Unit 3: Plants and Animals

Content Area: **Science**
Course(s):
Time Period: **Trimester 3**
Length: **10-12 weeks**
Status: **Published**

Summary

This module engages students with the anchor phenomenon that young plants and animals (offspring) have structures and behaviors that help them grow and survive. Students observe firsthand the structures of plants and discover ways to propagate new plants from mature plants (from seeds, bulbs, roots, and stem cuttings). They observe and describe changes that occur as young plants grow, and compare classroom plants to those in the schoolyard. They design terrariums (habitat systems) and provide for the needs of both plants and animals living together in the classroom. Students explore the phenomenon of variation in the same kind of organism, including variation between young and adults. They learn about the behaviors of parents to help their young (offspring) survive, and they explore structure and function relationships as they sort different kinds of animal and plant structures. They use that understanding of structure and function, including animal sensory structures, to invent solutions to human problems.

Revision Date: July 2020

Standards

P.4	Demonstrate creativity and innovation.
P.5	Utilize critical thinking to make sense of problems and persevere in solving them.
P.8	Use technology to enhance productivity increase collaboration and communicate effectively.
P.9	Work productively in teams while using cultural/global competence.
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.
ETS1.B	Developing Possible Solutions
LA.RI.1.1	Ask and answer questions about key details in a text.
LA.RI.1.2	Identify the main topic and retell key details of a text.
LA.RI.1.3	Describe the connection between two individuals, events, ideas, or pieces of information in a text.
LA.RI.1.4	Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.
LA.RI.1.5	Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.
LA.RI.1.6	Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.

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.
LS1.A	Structure and Function
LS1.D	Information Processing
1-LS1-2	Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.
LS1.B	Growth and Development of Organisms
1-LS3-1	Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
LS3.A	Inheritance of Traits
LS3.B	Variation of Traits
LA.SL.1.1	Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.
LA.SL.1.2	Ask and answer questions about key details in a text read aloud or information presented orally or through other media.
LA.SL.1.3	Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.
LA.SL.1.4	Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.
LA.SL.1.5	Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
LA.SL.1.6	Produce complete sentences when appropriate to task and situation.

Essential Questions/Enduring Understandings

- What do plants and animals need to survive, grow and meet their needs?
- How does behavior of parent help offspring survive?
- What structures or behaviors do plants and animals have that help them live in their habitat?
- How are parents of plants and animals similar to their young but not exactly the same?

Objectives

Students will know…..

- Plants and animals are living things with basic needs
- Plants need water, light, and nutrients to survive
- The parts of a plant
- Plants grow in different ways
- Plants and animals vary
- How to propagate a plant from a stem cutting
- How to propagate a plant from a modified root or bulb
- Animals need food, water, and shelter

- There are many different habitats and certain animals live in each of these habitats
- Animals can adapt their structures and behaviors to better survive in their environment
- Animals teach their offspring behaviors to help them survive

Students will be skilled at…..

- Asking questions and defining problems
- Developing and using models
- Planning and carrying out investigations
- Making observations
- Analyzing and interpreting data
- Using mathematics and computational thinking
- Constructing explanations and designing solutions
- Engaging in argument from evidence
- Obtaining, evaluating and communicating information

Learning Plan

- Preview the essential questions and connect learning throughout the unit
- Gain students understanding and prior knowledge of plants and animals
- Maintain a KWL chart
- Read literature about plants
- Read literature about animals and habitats
- Utilize FOSS kit with materials: Plants and Animals
- Introduce key vocabulary:
    - Plant Vocabulary: bud, cutting, eye, function, leaf, light, node, nutrient, plant, potato, root, seed, soil, sprout, stem, structure, tuber, variation
    - Animal Vocabulary: behavior, desert, forest, grassland, habitat, ocean, offspring, parent, pond, predator, rain forest, shelter, survive, terrarium, tundra
- Grow various seeds and observe their growth over time
- Go on a nature walk outside and observe the different plants that can be found
- Propagate new plants from stems of houseplants and modified stems (potatoes) to explore growing new plants from old ones
- Design and set up terrariums using seed and plants that will be home to isopods
- Observe isopods and how they interact with their habitat
- Take virtual field trips to explore habitats and the animals that live there
- Use media to learn about the behavior of animals and their young and how these behaviors help the young survive
- Maintain observational journals with student note-taking and drawings of experiments and activities
- Incorporate literature on sound and light through shared reading, big books, and nonfiction books from classroom libraries

