



# 5-Minute Refresher: Ecosystems

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# Ecosystems – Key Ideas

- Ecosystems consist of biological communities and physical components
- Abiotic components are non-living
- Biotic components are living
- Organisms grow and reproduce by obtaining resources through their relationships between abiotic and biotic factors
- Aquatic ecosystems are rich in nutrients and support more life. Their temperatures change slowly and they have a stable source of water surrounding the organisms.
- Terrestrial ecosystems must acquire water and their temperatures can vary widely and drastically in a short amount of time.

# Aquatic Ecosystems – Key Ideas

- “Aquatic Ecosystems” refers to ecosystems in bodies of water
- Aquatic ecosystems can be marine, freshwater, or a combination
- 71% of Earth is comprised of aquatic ecosystems, although only .80% of them are freshwater
- Aquatic ecosystems Provide habitats for wildlife

# Terrestrial Ecosystems – Key Ideas

- Terrestrial ecosystems are found only on land masses.
- Terrestrial ecosystems include the tundra, taiga, temperate deciduous forest, tropical rain forest, grassland, and desert.
- In terrestrial ecosystems there is greater availability of light and gases.
- Organisms in terrestrial ecosystems have adaptations to obtain water.

# Ecosystems – Prior Knowledge

- Students will likely be familiar with habitats of animals.
- They will know that animals eat other animals and/or plants.
- They may know examples of different biomes or ecosystems, such the desert or tundra.

# Ecosystems – Learning Objectives for Grades K-3

- Animals depend on their surroundings to get what they need to survive.
- Plants are producers. They make their own food using energy from the sun.
- Animals are consumers. They eat plants or other animals.
- Plants and animals depend on each other and their environment.

# Ecosystems – Learning Objectives for Grades 4-6

- Ecosystems are dependent on their interactions with living and nonliving things.
- Food can be traced back to plants.
- Competitive, predatory, and mutually beneficial interactions exist and vary among ecosystems.

# Ecosystems – Common Misconceptions

- Plants are dependent on humans.
  - **Reality:** Humans and all other animals are dependent on plants. They are the foundation of every food web. Energy from plants is passed from one link to another in a food chain.
- Organisms in a food chain can eat everything below it.
  - **Reality:** Organisms in a food chain eat some, but not necessarily all, other components in the food web.



# Ecosystems – Additional Information

Food chains follow a simple path while food webs are the interconnection of several food chains. To learn more about this, watch the video at the following link:

Food Chains and Food Webs

<http://www.siemensscienceday.com/activities/hands-on-science-activities.cfm#/life-science>