Unit 1: Trees and Weather

Content Area: **Science**
Course(s):
Time Period: **Trimester 1**
Length: **10-12 Weeks**
Status: **Published**

Summary of Unit

The Trees and Weather Module provides students with solid experiences to help them develop an understanding of what plants (and animals) need to survive and the relationship between their needs and where they live. By monitoring local weather, students experience the patterns and variations in weather and come to understand the importance of weather forecasts to prepare for severe weather. Throughout the module, students engage in science and engineering practices by asking questions, participating in collaborative investigations, observing, recording, and interpreting data to build explanations, and obtaining information from photographs. Students gain experiences that will contribute to an understanding of the crosscutting concepts of patterns; cause and effect; scale, proportion, and quantity; systems and system models; structure and function; and stability and change.

This unit follows a design that includes active investigation including; outdoor experiences, recording in science notebooks to answer focus questions, reading science resources through read alouds and shared reading and assessment to monitor progress and motivate student reflection on learning.

Revision Date: July 2020

Standards

P.1	Act as a responsible and contributing community members and employee.
9.1.2.CAP	Career Awareness and Planning
P.3	Consider the environmental, social and economic impacts of decisions.
9.1.2.CAP.1	Make a list of different types of jobs and describe the skills associated with each job.
P.4	Demonstrate creativity and innovation.
P.6	Model integrity, ethical leadership and effective management.
NI	Networks and the Internet
P.8	Use technology to enhance productivity increase collaboration and communicate effectively.
LA.RI.K.1	With prompting and support, ask and answer questions about key details in a text.
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.
LA.RI.K.2	With prompting and support, identify the main topic and retell key details of a text.
LA.RI.K.3	With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.
LA.RI.K.4	With prompting and support, ask and answer questions about unknown words in a text.
LA.RI.K.5	Identify the front cover, back cover, and title page of a book.
K-PS3-1	Make observations to determine the effect of sunlight on Earth's surface.
PS3.B	Conservation of Energy and Energy Transfer
K-PS3-2	Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.
PS3.B	Conservation of Energy and Energy Transfer
NT	Nature of Technology
ETW	Effects of Technology on the Natural World
K-ESS2	Earth Systems
K-ESS2-1	Use and share observations of local weather conditions to describe patterns over time.
ESS2.D	Weather and Climate
	Engaging in Argument from Evidence
ESS3.C	Human Impacts on Earth Systems
K-ESS3	Earth and Human Activity
K-ESS3-2	Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.
ESS3.B	Natural Hazards
ETS1.A	Defining and Delimiting an Engineering Problem
K-ESS3-3	Communicate solutions that will reduce the impact of climate change and humans on the land, water, air, and/or other living things in the local environment.
ESS3.C	Human Impacts on Earth Systems
ETS1.B	Developing Possible Solutions

Essential Questions/Enduring Understandings

- How does weather affect trees?
- What do trees need to live and grow?
- What is Weather?
- Why is the sun so important?

Objectives

Students will know…..

- The main parts of trees
- How trees are useful to people and animals
- How to compare and contrast leaves

- Describe how leaves and trees change (through the seasons)
- Describe how weather changes
- Compare weather patterns over time
- Describe appropriate clothing for particular types of weather
- The effects of climate change on weather and the environment

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 trees and weather
- Read literature on seasons and weather
- Read literature on trees and leaves
- Utilize FOSS kit with materials: Trees and Weather
- Introduce vocabulary across the unit: observe, compare, similar, different, shape

- Tree Vocabulary: rubbing, branch, leaves, plant, root, stem, tree, trunk, twig, bark, seed
- Weather Vocabulary: air, cloud, overcast, partly cloudy, rainy, snowy, sunny, cold, cool, freezing, hot, warm, temperature, thermometer, windsock
- “Adopt” a class tree for students to study and observe over time (indoor) as well as water, etc
- “Adopt” a class tree for students to study and observe over time (outdoor)
- Take students on an outdoor walk to observe trees, plants, and animals
- Create or use poster to label tree parts (Poster available in FOSS Kit)
- Take students on a walk to collect leaves. Students can compare and contrast leaf findings
- Students can create a leaf rubbing and label parts/type of leaf
- Use puzzles to learn and compare shapes of trees
- Record daily weather, create bar graph of types of weather
- Use a thermometer to measure and record temperature
- Compare and contrast temperature daily
- Construct a wind sock and observe how it responds when air moves through it
- Match pictures and clothing to each of the four seasons
- Maintain observational journals with student note taking and drawings of experiments and activities
- Create a chart of different tree types and their characteristics
- Create a chart of seasonal weather, clothing, characteristics, activities

- Incorporate literature on trees and weather 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:

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

- FQ: Investigation 1.1: What did we learn about our schoolyard trees?
- FQ: Investigation 1.2: What are the parts of trees?
- FQ: Investigation 2.1: What can we observe about leaves?
- FQ: Investigation 2.2: What shapes are leaves?
- FQ: Investigation 2.3:How are leaves different?
- FQ: Investigation 3.1: What is the weather today?
- FQ: Investigation 3.2: How can we measure the air temperature?
- FQ: Investigation 3.3: What does a wind sock tell us about the wind?
- FQ: Investigation 4.1: What does a fall tree look like?
- FQ: Investigation 4.4: What does a winter tree look like?
- FQ: Investigation 4.7: What does a spring tree look like?

Alternative Assessments: Oral presentations, student produced projects

Materials

Core Book List

FOSS Kit: Trees and Weather

BrainPop Jr.

Discovery Education

Mystery Doug

Science notebook for assessment and journaling

Science spin, weekly reader magazine if applicable

Sid the Science Kid:

Season 1 Episode 29: Don't Forget the Leaves

Season 1 Episode 31: Sid's Rainy Play Date

Season 1 Episode 32: Special Sunny Day Dad

Season 1 Episode 38: Sid's Holiday Adventure

Season 1 Episode 29: The Wind Did It

Season 2 Episode 7: Clean Air

Season 2 Episode 13: A Rainbow Every Day

The Magic School Bus:

Season 1 Episode 13: Kicks Up a Storm

Available Shared Reading F&P Classroom: Pitter Patter (F), Up in the Cloud Forest (H), One Summer Day (F)

Available Interactive ReadAloud F&P Classroom: It's Raining its Pouring (F), The Snowman (F), Snowballs (F) , When it starts to snow (F)

F=Fiction, NF=Nonfiction, H=Hybrid