Assessment

Students will be assessed through a variety of methods. Teacher will use various types of assessments to gauge student understanding. Students will be required to have understanding and mastery of the following key concepts:

Formative Assessments: Teacher observation, student responses during lessons

Summative Assessments: Foss investigation checklists, science notebook (see focus questions below)

Benchmark Assessments: Investigation I-Checks (see focus questions below), science notebook (see focus questions below)

Alternative Assessments: Oral presentations or student-produced projects that further explore focus questions below. Students can also investigate a particular habitat, animals that live in that habitat, and animal adaptations.

- Investigation 1.1 FQ: What happens to rye grass and alfalfa seeds in moist soil?
- Investigation 1.2 FQ: What happens to the grass and alfalfa plants after we mow them?
- Investigation 1.3 FQ: How does a wheat seed grow?
- Investigation 1.4 FQ: How many different kinds of plants live in your area of the schoolyard?
- Investigation 2.1 FQ: How can we make a new plant from an old one?
- Investigation 2.2 FQ: What grows from the nodes of a potato?
- Investigation 2.3 FQ: How do we keep our cuttings alive?
- Investigation 3.1 FQ: What do plants need to live and grow in a terrarium?
- Investigation 3.2 FQ: What do animals need to live in a terrarium?
- Investigation 3.3 FQ: What structures or behaviors do plants or animals have that help them live in their habitats?
- Investigation 3.4 FQ: How do the behaviors of squirrels help them survive in the winter?
- Investigation 4.1 FQ: How does a bulb grow? (Optional)
- Investigation 4.2 FQ: What parts of a parent plant can grow new plants? (Optional)
- Investigation 4.3 FQ: How do the plants in the schoolyard compare to the plants studied in class? What do animal parents do to help their young survive?

Materials

Core Book List

FOSS Kit: Plants and Animals

Potting soil

Flower Pots

Plants and potatoes to propagate

Isopods

Terrariums

BrainPop Junior

Discovery Education

Mystery Doug

Science notebook for assessment and journaling

Scholastic News if applicable

The Magic School Bus

- Season 1 Episode 5: Hops Home (Habitats)
- Season 1 Episode 7: All Dried up (Desert Adaptation)
- Season 1 Episode 11: Goes to Seed (Seeds)
- Season 2 Episode 4: Going Batty (Bats- discusses the adaptation of echolocation)
- Season 2 Episode 12: Cold Feet (Warm Blooded/ Cold Blooded)
- Season 3 Episode 8: Goes Upstream (Migration)
- Season 3 Episode 10: Gets Planted (Photosynthesis)
- Season 3 Episode 11: In the Rainforest (Rainforest Ecology)
- Season 4 Episode 5: Gets Swamped (Wetland habitats)
- Season 4 Episode 13: Takes a Dive (Coral Reefs)

Available Shared Reading F&P Classroom: (F=Fiction, NF=Nonfiction, H=Hybrid)

- Animal Surprises (NF)
- Bigger and Bigger and Bigger (NF)
- The Cactus Hotel (NF)
- The Elephant (NF)
- The Flamingo (NF)
- Food Store in the Woods (NF)

Garden Helpers (NF)

The Giraffe (NF)

The Hippo (NF)

How Animals Eat (NF)

Not Ladybugs! (NF)

The Sweet Mango Tree (NF)

Ripples in the Sea (H)

Zip, Zip, Zip (NF)

Available Interactive ReadAloud F&P Classroom: (F=Fiction, NF=Nonfiction, H=Hybrid)

Animals: Black and White (NF)

Bat Loves the Night (NF)

Big Blue Whale (NF)

The Dandelion Seed (F)

Dolphin Baby (H)

From Seed to Plant (NF)

Ice Bear (NF)

Just Ducks (H)

The Last Polar Bear (F)

On Kiki's Reef (F)

One Tiny Turtle (H)

Plant Packages: A Book About Seeds (NF)

Sea Turtles (NF)

Surprising Sharks (NF)

This Year's Garden (F)