p> <p><b>MP.2</b> Reason abstractly and quantitatively. <i>(3-PS2-1)</i></p> <p><b>MP.5</b> Use appropriate tools strategically. <i>(3-PS2-1)</i></p> <p><b>3.MD.A.2</b> 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. <i>(3-PS2-1)</i></p>		
<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>❖ How can the strength and direction of a force change the motion of the object?</li> <li>❖ How do balanced and unbalanced forces affect the motion of a ball?</li> <li>❖ How can motion can be predicted based on patterns observed in the past?</li> </ul>	<p><b>Unit Goals:</b> Students are expected to design and conduct an investigation to provide evidence of the effects of forces on the motion of an object. Students use evidence to identify a pattern of motion and predict future motion. Students recognize forces can be attractive or repulsive and identify magnetism and static electricity as forces that can act on objects without touching them.</p>	
<p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>• Ask and answer questions to determine cause and effect relationships</li> <li>• Collaborate with others to collect and interpret data to serve as the basis of evidence in investigations.</li> <li>• Predict the outcome of a simple investigation and compare the result with the prediction.</li> </ul>	<p><b>Vocabulary:</b></p> <p>balanced forces, motion, gravity, push, net force, pull, force, magnet, attract, repel, magnetism unbalanced, forces</p>	
<p><b>Demonstration of Learning/Assessments:</b></p> <ul style="list-style-type: none"> <li>• Students will individually describe how the evidence to be collected will be relevant to determining the effects of balanced and unbalanced forces on an object’s motion.</li> <li>• Students will collaboratively collect and record data, including data from observations and/or measurements.</li> <li>• Students will make predictions about what would happen if a variable (size of origami frog) changes.</li> <li>• Students will determine and explain the cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.</li> </ul>	<p><b>21<sup>st</sup> Century Themes:</b></p> <p><b>Communication &amp; Collaboration:</b></p> <ul style="list-style-type: none"> <li>• Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts</li> <li>• Demonstrate ability to work effectively and respectfully with diverse teams</li> <li>• Assume shared responsibility for collaborative work, and value the individual contributions made by each team member</li> </ul>	

<p><b>Resources: Additional/ Supplementary:</b>  <b>Books:</b>                  Walsh, E. (2010). Balancing Act.                  Hall, K. (2004). Tug of war: All about balance.                  Kroll, V. (2005). Equal Shmequal                  Llewellyn, C. (2004). And everyone shouted: “Pull!”                  Tompert, A. (1996). Just a little bit.                  Walsh, E. (2010). Balancing act.                  Waring, G. (2009). Oscar and the cricket: A book about moving and rolling.                  Mason, A. (2005). Move it! Motion, forces, and you.                  Hughes, M. (2015). Magnet Max.                  Rosinsky, N. (2002). Magnets: Pulling together, pushing apart.                  Watley, B (1993). That magnetic dog.                  Schanzer, R. (2002). How Ben Franklin stole the lightning.                  Branley, F. (2016). What makes a magnet?                  Stewart, J. (2000). Magnets.                  Alpert, B. (2011). A look at magnets.                  Weakland, M. (2011). Magnets push, magnets pull.</p>	<p><b>Performance Tasks (Labs) <i>Listed below are the suggested activities that can be used to perform the labs. Teachers will have the autonomy to change the materials to make the proper adjustments needed in order to perform lab task.</i></b></p> <p><b>Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object:</b></p> <ul style="list-style-type: none"> <li>Students will recognize force as a push or a pull. Demonstrate how its strength and direction can be changed. Identify the cause-and-effect relationship between the speed and direction of an object and the strength and direction of the force applied to it.</li> </ul> <p><b>Make observations and/or measurements of an object’s motion to provide evidence that a pattern can be used to predict future motion</b></p> <ul style="list-style-type: none"> <li>Students will conduct an investigation through measurement and data analysis of an origami frogs ( small 2 inches, medium 5 inches and large sizes 8 inches) jumping to predict future motion. They will then use that data to predict and investigate as to how far a fourth frog that is created using 7inch sized paper is expected to jump. The discussion of their results should focus on the effects of size on the frog’s motion.</li> </ul> <p><b>Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other:</b>                  The students will recognize an electric force could :</p> <ul style="list-style-type: none"> <li>Include the force on hair from an electrically charged balloon and the electrical forces between a charged rod and pieces of paper:</li> <li>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.</li> <li>Include how the distance between objects affects strength of the force and how the orientation of magnets affects the direction of the magnetic force.</li> </ul> <p><b>Define a simple design problem that can be solve by applying scientific ideas about magnets</b></p> <ul style="list-style-type: none"> <li>The students will plan and carry out an investigation to demonstrate how the object will work its way through a maze using magnets to demonstrate how magnets create a force field that can either attract (pull) or repel (push) objects toward or away from them. They examine the movement of magnets to determine that opposite poles attract and same poles repel each other.</li> </ul>
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