

CYCLES OF LIFE AND BIOMES

Cycles within the Environment

Decomposers are nature's recyclers! Decomposers break down dead organisms; this process releases nutrients back into the soil for plants to use.

The Nitrogen Cycle

Nitrogen is a colorless, odorless gas which makes up about 8/10 of Earth's atmosphere and is essential for ALL life.



Living organisms need nitrogen in order for their cells to function properly. Like water, nitrogen is cycled through the environment.

However, most organisms can't take in nitrogen directly from the atmosphere.

Nitrogen compounds are different kinds of chemicals that contain nitrogen and can be taken in by organisms. Nitrogen compounds are the way that most organisms receive the nitrogen they need to survive.

Nitrogen compounds form in the atmosphere. The heat given off by lightning can cause gases to mix together in the atmosphere, forming nitrogen compounds. Nitrogen compounds reach the Earth's surface by way of precipitation. Nitrogen compounds can also be made by some types of bacteria in soil.

The Nitrogen Cycle Process

Nitrogen is taken in by plants through their roots, animals eat plants, and the nitrogen is passed along the food chain to animals. Herbivores get nitrogen by eating plants. Carnivores get nitrogen by eating herbivores. Nitrogen is returned to the soil when an organism dies – decomposers break down the dead organisms and change the nitrogen compounds in the dead organism's body into the kind plants can use. Then the nitrogen cycle begins again.

The Carbon Dioxide Cycle

Carbon dioxide is one of the Earth's greenhouse gases. It is taken up by plants through cellular respiration and photosynthesis. Carbon dioxide and oxygen are both gases which is the same as the oxygen (with

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The Oxygen Cycle

Oxygen is a colorless, tasteless, odorless gas which forms about 20% of the Earth's atmosphere.

Oxygen enters the Earth's atmosphere from plants, through the process of photosynthesis.

Oxygen and carbon dioxide are also in water. Carbon dioxide and oxygen dissolve in water and are used by water organisms to live. These organisms in the water use oxygen and carbon dioxide during the processes of respiration and photosynthesis.

Biomes of the World

What is a biome?

A **biome** is a large ecosystem with similar organisms and climate. Here are some examples of biomes.

A **rainforest** is a warm ecosystem made up of many different varieties of plant and animal life which receives large amounts of rain.

A **deciduous forest** is a forest with a cooler climate and not a lot of rain.

Grasslands have tall grasses but no trees. This ecosystem receives very little rain...trees need a good deal of rain to grow, which is why they don't grow here.



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Taiga is a cold and dry climate. Animals need to have thick fur or feathers to keep warm in this ecosystem.

Did you know a **desert** is not necessarily HOT??? There are hot AND cold deserts and some deserts that are hot during day and cold at night. A desert is known as an area of land that receives less than 25 cm of precipitation each year. It is the lack of water that makes it a desert.

The **Tundra** is a very cold ecosystem that receives little rain. Its soil is frozen most of the year.