ECOSYSTEMS AND CHANGES IN ECOSYSTEMS

What is an Ecosystem?

An **ecosystem** is the living and nonliving components of an environment and the way they interact with each other and their environment. There are several different ecosystems on the Earth.

What are the

Plants, trees, o an ecosystem.

How can something nonliving be helpful in an ecosystem?

- Water, soil, and sunlight are nonliving components important to an ecosystem.
- Many parts of an ecosystem work together to keep the ecosystem running properly.
- Ecosystems can be as large as an ocean or as small as a puddle.

Lesson Checkpoint:
What is an ecosystem?

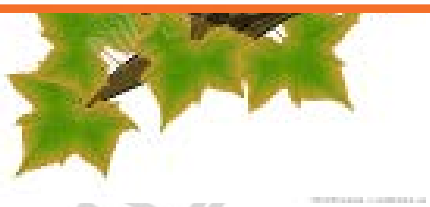
Ecosystem Populations

There are many individuals, families, and groups that live in an ecosystem:

- A **population** is a group of organisms of the **same** species living in the same area. So a population of birds might live in a rain forest.

- A **community** is different populations of plants and animals living and interacting with one another in a particular area. An example would be the community of living things in and around an oasis in the desert.

Each organism has its own special places to live in an ecosystem. A **habitat** is the place w



Each organism has its own special roles and jobs in an ecosystem. A **niche** is the specific role an organism has in its habitat. A **niche** includes several things such as what an organism eats, how it gets its food, and what other animals eat it.

Organisms can only live in an environment where ALL of their **needs are met**. Some organisms can only survive in certain ecosystems.

Lesson Checkpoint: What is a community?

Effects of Changes in an Ecosystem

Many things can affect an ecosystem, in some good ways and in some harmful ways. These effects can be sudden or they can happen over a long period of time. Strong, damaging wind, heavy rains and flooding, such as those that happen in a hurricane, would be an example of a sudden change.

Drastic temperature changes over a period of time in an ecosystem can cause some plants and animals to die, but can also provide just the right climate for other plants and animals to live.

Soil erosion, the wearing away of soil and rock, is an example of a way an ecosystem can be affected over a long period of time.

Fires can rapidly cause destruction in an ecosystem by destroying habitats. Fires can also be helpful to an ecosystem by making way for new plants to grow.

Pollution, which includes **trash and chemicals in water**, can kill fish, plant life, and [illegible] Pollution can happen quick[illegible]over time, when a chem[illegible]

What is a[illegible] affect an

Too Many in One Place

If an ecosystem becomes **overpopulated**, there are **too many** of a certain kind of animals and there aren't enough resources for all their needs to be met in that environment.

Animals **compete for resources** in an ecosystem. Animals compete for food, water, and space. One way animals can **avoid** competition is by hunting for the same food at different times or by hunting together and sharing what they find.

Lesson Checkpoint:
What happens when an ecosystem becomes overpopulated?

Ecosystems of the World

Taiga is an ecosystem of a moist forest that has mostly cone-producing trees, such as pine and fir trees.

Grassland is a region of land covered in many types of grasses.

A temperate (mild) forest is an ecosystem that has different kinds of trees and the climate changes a lot from summer to winter.

A **desert** is the driest of all ecosystems and where there are few plants and very small amounts.

Tropical rainforests are always wet. Thousands of species of plants and animals live in this type of ecosystem. The temperature almost never changes; it is always warm and humid.

Tundra is an ecosystem consisting of land that has frozen soil at all times and no trees.

Lesson Checkpoint:
What is an example of an ecosystem?

Water Ecosystems

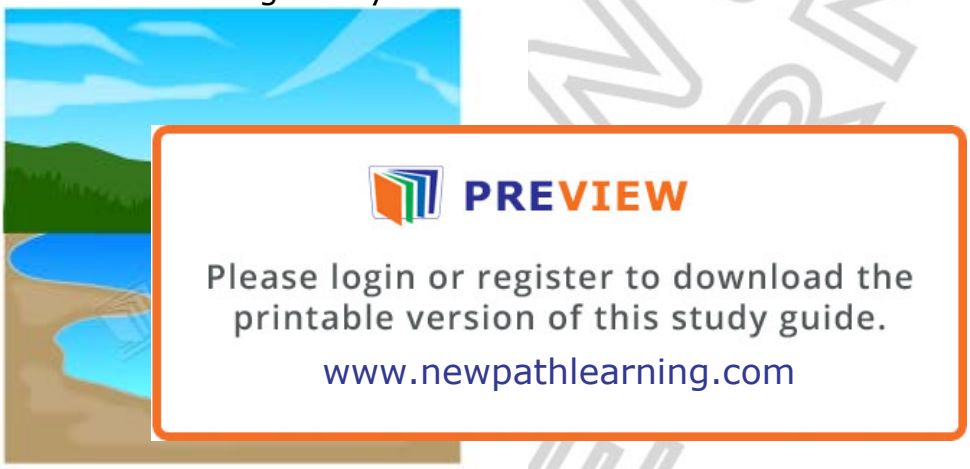
Many different plants and animals live in water ecosystems. Many organisms have to become adapted to different conditions in order to survive in a water ecosystem. For example, organisms that live on **salt water shorelines** have to become adapted to exposure to waves and air.

Water ecosystems are of many different sizes. Some are salt water and some are freshwater.

Freshwater Ecosystems:

- A **river** ecosystem includes the river and the land around the river. A river and surrounding land provide wide ranges of habitat for plants, fish, birds, and other wildlife. Rivers are made of freshwater.

- A **lake** is a large body of **freshwater**.



- A **pond** is a **body of freshwater** shallow enough for plants with roots to grow. This body of water's temperature is often the nearly the same at the top and bottom and changes with air temperature.

Saltwater Ecosystems:

- The oceans are salt water ecosystems.
- There are different layers of the ocean. Most ocean life lives near the ocean's surface because the water here is warm, sunny, and moves constantly. As you go deeper into the ocean, there is no sunlight, which means no plants can grow there, the water is colder, and few organism live there.

Lesson Checkpoint:
What type of water makes up a river?