

Rainforest Ecosystems

Cross-Curricular Focus; Life Sciences



Rainforest ecosystems are found near the equator, the center imaginary line of latitude that runs east and west around Earth. Tropical rainforests have more rain than other areas. The weather is warm and humid all year long. There is lots of sunlight.

Living things are **abundant** in the rainforests. There are thousands of species of animals and even more kinds of plants. Their needs for sun, water and warmth are all met by the conditions of the rainforest. The excellent conditions allow them to **thrive**. There is an amazing amount and variety of plants in that one location. This variety makes the rainforests a major source of Earth's overall oxygen supply.

Tropical rainforests have layers of life. The uppermost layer is called the **canopy**. Very mature, tall trees stretch out their branches and leaves, nearly blocking out the sun in some places. Many animals live high in this green, leafy habitat. You can find monkeys, tree frogs and many different species of birds.

Below the treetops is a second layer, called the understory. The understory is shaded by the canopy. Not as much sunlight reaches the plants in the understory. Bushes and growing trees make up the understory. It is home to birds, reptiles and small climbing animals.

The third layer, the forest floor, is busy with life. Vines, shrubs, mosses, ferns, flowers and large predator animals, such as jaguars, can be found there. Small animals burrow into the ground and live in bushes. Leaf-cutter ants and other insects busily hunt for food and water.

Rainforests contain some of Earth's greatest biological treasures. Many medicines are made from plants found there. Scientists have used them to make some promising drugs for treating cancer and AIDS. Food sources are very rich, too. There are over 3,000 fruits alone. Rainforests also grow the vegetables and grains that make up most of the world's daily diet. You can find corn, potatoes, rice and squash there. Spices like ginger, cinnamon, and chocolate grow alongside coffee and a variety of nuts. The rainforests produce all this in addition to providing oxygen for Earth. The rainforests are very valuable to the planet.

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

- 1) What is the canopy of the rainforest?

- 2) Why might a scientist be interested in the rainforests? _____

- 3) Do you think you could survive alone in a rainforest? Why, or why not?

- 4) Describe the conditions that make a rainforest a good place for many living things.

- 5) Rainforests are found near what imaginary line?

Taiga Ecosystems

Cross-Curricular Focus: Life Science



Taiga ecosystems cover large areas of North America. They are also found in Europe and Asia. A good example of a taiga ecosystem in the United States is the state of Alaska.

The weather is very cold in taiga ecosystems. The winter season lasts a long time. It gets icy cold. Storms are severe, bringing biting cold winds. Summers never get very warm and are extremely short. There isn't much precipitation in a taiga ecosystem. When moisture does fall, it usually comes in the form of dry, powdery snow.

Living in the extreme conditions of a taiga ecosystem takes a special kind of organism. Some common animals you could find in the area are moose, wolves and deer. Each animal **population** has to adapt to the severe conditions. Short, stubby grass and shrubs grow in taiga regions. Beautiful evergreen trees grow there, too. All the trees you think of when you imagine a Christmas tree are at home in the taiga. Pines, firs, and spruce trees are common. The thin, waxy leaves of evergreen trees are sometimes called needles. They hold in water all year round. They also do not freeze easily. In the taiga, temperatures drop down very low.

All green plants are an important source of oxygen for our planet. The many trees of the taiga region add oxygen to the air. Green plants go through the process of photosynthesis to make their food. They use the carbon dioxide that humans and other animals breathe out. At the end of the process, they release oxygen into the air. Since taiga ecosystems have so many trees, they help make up for areas with less plants, like the desert.

People living and working in taiga regions affect the natural balance. Activities such as hunting, trapping and fishing change the animal populations. Animals can be over-hunted and become endangered. Drilling for oil and gas destroys the soil. Harvesting trees damages animal habitats. It also robs the Earth of oxygen sources. Even tourism can cause problems. Some tourists do not respect wildlife and plants. They are willing to sacrifice the habitat for developed recreational areas. People have the right to use natural resources. They should, however, use them in a way that doesn't harm the ecosystem.

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) Why do you think that taiga ecosystems are home to evergreen trees?

2) Give an example of an organism that lives in the taiga.

3) What do green plants release that humans breathe?

4) What is a human activity that might harm the taiga ecosystem?

5) What is summer like in the taiga?