Marietta City Schools

District Unit Planner

Grade 2 Science

Theme	*Unit 4 Stability and Change in Plants and Animals Planner*	**Unit duration**	*6 weeks*

Mastering Content and Skills through INQUIRY (Establishing the purpose of the Unit): *What will students learn?*

GaDoE Standards/3D Science Elements

S2L1. Obtain, evaluate, and communicate information about the life cycles of different living organisms.
a. Ask questions to determine the sequence of the life cycle of common animals in your area: a mammal such as a cat, dog or classroom pet, a bird such as a chicken, an amphibian such as a frog, and an insect such as a butterfly.
b. Plan and carry out an investigation of the life cycle of a plant by growing a plant from a seed and by recording changes over a period of time.
c. Construct an explanation of an animal's role in dispersing seeds or in the pollination of plants.
d. Develop models to illustrate the unique and diverse life cycles of organisms other than humans.

S2E3. Obtain, evaluate, and communicate information about how weather, plants, animals, and humans cause changes to the environment.
(Clarification statement: Changes should be easily observable and could be seen on school grounds or at home.)
a. Ask questions to obtain information about major changes to the environment in your community.
b. Construct an explanation of the causes and effects of a change to the environment in your community.

Unit Objectives:
Students should understand the interactions that living organisms have that benefit each other; additionally, to comprehend how living things impact the environment.
Students will demonstrate understanding of life cycles by drawing a model.
Students will be able to explain how plants are pollinated.
Students will understand an animal's role in seed dispersal.
Students will demonstrate understanding causes and effects of environmental change in their community.

Unit Phenomena:
S2L1 Phenomena: Animal bodies collect and transfer pollen from one flower to another. Animals and plants have relationships that benefit each other.
Relationships of animals PowerPoint

Discovery Education Science Techbook video clip – Life Cycles
Discovery Education Science Techbook video clip – What is a Life Cycle?
After showing the video clip or image, ask students what they notice and wonder. Record their thoughts on a T- chart and refer back to the chart throughout the unit.

S2E3 Phenomenon:
Discovery Education Science Techbook – Seasons of the Year unit/Engage page. Show this image to students and ask what they notice and wonder. Record their ideas on a T-chart.

Page Keeley Probes: : These probes can be used as phenomena. They are intended to elicit student understanding about science concepts. Starting a unit or lesson with a probe will help you uncover misconceptions and see what students already know about a topic. Using a probe at the beginning of a lesson and then at the end of the lesson serves the purposes of pretesting and then formatively evaluating student thinking. **Below is a list of probes from Page Keeley's book Uncovering Student Ideas in Primary Science, that are appropriate for this unit.** This book has been purchased for your grade level by the Office of Academic Achievement.
• **Big and Small Seeds**

Science & Engineering Practices:	**Disciplinary Core Ideas:**	**Crosscutting Concepts:**
• Asking questions and defining problems • Planning and carrying out investigations • Developing and using models • Obtaining, evaluating, and communicating information • Constructing explanations and designing solutions	· Plants and the function of their structures · Life cycles of plants and animals · Pollination of plants by animals · Changes in habitat and its effects on plants and animals · Plants and animals can change their environment. · Plants and animals (including humans) can change their environment (eg. the shape of the land, the flow of water.) · Humans can impact the environment.	• Patterns • Cause and Effect • Stability and Change

Misconceptions:
· Only some organisms, such as insects with complete metamorphosis, have a life cycle.

- Living/Non-living Plants, fungi, and coral that are stationary are not living Plants and Fungi are not living organisms.
- Plants that shed their leaves are dead but come to life again in spring.
- Commercial seeds are manufactured.
- Roots obtain food for the plant from the soil.
- Animals Only large land mammals are animals. Humans are not animals.
- Fungi/Microscopic life Organisms seen through a microscope are not living.

