

Unit Overview	
<b>Content Area:</b> Life Science	
<b>Unit Title: Life Cycles, Traits, and Communities</b>	<b>Unit: 2</b>
<b>Target Course/Grade Level: 3</b>	<b>Timeline: 35 Days</b>
<p><b>Unit Summary:</b></p> <p><b>Traits:</b> In this unit of study, students acquire an understanding that organisms have different inherited traits and that the environment can also affect the traits that an organism develops. The crosscutting concepts of <i>patterns</i> and <i>cause and effect</i> are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency <i>in analyzing and interpreting data, constructing explanations, and designing solutions</i>. Students are also expected to use these practices to demonstrate an understanding of the core ideas.</p> <p>This unit is based on 3-LS3-1 and 3-LS3-2.</p> <p><b>Continuing the Cycle:</b> In this unit of study, students develop an understanding of the similarities and differences in organisms' life cycles. In addition, students 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. The crosscutting concepts of <i>patterns</i> and <i>cause and effect</i> are called out as organizing concepts for these disciplinary core ideas. Students demonstrate grade-appropriate proficiency in <i>developing and using models and constructing explanations and designing solutions</i>. Students are also expected to use these practices to demonstrate an understanding of the core ideas.</p> <p>This unit is based on 3-LS1-1 and 3-LS4-2.</p> <p><b>Organisms and the Environment:</b> In this unit of study, students develop an understanding of the idea that when the environment changes, some organisms survive and reproduce, some move to new locations, some move into the transformed environment, and some die. The crosscutting concepts of <i>cause and effect</i> and the <i>interdependence of science, engineering, and technology</i> are called out as organizing concepts for these disciplinary core ideas. Students demonstrate grade-appropriate proficiency in <i>engaging in argument from evidence</i>. Students are also expected to use this practice to demonstrate an understanding of the core ideas.</p>	

This unit is based on 3-LS2-1 and 3-LS4-3.

***Using Evidence to Understand Change in Environments:*** In this unit of study, students develop an understanding of the types of organisms that lived long ago and also about the nature of their environments. Students develop an understanding of the idea that when the environment changes, some organisms survive and reproduce, some move to new locations, some move into the transformed environment, and some die. The crosscutting concepts of *systems and system models; scale, proportion, and quantity; and the influence of engineering, technology, and science on society and the natural world* are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in *asking questions and defining problems, analyzing and interpreting data, and engaging in argument from evidence*. Students are also expected to use these practices to demonstrate an understanding of the core ideas.

This unit is based on 3-LS4-1, 3-LS4-4, and 3-5-ETS1-1.

### Learning Targets

#### NJSLS-Science

<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.
<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.
<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-LS2-1</b>	Construct an argument that some animals form groups that help members survive.
<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-LS4-1</b>	Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.

<b>3-LS4-4</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.
<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.
<b>Disciplinary Core Ideas</b>	
<p><b>LS3.A: Inheritance of Traits</b></p> <ul style="list-style-type: none"> <li>• Many characteristics of organisms are inherited from their parents. (3-LS3-1)</li> <li>• Other characteristics result from individuals’ interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment. (3-LS3-2)</li> </ul> <p><b>LS3.B: Variation of Traits</b></p> <ul style="list-style-type: none"> <li>• Different organisms vary in how they look and function because they have different inherited information. (3-LS3-1)</li> <li>• The environment also affects the traits that an organism develops. (3-LS3-2)</li> </ul> <p><b>LS1.B: Growth and Development of Organisms</b></p> <ul style="list-style-type: none"> <li>• Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. (3-LS1-1)</li> </ul> <p><b>LS4.B: Natural Selection</b></p> <ul style="list-style-type: none"> <li>• Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. (3-LS4-2)</li> </ul> <p><b>LS2.D: Social Interactions and Group Behavior</b></p> <ul style="list-style-type: none"> <li>• Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size (<i>Note: Moved from K–2</i>). (3-LS2-1)</li> </ul> <p><b>LS4.C: Adaptation</b></p> <ul style="list-style-type: none"> <li>• For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3)</li> </ul> <p><b>LS4.A: Evidence of Common Ancestry and Diversity</b></p> <ul style="list-style-type: none"> <li>• Some kinds of plants and animals that once lived on Earth are no longer found anywhere. (3-LS4-1)</li> <li>• Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments. (3-LS4-1)</li> </ul> <p><b>LS4.D: Biodiversity and Humans</b></p> <ul style="list-style-type: none"> <li>• Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4)</li> </ul> <p><b>LS2.C: Ecosystem Dynamics, Functioning, and Resilience</b></p>	

