2 Science Unit 3: Plant Growth & Interactions (Plant Adventures)

Content Area: **Science**
Course(s):
Time Period: **Marking Period 4**
Length: **9 Weeks**
Status: **Published**

Unit Overview

In this unit, students continue to explore the needs of plants through hands-on investigations. They explore why and how plants disperse their seeds, what those seeds need in order to grow, and what the adult plants need in order to survive and thrive.

Standards

Scientific & Engineering Practices

- Students model seed dispersal by creating three different seed flyers. They investigate how each seed flyers' structure helps the seed disperse.
- Students plan and carry out an investigation to determine how light affects plant growth. They grow some radish seeds in light conditions and some radish seeds in dark conditions and then analyze their data through close observations of the plants after several days.
- Students make a Grass Head and conduct an investigation to determine the sun's impact on the direction plants grow. Analyzing data, students predict growth patterns of plants.
- Students analyze the data from their Grass Head in Lesson 3. They compare their growth pattern prediction with the actual results to determine if the grass grew in the direction of the sunlight.
- Students engage in a model simulation of a farm with different growing conditions in different areas of the farm. Students consider the needs of a plant in order to determine where it will grow best.

Crosscutting Concepts

- Students explore how the structure of a seed helps it disperse (function).
- Students observe the effects of plants grown in the dark and in the light. They observe that when plants are grown in the dark, it causes them to be less healthy (and eventually those plants cannot survive).
- Students consider the effect sunlight has on plant growth. Students analyze the role of the leaves (structure) in helping the plant capture sunlight (function).
- Students consider the cause and effect relationship between a plant's needs and the habitat it survives best in. Students consider how plants have structures that help them survive in their

environment (function).

- Students consider the cause and effect relationship between a plant's needs and the habitat it survives best in.

2-LS2-1	Plan and conduct an investigation to determine if plants need sunlight and water to grow.
2-LS2-2	Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.
2-LS4-1	Make observations of plants and animals to compare the diversity of life in different habitats.
2-ESS2-3	Obtain information to identify where water is found on Earth and that it can be solid or liquid.

Materials

Core Materials:

- Mystery Science
    - How did a tree travel halfway around the world?
    - Could a plant survive without light?
    - Why do trees grow so tall?
    - Should you water a cactus?
    - Where do plants grow best?
- Teacher Created Labs

Supplemental Materials:

- BrainPop resources
- NewsELA
- GRC Lessons
- TBSAID
- Nearpod Activities

Technology

Technology Literacy

• 9.4.2.TL.1: Identify the basic features of a digital tool and explain the purpose of the tool (e.g., 8.2.2.ED.1).

• 9.4.2.TL.2: Create a document using a word processing application.

• 9.4.2.TL.3: Enter information into a spreadsheet and sort the information.

• 9.4.2.TL.4: Navigate a virtual space to build context and describe the visual content.

• 9.4.2.TL.5: Describe the difference between real and virtual experiences.

• 9.4.2.TL.6: Illustrate and communicate ideas and stories using multiple digital tools (e.g., SL.2.5.).

Technology - Data & Analysis

8.1.2.DA.1: Collect and present data, including climate change data, in various visual formats.

• 8.1.2.DA.3: Identify and describe patterns in data visualizations.

• 8.1.2.DA.4: Make predictions based on data using charts or graphs.

Technology - Effects on the Natural World

• 8.2.2.ETW.1: Classify products as resulting from nature or produced as a result of technology.

• 8.2.2.ETW.2: Identify the natural resources needed to create a product.

• 8.2.2.ETW.3: Describe or model the system used for recycling technology.

• 8.2.2.ETW.4: Explain how the disposal of or reusing a product affects the local and global

Evidence of Learning/Assessment

Formative Assessment

- Teacher Observation
- Quizzes
- Exit Tickets
- Labs

Summative Assessment

- Benchmark Tests
- Alternative Assessments: Performance Tasks & Projects

Accommodations & Modifications

Special Education

Follow IEP Plan which may contain some of the following examples…

- In class/pull out support with special ed teacher
- Additional time during intervention time
- Preferred seating
- Questions read aloud

- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Study Guides
- Limit number of questions
- Scribe
- Newsela leveled reading passages

504

Follow 504 Plan which may contain some of the following examples…

- In class/pull out support with special ed teacher
- Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Study Guides
- Limit number of questions
- Scribe
- Newsela leveled reading passages

ELL

- Translation device/dictionary
- In class/pull out support with ESL teacher
- In class/pull out support with special ed teacher
- Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Study Guides
- Limit number of questions
- Scribe
- Newsela leveled reading passages

At-risk of Failure

- Extra time during intervention
- In class/pull out support with special ed teacher
- Additional time during intervention time
- Preferred seating

- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Study Guides
- Limit number of questions
- Scribe
- Newsela leveled reading passage

Gifted & Talented

- Independent projects
- STEM Projects
- Leveled Reading with Newsela

Interdisciplinary Connections

Connections to NJSLS - English Language Arts

- W.2.7 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). (2-LS2-1)
- W.2.8 Recall information from experiences or gather information from provided sources to answer a question. (2-LS2-1)
- SL.2.5 Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. (2-LS2-2)

Connections to NJSLS – Mathematics

- MP.2 Reason abstractly and quantitatively. (2-LS2-1)
- MP.4 Model with mathematics. (2-LS2-1), (2-LS2-2)
- MP.5 Use appropriate tools strategically. (2-LS2-1)
- 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. (2-LS2-2)

Career Readiness, Life Literacies, and Key Skills

Critical Thinking and Problem Solving:

• 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).

• 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).

• 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

Career Ready Practices

- CRP6. Demonstrate creativity and innovation.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.