

Life Sciences
Rainforests
Quarter 1
Ms. Megan Grade 2-3

Established Goals:

LS.1.4A: students will identify the basic needs of plants and animals in order to stay alive. (i.e., water, air, food, space).

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LS.1.4B: students will sort/classify different living things using similar and different characteristics.

Describe why organisms belong to each group or cite evidence about how they are alike or not alike.

LS.2.4A: students will identify the basic needs of plants and animals in order to stay alive (i.e., water, air, food, space).

LS.2.4B: students will explain that energy is needed for all organisms to stay alive and grow and identify where a plant or animal gets its energy.

LS.3.4A: students will describe ways plants and animals depend on each other (e.g., shelter, nesting, food).

LS.4.4A: students will predict, sequence or compare the life stages of organisms – plants and animals (e.g., put images of life stages of an organism in order, predict the next stage in sequence, compare two organism

LS.5.4A: students will identify and explain how the physical structures of an organism (plants or animals) allow it to survive in its habitat/environment (e.g., roots for water; nose to smell fire)

SI.1A: students will use scientific methods to observe, collect, record, analyze, predict, interpret, and determine reasonableness of data.

Essential Questions:

How matter transferred and energy is transferred/transformed in living systems?

How do responses to internal and external cues aid in an organism's survival?

How are organisms of the same kind different from each other? How does this help them reproduce and survive?

Students will understand that...

From experience, students know that they must eat food to live. As a result of their study of energy movement (transfer) and change (transformation) in living organisms, students understand that the Sun is the primary and ultimate source of energy for living organisms. They learn why a constant input of matter and energy is critical for life. Photosynthetic organisms are critical to all organisms and need to be maintained. If one or more components are altered in an ecosystem, all other components are affected. Through studying the interrelationships of organisms, students learn that they can have a critical impact on other organisms.

Ecosystems can be reasonably stable over hundreds or thousands of years. As any population of organisms grows, it is held in check by one or more environmental factors: depletion of food or nesting sites, increased loss to increased numbers of predators, or parasites. If a disaster such as flood or fire

Life Sciences
Rainforests
Quarter 1
Ms. Megan Grade 2-3

occurs, the damaged ecosystem is likely to recover in stages that eventually result in a system similar to the original one.

the scientific concept of biological evolution--the changes in populations of organisms through time--in order to understand diversity and relatedness within the living world. Inquiries into evolution explain the ways in which natural processes produce life's diversity. These studies help students understand that evolution is the major unifying concept in the biological sciences and that it explains a wide variety of observations that can be made about the living world. In particular, students see that the study of evolution initiates questions about biodiversity, adaptation, genetics, mutations, the geological record, and the observed unity at molecular and whole-organism levels.

Students will know...

All organisms transfer matter and convert energy from one form to another. Both matter and energy are necessary to build and maintain structures within the organism.

Organisms respond to internal and external cues, which allow them to survive

The diversity and changing of life forms over many generations is the result of natural selection, in which organisms with advantageous traits survive.

Students will be able to...

- Identify the basic needs of most animals (i.e., air, water, food, shelter).
- Observe that animals need water, air, food, and shelter/space to grow and reproduce
- Investigate and describe how living things grow and change.
- Observe, identify, and record external features of humans and other animals
- Identify and compare the physical structures of a variety of plants (e.g., stem, leaves, flowers, seeds, roots).
- Identify and compare the physical structures of a variety of animals (e.g., sensory organs, beaks, appendages, body covering)
- Investigate and explain that plants need light energy from the sun to make food, while animals need to eat plants and/or other animals as their food.
- Explain that all organisms require a form of energy to survive and that humans and other animals obtain energy and materials from food
- Describe how all animals depend upon plants whether or not they eat the plants directly.
- Differentiate between the needs of plants and those of animals.
- Identify different environments (i.e., rainforest) support the life of different types of plants and animals.
- Investigate and describe how animals and plants that live in different places have similarities and differences
- Identify the ways in which an organism's habitat provides for its basic needs (plants require air, water, nutrients, and light; animals require food, water, air, and shelter).
- Describe how people and other animals interact with the environment through their senses of sight, hearing, touch, smell, and taste.
- Use information about a simple food web to determine how basic needs (e.g. shelter and water) are met by the habitat/environment.

Life Sciences
Rainforests
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- Sequence the life cycle of a plant or animal when given a set of pictures.
- Recognize that plants and animals go through predictable life cycles that include birth, growth, development, reproduction, and death.
- Demonstrate in a food web that all animals' food begins with the sun
- Illustrate complete metamorphosis (e.g., butterfly, frog).
- Illustrate incomplete metamorphosis (e.g., grasshopper)
- Investigate and describe how particular plants have seeds that produce the same kind of plant.
- Investigate and describe how particular animals have offspring that are the same kind of animal.
- Generate questions and predictions using observations and exploration about the natural world.

Performance Tasks:

What are the big assessments that will assess student learning? Ex. tests, projects, papers, performances, etc.

- Activities graded upon completion and participation
- Presentations
- Research
- Group activities
- Final poster project

Other Evidence:

Assignments scaffolded by age and ability to gain understanding of each component and standard.

Self-Assessment Activities:

Rubric presented at beginning of unit for students to self-assess quality of their work in relation to expectations

Quizzes and activities