- 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*)

#### **ETS1.A: Defining and Delimiting Engineering Problems**

- Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account. (3-5-ETS1-1)

### **Science and Engineering Practices**

#### **Analyzing and Interpreting Data**

- Analyze and interpret data to make sense of phenomena using logical reasoning. (3-LS3-1) (3-LS4-1)

#### **Constructing Explanations and Designing Solutions**

- Use evidence (e.g., observations, patterns) to support an explanation. (3-LS3-2) (3-LS4-2)

#### **Developing and Using Models**

- Develop models to describe phenomena. (3-LS1-1)

#### **Engaging in Argument from Evidence**

- Construct an argument with evidence, data, and/or a model. (3-LS2-1)
- 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)

#### **Asking Questions and Defining Problems**

- Define a simple design problem that can be solved through the development of an object, tool, process, or system and includes several criteria for success and constraints on materials, time, or cost. (3-5-ETS1-1)

### **NJSLS Connections**

#### **Primary Interdisciplinary Connections:**

#### ***English Language Arts/Literacy:***

- Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. **RI.3.1**
- Determine the main idea of a text; recount the key details and explain how they support the main idea. **RI.3.2**
- 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.3.3**

- Write opinion pieces on topics or texts, supporting a point of view with reasons. **W.3.1**
- Write informative/explanatory texts to examine a topic and convey ideas and information clearly. **W.3.2**
- Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. **W.3.8**
- Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. **SL.3.4**
- 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. **SL.3.5**
- Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate an understanding of the text (e.g., where, when, why, and how key events occur). **RI.3.7**
- Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. **W.5.7**
- Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources. **W.5.8**
- Draw evidence from literary or informational texts to support analysis, reflection, and research. **W.5.9**

***Mathematics:***

- Reason abstractly and quantitatively. **MP.2**
- Model with mathematics. **MP.4**
- Use appropriate tools strategically. **MP.5**
- Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. **3.MD.B.3**
- 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.MD.B.4**
- Number and Operations in Base Ten **3.NBT**
- Number and Operations—Fractions **3.NF**
- Operations and Algebraic Thinking **3-5.OA**

<p><b>Unit Essential Questions</b></p> <ol style="list-style-type: none"> <li>1. <i>What kinds of traits are passed on from parent to offspring?</i></li> <li>2. <i>What environmental factors might influence the traits of a specific organism?</i></li> <li>3. <i>Do all living things have the same life cycle?</i></li> <li>4. <i>Are there advantages to being different?</i></li> <li>5. <i>In a particular habitat, why do some organisms survive well, some survive less well, and some not survive at all?</i></li> <li>6. <i>What do fossils tell us about the organisms and the environments in which they lived?</i></li> <li>7. <i>What happens to the plants and animals when the environment changes?</i></li> </ol>	<p><b>Unit Understandings</b></p>
<p><b>Unit Learning Targets (Outcomes) – Formative Assessment</b>  <i>Students who understand the concepts are able to ...</i></p>	
<ul style="list-style-type: none"> <li>● Sort and classify natural phenomena using similarities and differences.</li> <li>● Analyze and interpret data to make sense of phenomena using logical reasoning.</li> <li>● 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.</li> <li>● Identify cause-and-effect relationships in order to explain change.</li> <li>● Use evidence (e.g., observations, patterns) to support an explanation.</li> <li>● Use evidence to support the explanation that traits can be influenced by the environment. Examples of the environment’s effect on traits could include: <ul style="list-style-type: none"> <li>✓ Normally tall plants that grow with insufficient water are stunted.</li> <li>✓ A pet dog that is given too much food and little exercise may become overweight.</li> </ul> </li> </ul>	
<ul style="list-style-type: none"> <li>● Sort organisms (inherited traits) using similarities and differences in patterns.</li> <li>● Make predictions using patterns of change.</li> <li>● Develop models to describe phenomena.</li> </ul>	

- Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. (I.e., Changes organisms go through during their life form a pattern.)
- Identify cause-and-effect relationships in order to explain change.
- Use evidence (e.g., observations, patterns) to construct an explanation.
- Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. Examples of cause-and-effect relationships could include:
  - ✓ Plants that have larger thorns than other plants may be less likely to be eaten by predators.
  - ✓ Animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.

- Identify cause-and-effect relationships in order to explain change.
- Construct an argument with evidence.
- 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.

- Observe that phenomena exist from very short to very long periods of time.
- Analyze and interpret data to make sense of phenomena using logical reasoning.
- Analyze and interpret data from fossils (e.g., type, size, distributions of fossil organisms) to provide evidence of the organisms and the environments in which they lived long ago. Examples of fossils and environments could include:
  - ✓ Marine fossils found on dry land;
  - ✓ Tropical plant fossils found in Arctic areas; or
  - ✓ Fossils of extinct organisms.
- Describe a system in terms of its components and interactions.
- 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 a problem.
- 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. (Assessment is limited to a single environmental change and does not include the greenhouse effect or climate change.) Examples of environmental changes could include changes in
  - ✓ Land characteristics,
  - ✓ Water distribution,

**Cross Cutting Concepts:**

**Patterns**

- Similarities and differences in patterns can be used to sort and classify natural phenomena. (3-LS3-1)

**Cause and Effect**

- Cause and effect relationships are routinely identified and used to explain change. (3-LS3-2)

**Scale, Proportion, and Quantity**

- Observable phenomena exist from very short to very long time periods. (3-LS4-1)

**Systems and System Models**

- A system can be described in terms of its components and their interactions. (3-LS4-4)

**Interdependence of Engineering, Technology, and Science on Society and the Natural World**

- Knowledge of relevant scientific concepts and research findings is important in engineering. (3-LS4-4)

**Influence of Science, Engineering, and Technology on Society and the Natural World**

- People's needs and wants change over time, as do their demands for new and improved technologies. (3-5-ETS1-1)

**Scientific Knowledge Assumes an Order and Consistency in Natural Systems**

- Science assumes consistent patterns in natural systems. (3-LS4-1)

**Integration of Technology:** Interactive Whiteboard, Videos

**Technology Resources:**

**Opportunities for Differentiation:** Differentiation and support tips, which includes suggestions for ELL, struggling students, and accelerated students, are available below the instructional practice section of each model lesson.

**Teacher Notes:**

**Career Ready Practices:** *In this unit the following career ready practices are addressed*

CRP1: Act as a reasonable and contributing citizen and employee

CRP2: Apply appropriate academic and technical skills

CRP3: Attend to personal health and financial well-being

CRP4: Communicate clearly and effectively and with reason

CRP5: Consider the environmental, social and economic impacts of decisions

CRP6: Demonstrate creativity and innovation

CRP7: Employ valid and reliable research strategies

CRP8: Utilize critical thinking to make sense of problems and persevere in solving them

CRP9: Model integrity, ethical leadership and effective management

CRP10: Plan education and career paths aligned to personal goals

CRP11: Use technology to enhance productivity

CRP12: Work productively in teams while using cultural global competence

**Prior Learning- by the end of Grade \_\_ , students understand that:**

- By the end of Grade 1, students understand that: • Young animals are very much, but not exactly like, their parents. Plants also are very much, but not exactly, like their parents. • Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways.
- Grade 1 Unit 2: Characteristics of Living Things • Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways.



- Kindergarten Unit 4: Basic Needs of Living Things • Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. • Asking questions, making observations, and gathering information are helpful in thinking about problems. (secondary) Grade 2 Unit 1: Relationships in Habitats • Plants depend on water and light to grow. • Plants depend on animals for pollination or to move their seeds around.