Math/ELA Connections/STEM Connections
ELAGSE2RI1: Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
ELAGSE2RI5: Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.
ELAGSE2RI6: Identify the main purpose of a text, including what the author wants to answer, explain, or describe. ELAGSE2RI7: Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text.
ELAGSE2RI8: Describe how reasons support specific points the author makes in a text.
ELAGSE2W2: Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.
ELAGSE2W7: Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).
ELAGSE2W8: Recall information from experiences or gather information from provided sources to answer a question.
ELAGSE2SL1: Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
ELAGSE2SL2: Recount or describe key ideas or details from written texts read aloud or information presented orally or through other media.
ELAGSE2L4: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 2 reading and content, choosing flexibly from an array of strategies. a. Use sentence-level context as a clue to the meaning of a word or phrase. c. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., addition, additional). e. Use glossaries and beginning dictionaries, both print and digital, to determine or clarify the meaning of words and phrases.
MGSE2.MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
MGSE2.MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.
MGSE2.MD.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.

STEM:
Create a hand pollinator lesson
STEM in Action: Designing a Safe Environment
STEM Project Starter: Saving Earth One Classroom at a time

Discovery Education Science Techbook Resources: *(You will need to be logged into your Discovery Education account using your Google credentials to access these links*) You will find station rotation activities such as leveled reading passages, interactives, hands-on labs, virtual labs, video clips, and more on the Explore page of each Techbook unit.

Animal Life Cycles
Plant Life Cycles
Seasons of the Year
Animals Fundamental
Chicken Life Cycle Skill Builder

Frog Life Cycle Skill Builder
Earth's Resources Fundamental
Too Polite to Pollute Reading Passage

Hands-on Activities
Hands-On Activity: Conserving Natural Resources by Recycling
Hands-On Activity: Environmental Resource Detective
Hands-On Activity: Reduce, Recycle Reuse, or Throw Away?
Sorting and Classifying Hands-On Activity: Make a Bird Feeder
Hands-On Activity: Insect Round-Up
Hands-On Activity: Butterfly Pasta Life Cycle
Hands-On Activity: What I'll Look Like

More Resources:
Monarch Watch – this website has everything you need to know about monarchs.
Kids Gardening – lesson plans and great garden activities

Essential Questions

Factual—
What are some characteristics of an animal's life cycle?
What are some characteristics of a plant's life cycle?

Inferential—
What roles do animals play in pollination?

Critical Thinking-
How do humans positively and negatively affect pollination?

Tier II Words- High Frequency Multiple Meaning	**Tier III Words-** Subject/ Content Related Words
plants, animals, seeds, environment, fruits, flowers, leaves	roots, stems, pollen, life cycle, pollination, disperse

Assessments

Constructed Response: Animal Life Cycles
Constructed Response: Plant Life Cycles
STEM in Action: Botanist

Below is a link for an anticipation guide. Please use this as a pre and post assessment for your students. It is a word document and can be edited to fit the needs of your students.

Anticipation Guide

Objective or Content	Learning Experiences	Differentiation Considerations
CLE 1: S2L1. Obtain, evaluate, and communicate information about the life cycles of different living organisms. S2E3. Obtain, evaluate, and communicate information about how weather, plants, animals, and humans cause changes to the environment.	GaDOE Plants, Animals, Environment Instructional Segment In this Georgia DOE lesson, students will explore plant and animal life cycles. Students will understand how plants and animals interact in the dispersing of seeds and the pollination of plants. Students will explore how weather, plants, animals, and humans cause changes to their environment. Environmental Slides Dissect a Seed Student Investigation Plant Life Cycles PBS Investigation	Student Choice Performance Tasks Reflection and Goal Setting Learning Stations Choice Boards Formative Probes Science Journaling Multi-sensory activities Assistive Technology Flexible Grouping Multiple Means of Representation
Recommended High Quality Complex Text By Lexile Band		
Animal Life Cycles by Growing and Changing By Bobbie Kalman *Plant Life Cycles* by Julie Lundgren *Explore Life Cycles* By Kathleen M. Reilly *The Life Cycle of a Frog* By Bobbie Kalman *The Life Cycle of a Butterfly* By Colleen Sexton		