

Name:

Science

Lesson 34

Ecosystems

8th - NTI Day 5

Earth is teeming with a vast array of ecosystems. **Aquatic ecosystems** inhabit the rivers, lakes, ponds, wetlands, coral reefs, deep oceans, and many more locations. **Terrestrial ecosystems**, on the other hand, are found in forests, grasslands, deserts, and a plethora of other sites. The harmony and interplay between abiotic and biotic factors is crucial for the survival of every ecosystem.

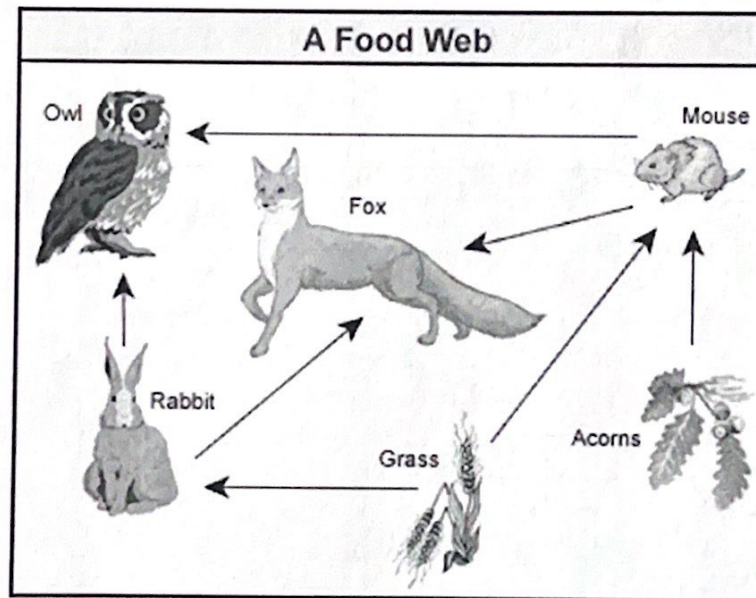
Imagine sitting quietly by a lake. What sights do you think would greet you? Perhaps you'd witness fish springing from the water, ducks leisurely swimming past, or the wind gently causing the water to ripple. All these elements form part of the ecosystem of this freshwater lake. An ecosystem is a network comprising all living (**biotic**) and non-living (**abiotic**) entities in a specific area.

The abiotic elements of a lake ecosystem include things like rocks, the water of the lake, rainfall, wind, sunshine, the soil around the lake, the muddy lakebed, and all other non-living entities that make up the physical environment. The biotic components include organisms such as animals, plants and bacteria.

A group of the same species living in the same region is termed a **population**. Whether it's a group of ducks, a school of bass, or millions of microscopic bacteria, each represents a distinct population. All the populations of organisms in an area collectively form a **community**. Every organism plays a crucial role within the ecosystem. The part each species plays in an ecosystem is known as a **niche**. This encompasses what an animal eats, who its predators are, where it dwells, and more. For instance, a dragonfly's niche in a freshwater ecosystem includes skimming over the water's surface, feeding on flies and mosquitoes, and being preyed upon by predators such as frogs and birds. Every species has a unique role to play, which means that no two species can have the exact same niche.

The food relationships among organisms in an ecosystem are defined as **food chains** and **food webs**. The first link in the food chain is a **producer**, such as a plant or a protist, which generates its own food via photosynthesis. The second link is the primary **consumer**, an organism that is unable to make its own food and hence consumes the producer for energy. This consumer could be an **herbivore** (plant-eater) or an **omnivore** (eater of both plants and animals). All consumers rely on other living beings for survival. The next link is the secondary consumer, typically a **carnivore** (meat-eater). An example of a food chain is shown within the *Food Web diagram*: the grass absorbs energy from the sun, the rabbit eats the grass for energy, and the fox eats the rabbit for energy.

The *Food Web diagram* displays a more intricate network of producers and consumers than a simple food chain. A food web is more reflective of reality, as most animals consume various types of food for survival. For instance, a mouse will feast on acorns, grasses, seeds, and other plant-based food items, depending on the season. An owl will hunt and eat insects, small mammals, and even other birds.



END OF
TEXT

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1. What are the two types of ecosystems mentioned in the text?

- A. River and Ocean
- B. Aquatic and Terrestrial
- C. Forest and Desert
- D. Fish and Animal

2. If you sat quietly beside a lake, you would see all of these except:

- A. Ducks swimming
- B. Fish jumping in the water
- C. The breeze causing ripples in the water
- D. Monkeys swinging from trees

3. What are the abiotic factors in a lake ecosystem?

- A. Animals, plants, bacteria
- B. Rocks, lake water, wind, sunshine
- C. A group of ducks
- D. Dragonfly's role

4. What is a population in an ecosystem?

- A. A group of the same species living in the same area
- B. The part each species plays in an ecosystem
- C. An organism that makes its own food
- D. A complex network of producers and consumers

5. What does a niche include in an ecosystem?

- A. The rocks and soil in an ecosystem
- B. What an animal eats, who eats it, where it lives
- C. The grass absorbing energy from the sun
- D. The physical environment of the ecosystem

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6. What is the first link in a food chain?
- A. A carnivore
 - B. A producer
 - C. An herbivore
 - D. A secondary consumer
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7. What is the role of an omnivore in a food chain?
- A. It consumes the producer for energy
 - B. It absorbs energy from the sun
 - C. It plays a crucial role in the ecosystem
 - D. It lives in a specific area
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8. How is a food web different from a food chain?
- A. A food web is simpler than a food chain
 - B. A food web only includes plants
 - C. A food web shows a more complex network of producers and consumers
 - D. A food web doesn't include consumers
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9. Which animal is a secondary consumer in the food chain described in the text?
- A. Grass
 - B. Rabbit
 - C. Fox
 - D. Mouse
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10. According to the text, what does an owl eat?
- A. Grass and acorns
 - B. Insects, small mammals, and other birds
 - C. Foxes and rabbits
 - D. Predators such as frogs and birds
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