### Evidence of Learning

#### Summative Assessment

End of Unit Life Science Assessment  
Dog/Horse Breed Presentations  
Animal Communities Presentations  
Project Based Learning: Mealworms or Frog Life Cycle

**Equipment needed:** Whiteboard, laptops, headphones, and hands-on materials for lessons

**Teacher Instructional Resources (Hyperlinks):**

### Modifications for ELL's, Special Education, 504, and Gifted and Talented Students:

*(Note: Teachers identify the modifications that they will use in the unit. See NGSS Appendix D: [All Standards, All Students/Case Studies](#) for vignettes and explanations of the modifications.)*

- Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community.
- Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling).
- Provide opportunities for students to connect with people of similar backgrounds (e.g. conversations via digital tool such as SKYPE, experts from the community helping with a project, journal articles, and biographies).
- Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences).
- Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understandings.
- Use project-based science learning to connect science with observable phenomena.
- Structure the learning around explaining or solving a social or community-based issue.
- Provide ELL students with multiple literacy strategies.
- Collaborate with after-school programs or clubs to extend learning opportunities.
- Restructure lesson using UDL principles  
([http://www.cast.org/our-work/about-udl.html#.VXmoXcfD\\_UA](http://www.cast.org/our-work/about-udl.html#.VXmoXcfD_UA))

<u>ACTIVITIES</u>	<u>MATERIALS</u>
<p><b>1.1: Introducing... Life Cycles!</b> Session 1: What is a life cycle?</p> <p><b>Session Goal:</b> Introduce life cycles.</p>	<ul style="list-style-type: none"> <li>● Act sheet 1: What is a life cycle?</li> <li>● Act sheet 2: How have you changed?</li> </ul>
<p><b>1.1: Introducing... Life Cycles!</b> Session 2: How are plant life cycles similar?</p> <p><b>Session Goal:</b> Identify and sequence life cycles stages common to flowering plants and trees.</p>	<ul style="list-style-type: none"> <li>● Act sheet 3: Plant life cycles</li> </ul>
<p><b>1.1: Introducing... Life Cycles!</b> Session 3: How are animal life cycles alike and different?</p> <p><b>Session Goal:</b> Identify and sequence general animal life cycle stages.</p>	<ul style="list-style-type: none"> <li>● Act sheet 4: Animal Life Cycles</li> </ul>
<p><b>1.2: Plant Life Cycles</b> Session 1: How can we compare plant life cycles?</p> <p><b>Session Goal:</b> Study plant life cycles planting seeds. <b>This session will require several follow up session to observe the full plant life cycle.</b></p>	<ul style="list-style-type: none"> <li>● Plant Life Cycle Observation Journal</li> <li>● 8 containers for planting</li> <li>● Seed packs, cotton balls, tray, soil</li> </ul>
<p><b>1.2: Plant Life Cycles</b> Session 2: What is inside a seed?</p> <p><b>Session Goal:</b> Observe the parts of the seed.</p>	<ul style="list-style-type: none"> <li>● Lima Beans</li> <li>● magnifying glasses</li> <li>● Paper Towels,</li> <li>● Act sheet 2: Inside a seed</li> </ul>
<p><b>1.2: Plant Life Cycles</b> Session 3: How do plants spread their seeds?</p> <p><b>Session Goal:</b> Introduce to seed dispersion mechanisms.</p>	<ul style="list-style-type: none"> <li>● Act Sheet 3: Seed Dispersal</li> <li>● plastic grocery bag (parachute),</li> <li>● mini helicopter (pattern from book)</li> </ul>
<p><b>1.2: Plant Life Cycles</b> Session 4: How do plants spread their seeds?</p> <p><b>Session Goal:</b> Introduce to seed dispersion mechanisms.</p>	<ul style="list-style-type: none"> <li>● Cranberries</li> <li>● Knife</li> <li>● Act Sheet 3: Seed Dispersal (continued)</li> </ul>
<p><b>1.2: Plant Life Cycles</b></p>	<ul style="list-style-type: none"> <li>● Act sheet 4: Plant</li> </ul>

