Quinton Township School
First Grade
Science - Unit 2

Grade 1 Science Unit 2: Characteristics of Living Things **Key: Careers Technology Interdisciplinary Studies**

Unit Summary - Marking Period 3 21 Days
In this unit of study, students develop an understanding of how plants and animals use their external parts to help them survive, grow, and meet their needs, as well as how the behaviors of parents and offspring help offspring survive. The understanding that young plants and animals are like, but not exactly the same as, their parents is developed. The crosscutting concept of *patterns* is called out as an organizing concept for the disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in *obtaining, evaluating, and communicating information* and *constructing explanations*. Students are also expected to use these practices to demonstrate understanding of the core ideas.
Student Learning Objectives
Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated. (1-PS4-2) Plan and conduct investigations to determine the effect of placing objects made with different materials in the path of a beam of light. (1-PS4-3) Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. (1-PS4-1) Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance. (1-PS4-4) Make observations to construct an evidence-based account that objects can be seen only when illuminated. (1-PS4-2)

Objectives Aligned with National Geographic Resources: Approximate Time Frame: 21 days

Days 1-2

- **Identify plants as living things**
- **Know that plans have different parts that help them survive**

Days 3-4

- **Identify the parts of plants.**
- **Explain how roots, stems, and leaves help plants survive and grow.**

Days 5-6

- **Identify flowers and fruits as parts of many plants.**
- **Explain how flowers and fruits help these plants survive and grow.**

Day 7

- **Observe and describe how a plant responds to light.**

Days 8-9

- **Observe and describe how the roots of a plant respond to gravity.**

Days 10-11

- **Identify that adult plants can make new, young plants.**
- **Describe the stages of tomato plant's life cycle.**

Days 12-13

- **Identify that plants are very much, but not exactly like their parents.**
- **Observe that plants of the same kind are similar, but can also vary in many ways.**

Days 14-15

- **Identify that plants are very much, but not exactly, like their parents.**
- **Observe that plants of the same kind are similar, but can also vary in many ways.**

Days 16-17

- **Make and record observations to show that young plants are like, but not exactly like, their parents.**
- **Use evidence from their observations to explain that young plants are like, but not exactly like, their parents.**

Day 18

- **Connect concepts about animals and how they survive with the career of a conservationist.**

Day 19

- **Unit Review**

Days 20-21

- **Life Science Assessment**

Unit Sequence:

Part A: *How are young plants and animals alike and different from their parents?*	
Concepts	Formative Assessments

· **Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.** · **Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways.** · **Young animals are very much, but not exactly, like their parents. Plants also are very much, but not exactly, like their parents.**	*Students who understand the concepts can:* ● 1-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents. [Clarification Statement: Examples of patterns could include features plants or animals share. Examples of observations could include leaves from the same kind of plant are the same shape but can differ in size; and, a particular breed of dog looks like its parents but is not exactly the same.] [Assessment Boundary: Assessment does not include inheritance or animals that undergo metamorphosis or hybrids.] ● Exit Tickets ● Journal Responses ● End of Unit Assessment

Part B: *What types (patterns) of behavior can be observed among parents that help offspring survive?*	
Concepts	Formative Assessments

· **Scientists look for patterns and order when making observations about the world.** · **Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.** · **Adult plants and animals can have young.** · **In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring survive.**	*Students who understand the concepts can:* · **Observe and record how to use patterns in the natural world as evidence and to describe phenomena.** · **Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world.** · **Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. Examples of patterns of behaviors could include:** **The signals that offspring make, such as crying, cheeping, and other vocalizations.** **The responses of the parents, such as feeding, comforting, and protecting the offspring.** ● **Exit Tickets** ● **Journal Responses** ● **End of Unit Assessment**

Common Core State Standards/Learning Targets: This unit is based on 1-LS3-1 and 1-LS1-2, W.1.7, W.1.8, RI.1.1, MP.2, MP.5, 1-MD.A.1, 8.1, 8.2, 9.2.4.A.1, 9.2.4.A.3, 9.2.4.A.4

Modifications

(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 principals (http://www.cast.org/our-work/about-udl.html#.VXmoXcfD_UA).

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Analyzing and Interpreting Data · Analyze and interpret data to make sense of phenomena using logical reasoning. (3-LS3-1) **Obtaining, Evaluating, and Communicating Information** · Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world. (1-LS1-2) --- **Connections to Nature of Science** **Scientific Investigations Use a Variety of Methods** ● Science investigations begin with a question. (1-PS4-1) ● Scientists use different ways to study the world. (1-PS4-1)	**LS3.A: Inheritance of Traits** · Many characteristics of organisms are inherited from their parents. (3-LS3-1) **LS1.B: Growth and Development of Organisms** · Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. (1-LS1-2)	**Patterns** ● Similarities and differences in patterns can be used to sort and classify natural phenomena. (3-LS3-1) ● Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence. (1-LS1-2) ***Connections to Nature of Science*** **Scientific Knowledge is Based on Empirical Evidence** ● Scientists look for patterns and order when making observations about the world. (1-LS1-2)