Unit 1 Energy and Matter in Ecosystems

Content Area: **Science**
Course(s): **Science 5**
Time Period: **September**
Length: **MP 1 (about 4 weeks)**
Status: **Published**

Unit Summary

In this unit of study, students develop an understanding of the idea that plants get the materials they need for growth chiefly from air and water. Using models, students can describe the movement of matter among plants, animals, decomposers, and the environment; and they can explain that energy in animals' food was once energy from the sun. The crosscutting concepts of energy and matter and systems and system models are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in developing and using models and engaging in argument from evidence. Students are also expected to use these practices to demonstrate understanding of the core ideas.

Standards

5-LS1-1	Support an argument that plants get the materials they need for growth chiefly from air and water.
5-LS2-1	Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
5-PS3-1	Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.

Student Learning Objectives

Students will learn to:

- SLO 1: Support an argument that plants get the materials they need for growth chiefly from air and water. (5-LS1-1)
- SLO 2: Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. (5-LS2-1)
- SLO 3: Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun. (5-PS3-1)

Essential Questions

- How do plants get the food they need?
- How can you identify a system?
- Is planet Earth a system?
- What organisms are both predators and prey in the kelp forest ecosystem?

Enduring Understandings

Students will understand that:

- matter is transported into, out of, and within systems.
- plants acquire their material for growth chiefly from air and water.
- a system can be described in terms of its components and their interactions.
- food of almost any kind of animal can be traced back to plants.
- organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants.
- some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as decomposers.
- decomposition eventually restores (recycles) some materials back to the soil.
- energy can be transferred in various ways and between objects.
- energy released from food was once energy from the sun, which was captured by plants in the chemical process that forms plant matter (from air and water).
- food provides animals with the materials they need for body repair and growth and the energy they need for motion and to maintain body warmth.

Application

Students will be able to independently use their learning to:

- make/discuss predictions.
- record daily observations.
- watch videoes.
- complete notes in interactive notebook.
- answer focus question.
- create models/posters.

Skills

Students will be skilled at:

- predicting and describing an ecosystem.
- developing an ecosystem using seeds.
- completing a chart focusing on interacting parts.
- creating an ecosystem model.
- verbalizing the differences between living and non-living items.
- noticing the factors needed for a successul, thriving ecosystem.