<p>Session 5: What are other ways to make new plants?</p> <p><b>Session Goal:</b> Introduce to seed dispersion mechanisms.</p>	<p>Propagation</p> <ul style="list-style-type: none"> <li>● photo of spider plants</li> <li>● onion or photo of onion</li> </ul>
<p><b>1.2: Plant Life Cycles</b> Session 6+ : Plant life cycle projects</p> <p><b>Session Goal:</b> Make and record accurate observations regarding growth of familiar plants. Graph seedling growth.</p>	<ul style="list-style-type: none"> <li>● Plant life cycle observation journal</li> <li>● Activity sheet 1: Plant life cycle final</li> </ul>
<p><b>1.3: Life Cycles</b> Session 1: What is an amphibian?</p> <p><b>Session Goal:</b> Review of experiences with amphibians and questions they would like to have answered during the lesson.</p>	<ul style="list-style-type: none"> <li>● Activity sheet 1: What do you know?</li> <li>● Activity sheet 2: Frog? Toad? Amphibian?</li> </ul>
<p><b>1.3: Life Cycles</b> Session 2: What are the stages in the life cycle of a frog?</p> <p><b>Session Goal:</b> Identify, describe and sequence life cycles stages common to frogs.</p>	<ul style="list-style-type: none"> <li>● Activity sheet 3: Life cycle of a frog</li> </ul>
<p><b>1.3: Life Cycles</b> Session 3: How do we prepare for the arrival of our frogs?</p> <p><b>Session Goal:</b> Plan and built habitats for the frogs.</p>	<ul style="list-style-type: none"> <li>● Activity sheet 4: Habitat</li> <li>● Aquarium with lid</li> </ul>
<p><b>1.3: Life Cycles</b> Session 4: Egg Observations</p> <p><b>Session Goal:</b> Observe and describe the egg stage.</p>	<ul style="list-style-type: none"> <li>● Activity sheet 5: Egg observations</li> <li>● Plastic containers</li> <li>● Magnifying glasses</li> </ul>
<p><b>1.3: Life Cycles</b> Session 5: Tadpole Observations</p> <p><b>Session Goal:</b> Observe and describe the tadpole stage.</p>	<ul style="list-style-type: none"> <li>● Activity sheet 6: Tadpole Observations</li> <li>● Plastic containers</li> <li>● Magnifying glasses</li> </ul>
<p><b>1.3: Life Cycles</b> Session 6: Tadpole Transformations</p> <p><b>Session Goal:</b> Observe and describe the transformation (complete metamorphosis) from egg to frog.</p>	<ul style="list-style-type: none"> <li>● Activity sheet 7: Tadpole Transformations</li> <li>● Paper fasteners</li> <li>● Scissors</li> </ul>

<p><b>1.4: Nature or Nurture—Traits in Animals and Plants</b>                  Session 1: What are Traits?</p> <p><b>Session Goal:</b> Differentiate among inherited, learned, and acquired traits.</p>	<ul style="list-style-type: none"> <li>● Activity sheet 1: What’s in your head?</li> <li>● Activity sheet 2: All Kinds of Traits</li> </ul>
<p><b>1.4: Nature or Nurture—Traits in Animals and Plants</b>                  Session 2: What can we learn about our inherited traits?</p> <p><b>Session Goal:</b> Conduct a structured inquiry survey about inherited human traits.</p>	<ul style="list-style-type: none"> <li>● Activity sheet 3: Traits Survey</li> <li>● Activity sheet 4: Family Traits Survey (optional)</li> </ul>
<p><b>1.4: Nature or Nurture—Traits in Animals and Plants</b>                  Session 3: Do plants inherit traits too?</p> <p><b>Sessional Goal:</b> Introduction to plant traits.</p>	<ul style="list-style-type: none"> <li>● Activity sheet 5: Plant Traits</li> </ul>
<p><b>1.4: Nature or Nurture—Traits in Animals and Plants</b>                  Session 4: How do humans learn from nature?</p> <p><b>Session Goal:</b> Explore how nature has influenced human learning and technology.</p>	<ul style="list-style-type: none"> <li>● Activity sheet 6: Lessons from nature</li> <li>● Biomimicry kit</li> </ul>
<p><b>1.4: Nature or Nurture—Traits in Animals and Plants</b>                  Session 5: How does trait variation help animals survive?</p> <p><b>Session Goal:</b> Explain the role of trait variation in the survival of plants and animals.</p>	<ul style="list-style-type: none"> <li>● Activity sheet 7: Variation and Survival</li> </ul>
<p><b>1.4: Nature or Nurture—Traits in Animals and Plants</b>                  Session 6: How can we learn about how traits change over time?</p> <p><b>Session Goal:</b> Learn about fossils and how they contain information about plants and animals traits.</p>	<ul style="list-style-type: none"> <li>● Activity sheet 8: Fossil Stories</li> <li>● Fossil Set</li> </ul>
<p><b>1.4: Nature or Nurture—Traits in Animals and Plants</b>                  Session 7+: Dog / Horse Breed Research</p>	<ul style="list-style-type: none"> <li>● Activity sheet 9: Selective breeding project</li> </ul>

