Unit 3: Insects and Plants

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

Summary

In this unit, Students build on their understanding of growth and development of plants and animals by observing new organisms over time. Students see the life cycles of insects unfold in real time and compare the structures and functions exhibited by each species to reveal patterns. They gain experience with the ways that plants and insects interact in feeding relationships, pollination, and seed dispersal. students develop an understanding of what plants need to grow and how plants depend on animals for seed dispersal and pollination. Students also compare the diversity of life in different habitats.

Revision Date: July 2020

Standards

9.1.2.CAP	Career Awareness and Planning
	Different types of jobs require different knowledge and skills.
K-2-ETS1-1	Ask questions, make observations, and gather information about a situation people want to change (e.g., climate change) to define a simple problem that can be solved through the development of a new or improved object or tool.
9.1.2.CAP.1	Make a list of different types of jobs and describe the skills associated with each job.
	Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.
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).
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.
	Individuals should practice safe behaviors when using the Internet.
LA.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.
LA.RI.2.2	Identify the main topic of a multiparagraph text as well as the focus of specific paragraphs within the text.
LA.RI.2.3	Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.
LA.RI.2.7	Explain how specific illustrations and images (e.g., a diagram showing how a machine works) contribute to and clarify a text.
LA.RI.2.8	Describe and identify the logical connections of how reasons support specific points the author makes in a text.

LA.RI.2.9	Compare and contrast the most important points presented by two texts on the same topic.
LA.RI.2.10	Read and comprehend informational texts, including history/social studies, science, and technical texts, at grade level text complexity proficiently with scaffolding as needed.
9.4.2.TL	Technology Literacy
2-LS2	Ecosystems: Interactions, Energy, and Dynamics
2-LS2-1	Plan and conduct an investigation to determine if plants need sunlight and water to grow.
LS2.A	Interdependent Relationships in Ecosystems
2-LS2-2	Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.
ETS1.B	Developing Possible Solutions
2-LS4-1	Make observations of plants and animals to compare the diversity of life in different habitats.
LS4.D	Biodiversity and Humans
CRP.K-12.CRP1	Act as a responsible and contributing citizen and employee.
CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP4	Communicate clearly and effectively and with reason.
CRP.K-12.CRP5	Consider the environmental, social and economic impacts of decisions.
CRP.K-12.CRP6	Demonstrate creativity and innovation.
TECH.8.1.2.A	Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations
TECH.8.1.2.B	Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.
TECH.8.1.2.C	Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.
TECH.8.1.2.D	Digital Citizenship: Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.
TECH.8.1.2.E	Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.
TECH.8.1.2.F	Critical thinking, problem solving, and decision making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.
TECH.8.2.2	Technology Education, Engineering, Design, and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

Essential Questions/Enduring Understandings

- How does climate change effect habitats and diversity ?
- How does the diversity of plants and animals compare among different habitats?
- What do plants need to live and grow?
- What is the natural history of some plants and animals in different habitats?

- Why do we see different living things in different habitats?

Objectives

Students will know…..

- Plants depend on water and light to grow
- Plants depend on animals for pollination or to move their seeds around.
- There are many different kinds of living things in any area, and they exist in different places on land and in water.
- Animals adapt to different environments and what they need to survive.

Students will be skilled at…..

- Asking questions and defining problems
- Developing and using models
- Planning and carrying out investigations
- 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 living things (plants, animals, insects)
- Read literature on types of living things (plants, animals, insects)
- Sort pictures of types of living things
- Create charts on types of living things
- Utilize FOSS kit with materials: Insects and Plants
- Students use media and research techniques to gather information on plants and animals in their habitats
- Students compare and contrast animals and their adaptations within habitats.
- Students recognize and observe the different species of animals
- Students understand and observe the food chain of different animals
- Students observe how animals interact with their environment and learn what they need to survive.
- Students study the natural history of a flowering plant
- Students use media and research techniques to gather information on insects
- Students take a schoolyard trip to observe insects and other small animals in their habitat
- Students observe life cycles of different insects, structure and behavior
- Students learn how silkworms produce silk
- Students take a schoolyard trip to observe plants being eaten by insects
- Maintain observational journals with student note taking and drawings of experiments and

activities
- Incorporate literature on insects and plants through shared reading, big books, and nonfiction books from classroom libraries

Assessment

Science courses are designed to promote skill attainment. Student progression and pace through which they proceed through the performance tasks is based on their affinity for and ability to reach skill attainment. The teacher will determine formative and summative skill attainment; alternative assessments will be incorporated for each student based on their strengths and challenges.

Formative Assessments: Teacher observation, student responses during lessons,

Summative Assessments: Foss investigation checklists, science notebook

Benchmark Assessments: Investigation IChecks, science notebook

- Investigation 1.1 FQ- What do mealworms need to live?
- Investigation 1.2 FQ: What do mealworms need to live?
- Investigation 1.3 FQ: What are the stages of a beetle's life cycle?
- Investigation 2.1 FQ: How did we plant the brassica seeds?
- Investigation 2.2: Icheck and FQ-How does a young plant change as it grows?
- Investigation 2.3: Icheck and FQ-What will happen to the flowers on the brassica plants?
- Investigation 3.1: FQ- What are the yellow objects and how do they change over time?
- Investigation 3.2 Icheck and FQ- What do milkweed bugs need in their habitat?
- Investigation 3.3 Icheck and FQ-How do milkweed bugs grow and change?
- Investigation 4.1: FQ- What do silkworms need to live?
- Investigation 4.2: Icheck and FQ- How does a silkworm compare to a mealworm?
- Investigation 4.3 Icheck and FQ- What is the life cycle of the silkworm?
- Investigation 4.4: Icheck and FQ- What evidence is there that insects are eating plants in the schoolyard?
- Investigation 5.1: Icheck and FQ- What do caterpillars do?
- Investigation 5.2: FQ- How is a painted lady pupa different from a silkworm pupa?
- Investigation 5.3: Icheck and FQ- What is the life cycle of a painted lady butterfly?

Alternative Assessments: Oral presentations, student produced projects

Materials

Core Book List
FOSS Kit: Insects and Plants and materials for experimentation and exploration
BrainPop Junior
Discovery Education
Mystery Doug
PebbleGo
Science notebook for assessment and journaling
Science spin, weekly reader magazine if applicable

F&P Shared Reading Books:

- Fur, Feathers, and More
- Paws and Claws
- Inside a Cow
- Night of the Ghost Crabs
- The Amazing Seahorse
- The Perfect Beak
- Big Bites
- Eaglets in the Nest
- Busy Beavers
- Amazing Nests
- Bigger or Smaller?
- Rain Forest Surprises
- Surprises on a Coral Reef
- Animals with Jobs
- Surprises on the Savanna

F&P Interactive Read Alouds:

- Exploring the Natural World: Insects
- Bugs A to Z
- The Bugliest Bug
- Bugs for Lunch
- When Lightning Comes in a Jar
- Salmon Stream
- Think of an Eel
- Seymour Simon: A Scientific Eye
- Frogs
- Dolphins
- Penguins
- Dogs
- Cats