Grade 1 Unit 3 Animal and Plants Traits and Survival

Content Area: **Science**
Course(s): **Science 1**
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Unit Overview

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.

NJ Student Learning Standards - Science

SCI.1.1-LS1-1	Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.
SCI.1.1-LS1-2	Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.
SCI.1.1-LS3-1	Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
SCI.K-2.K-2-ETS1-1	Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
SCI.K-2.K-2-ETS1-3	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
SCI.K-2.K-2-ETS1-2	Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

Disciplinary Core Ideas

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)

LS3.A: Inheritance of Traits

Young animals are very much, but not exactly like, their parents. Plants also are very much, but not exactly, like their parents. (1-LS3-1)

LS3.B: Variation of Traits

Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways. (1-LS3-1)

Science and Engineering Practices

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)

Constructing Explanations and Designing Solutions

Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. (1-LS3-1)

Crosscutting Concepts

Patterns

Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence. (1-LS1-2, 1-LS3-1)

Scientific Knowledge is Based on Empirical Evidence

Scientists look for patterns and order when making observations about the world. (1-LS1-2)

Learning Targets (Student Language)

- I can compare and contrast how young plants or animals are alike but not exactly like their parents
- I can compare and contrast how young plants or animals are alike but not exactly like their parents.
- I can design a solution to mimic how plants and animals survive.
- I can design a solution to mimic how plants and animals survive.

- I can determine patterns of behavior in parents and offspring that help them survive.

Essential Questions

How are young plants and animals alike and different from their parents?

Why and how do young plants and animals vary in how they look, function, and behave?

What types (patterns) of behavior can be observed among parents that help offspring survive?

- How are young plants and animals alike and different from their parents.
- What types (patterns) of behavior can be observed among parents that help offspring?
- Why and how do young plants and animals vary in how they look, function, and behave?

Materials and Resources

- Mystery Science Lessons
- Read Alouds
- Cross Cut Weather Reading Activities
- Mystery Labs
- Additional Hands on Activities

Assessments

- Exit Ticket
- Individual and Group Participation
- Mystery Science Animal SuperPowers Lesson 1 Assessment
- Mystery Science Animal SuperPowers Lesson 3 Assessment
- Mystery Science Animal SuperPowers Lesson 5 Assessment
- Mystery Science Formative Assessments
- Mystery Science Performance Task
- Mystery Science Summative Assessments
- Student Projects and Models
- Teacher Observation
- Test and Quizes

Learning Plan (Pacing Guide)

Topic	# of Days (30 min Sessions)	Student Learning Targets (Objective
Anchor Phenomenon: Squirrel Secrets	1	
Lesson 1: How can you help a lost baby animal find its parents?	4	
Lesson 2: Why do birds have beaks?	4	
Read-Along Lesson 3: Why do baby ducks follow their mother?	3	Analyze and interpret data to provide from parents and that variation of the [Clarification Statement: Patterns are between offspring and their parents, than humans.] [Assessment Boundary of inheritance and prediction of traits LS3-1)
Lesson 4: Why are polar bears white?	4	
Read-Along Lesson 5: Why do family members look alike? Read-Along	3	Read texts and use media to determir help offspring survive. [Clarification include the signals that offspring mak and the responses of the parents (such offspring).] (1-LS1-2)
Performance Task: How do animals take care of their babies?	1	
Anchor Phenomenon: Unidentified Floating Objects	1	
Lesson 1: What will a baby plant look like when	4	

it grows up?		
Lesson 2: Why don't trees blow down in the wind?	4	
Read-Along Lesson 3: What do sunflowers do when you're not looking?	3	
Performance Task: What are the tiniest water lily leaves?	1	

Interdisciplinary Connections

NJSLS ELA

- W.K.7 Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-ESS2-1)
- RI.K.1 With prompting and support, ask and answer questions about key details in a text. (K-ESS3-2)
- SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-ESS3-2)
- RI.2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. (K-2-ETS1-1)
- W.2.6 With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. (K-2-ETS1-1)
- W.2.8 Recall information from experiences or gather information from provided sources to answer a question. (K-2-ETS1-1)

NJSLS Mathematics

- MP.2 Reason abstractly and quantitatively. (K-ESS2-1, K-2-ETS1-1)
- MP.4 Model with mathematics. (K-ESS2-1, K-2-ETS1-1)
- MP.5 Use appropriate tools strategically. (K-2-ETS1-1)

- 2.MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. (K-2-ETS1-1)
- K.CC.A Know number names and the count sequence. (K-ESS2-1)
- K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-ESS2-1)
- K.MD.B.3 Classify objects into given categories; count the number of objects in each category and sort the categories by count. (K-ESS2-1)

English Language Arts

With the teachers' support, the students collectively research and write about how people predict the weather. The students listen to non-fiction stories about the weather and how people describe weather (rainy, sunny, cloudy, cool, warm, etc.). With prompting and support, the students ask and answer questions about key details in the text. Students get information and help each other clarify their thinking as part of the activities. Students demonstrate their understanding of the texts by being able to orally answer such questions as who, what, where, when, why, and how. With guidance and support from adults and in collaboration with peers, students use digital tools to produce and publish writing about the patterns that they see in their weather observations. Throughout the school year, students recall information from experiences or gather information from provided sources to answer a question. (K-2-ETS1-1) W.2.8

Mathematics

With adult support, students measure and record various types of weather (e.g., rainfall or snow amounts, relative temperature at different times of the day and over a period of time). They mathematically represent real-world information by organizing their data into simple weather charts and graphs. Kindergarteners attend to the meaning of various quantities using a variety of units of measure and use counting to analyze data and determine patterns in charts and graphs. By using media resources, students explore how weather scientists represent real-world weather data with picture representations, charts, and graphs. They can use this information to think about how weather scientists use tools to collect and record weather data in order to determine patterns of change. Students will learn the meaning of various quantities used in simple weather charts and graphs, both from classroom observations and from media sources, by counting and comparing severe weather data with daily weather data (e.g., relative amounts of rainfall, snowfall). By analyzing data from weather graphs and charts, young students begin to understand how severe weather affects people and communities and that weather scientists play an important role in predicting severe weather conditions.

Accommodations and Modifications (Interventions. Special Education, ELL, Enrichment)

- Collaborate with after-school programs or clubs to extend learning opportunities.
- Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understanding.
- Follow all modifications and accommodations as outlined in IEPs and 504s.
- Provide ELL students with multiple literacy strategies.

- Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g.
- Provide opportunities for students to connect with people of similar backgrounds (e.g. conversations via digital tools such as Zoom/Google Meets, experts from the community helping with a project, journal articles, and biographies).
- 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).
- Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community.
- Structure the learning around explaining or solving a social or community-based issue.
- Use project-based science learning to connect science with observable phenomena.

Career Reading, Life Literacies, and Key Skills

TECH.9.4.2.CI.1	Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).
TECH.9.4.2.CI.2	Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a).
TECH.9.4.2.CT.1	Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem (e.g., K-2-ETS1-1, 6.3.2.GeoGI.2).
TECH.9.4.2.CT.2	Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3).
TECH.9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
TECH.9.4.2.IML.3	Use a variety of sources including multimedia sources to find information about topics such as climate change, with guidance and support from adults (e.g., 6.3.2.GeoGI.2, 6.1.2.HistorySE.3, W.2.6, 1-LSI-2).