<p><b>Session Goal:</b> Learn and research about selective breeding.</p>	<ul style="list-style-type: none"> <li>• Activity sheet 10: Dog or horse breed details</li> </ul>
<p><b>1.5: Animal Communities</b> Session 1: Why do animals form groups?</p> <p><b>Session Goal:</b> Learn about animal groups.</p>	<ul style="list-style-type: none"> <li>• Activity sheet 1: Animal Groups</li> <li>• Activity sheet 2: Animal Group Questions</li> </ul>
<p><b>1.5: Animal Communities</b> Session 2: How do animals communicate by smell?</p> <p><b>Session Goal:</b> Explain how different senses are used for communication between group members.</p>	<ul style="list-style-type: none"> <li>• Activity sheet 3: Smelly communication</li> <li>• Cotton swabs</li> <li>• Pure extracts</li> </ul>
<p><b>1.5: Animal Communities</b> Session 3: How do animals communicate with sound?</p> <p><b>Session Goal:</b> Explain how different senses are used for communication between group members.</p>	<ul style="list-style-type: none"> <li>• Activity sheet 4: Sound communication</li> <li>• Activity sheet 5: Squawky sound cards</li> <li>• Duckbill noise makers</li> </ul>
<p><b>1.5: Animal Communities</b> Session 4: How do animals communicate by sight?</p> <p><b>Session Goal:</b> Explain how different senses are used for communication between group members.</p>	<ul style="list-style-type: none"> <li>• Activity sheet 6: communicating by sight</li> </ul>
<p><b>1.5: Animal Communities</b> Session 5+: Culminating Activity- Going Further</p> <p><b>Session Goal:</b> Research about group animals.</p>	<ul style="list-style-type: none"> <li>• Activity sheet 7: Going Further</li> </ul>
<p><b>1.6: Fossils Tell Stories of Prehistoric Life on Earth</b> Session 1: What is a fossil?</p> <p><b>Session Goal:</b> Explain what a fossil is.</p>	<ul style="list-style-type: none"> <li>• Prehistoric Actual Size Book (567 JEN) Maud library 1 copy</li> <li>• Fossil Set, Shells, Clay</li> <li>• Activity sheet 1: Footprint (homework)</li> </ul>
<p><b>1.6: Fossils Tell Stories of Prehistoric Life on Earth</b> Session 2: How are fossils formed?</p> <p><b>Session Goal:</b> Explain how fossils are formed.</p>	<ul style="list-style-type: none"> <li>• Activity sheet 1: from previous day for discussion/guessing game</li> <li>• Activity sheet 2: What</li> </ul>

	are fossils?
<p><b>1.6: Fossils Tell Stories of Prehistoric Life on Earth</b> Session 3: Where are fossils found? What does the location of specific kinds of fossils tell us about Earth's history before human beings were on Earth?</p> <p><b>Session Goal:</b> Develop an argument from evidence that Earth's environments/organisms have changed over millions of years.</p>	<ul style="list-style-type: none"><li>• Activity sheet 3: Fossils tell a story</li><li>• Geological Time Scale</li></ul>