DECEMBER 2021 | UNIT 2

GRADE 5 SCIENCE

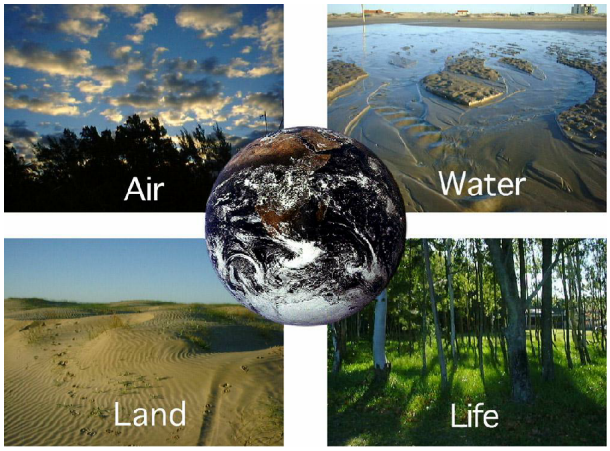
Earth's Systems and Ecosystems

ITS ALL CONNECTED

In this unit, your child will investigate how energy travels from the sun through a food chain to provide energy for the life processes of all organisms. Have you ever wondered how a small seed develops into an plant? Or how plants and animals obtain the energy they need for survival? The SUN! Plants absorb energy from the sun, which fuels the processes necessary for survival. A plant's leaves act as “solar panels,” capturing light as efficiently as possible to help the plant grow. This occurs through a process called photosynthesis.

The same way in which plants depend upon the sun for nutrients, animals use energy in their food that was once energy from the sun for body repair, growth, motion, and to maintain body warmth. These ideas will be further explored in this unit, your child will use evidence to develop explanations about the following concept:
How do plants and animals obtain the energy they need for survival?

Plants absorb energy from the sun, which fuels the processes necessary for survival.



EARTH'S SYSTEMS INTERACTIONS

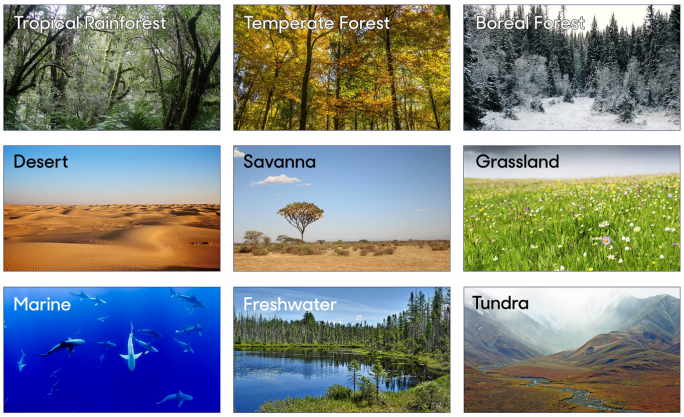
The sun radiates light and heat, or solar energy, which makes it possible for life to exist on Earth. Plants need sunlight to grow. Animals, including humans, need plants for food and the oxygen they produce. Understanding these connections will support students' abilities to answer the following questions: How are plants and animals interdependent? What do animals need to survive in their biome? The ways in which certain animals and plants interact have evolved in some cases to make them interdependent for nutrition, respiration, reproduction, or other aspects of survival.

There is also interaction among Earth's Systems. Everything in Earth's system can be placed into one of four major subsystems: land, water, living things, or air. These four subsystems are called "spheres." Specifically, they are the "lithosphere" (land), "hydrosphere" (water), "biosphere" (living things), and "atmosphere" (air). In this unit, students will explore ways that the systems interact with one another.

BIOMES IN OUR WORLD

Just like Engineers, this unit will require for students to use the Engineering & Design Process to identify a solution to a problem. Specifically, students will design a biome to include information about a plant and animal of choice, detailing system interactions, and an environmental issue currently being faced that biome.

A biome is an area classified according to the species that live in that location. Temperature range, soil type, and the amount of light and water are unique to a particular place.



ENVIRONMENTAL CHALLENGES

Could polar bears survive in a tropical rainforest? How about, Elephants, what chances of survival would they have in the dessert? You see, animals and plants have specific traits that allow them to survive in their environment.

Environmental challenges like, pollution, deforestation, global warming, overpopulation, soil degradation, and waste disposal, can have a great impact on an animal's ability to survive and thrive in their environment. Understanding how this is all connected, will support students in taking the necessary steps to protect planet Earth.

READERS' CORNER

Here are some articles to learn more about Earth's Systems and Ecosystems, available on Newsela:

New U.N. report says oceans are in trouble by Los Angeles Times, adapted by Newsela

Energy flow and the 10 percent rule By National Geographic Society

What makes a biome? By National Geographic Society, adapted by Newsela

Analizando el impacto del petróleo en la vida sobre la Tierra By National Geographic Society, adaptado por la redacción de Newsela

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