



## Warm-up

The environment is everything that surrounds us. All elements including the air, soil, water, plants, and animals make up the environment.

Take a walk around your school and identify the following elements that make up your daily environment. Check what you saw on your walk.



## Vocabulary

Match the picture with the word.

turbulence



lithosphere



hydrosphere



## Learning

## Elements of an Environment

An environment is a combination of both natural and human-made elements. These elements are divided into two types: biotic and abiotic. Biotic elements are all the living organisms. Abiotic elements include all the non-living things. How can we identify the biotic and abiotic elements? Well, all living organisms have basic needs, just like humans!



## Critical Thinking

How is your environment different compared to an animal living in a forest?

## Application

- Use the words from the word box and write them under the factor that determines an organism's environment.

Ideal temperature

Water

Air

Place to live

Sunlight

Food



## Learning

### Ecosystems

All living organisms need a healthy environment to survive. An ecosystem is an area where living organisms interact in a specific way with the local environment to survive. When ecosystems are damaged, some living organisms may not be able to survive. Ecosystems can be either terrestrial or aquatic. Living organisms are adapted to survive according to their environment.

## Application

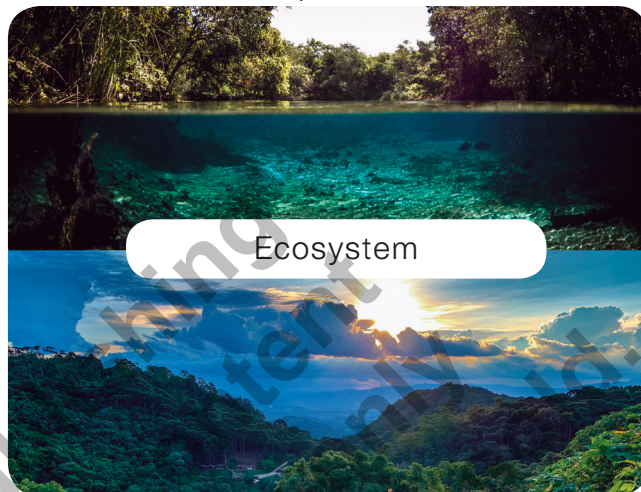
- Connect the animals with the correct ecosystem they live in.

Terrestrial Ecosystem

Aquatic Ecosystem



Aquatic



Terrestrial

### Biotic and Abiotic Factors

Consider a small puddle of water in a forest. In it, you may find all sorts of living things, from microorganisms to insects to plants. These living things may depend on non-living things like water, sunlight, **turbulence** in the puddle, temperature, atmospheric pressure, and nutrients in the water for life. Abiotic resources are usually found from the **lithosphere**, **atmosphere**, and hydrosphere. Examples of abiotic factors are water, air, soil, sunlight, rocks and minerals.

## Application

- Circle three abiotic factors in this ecosystem.



## Learning

### Atmospheric Elements

The atmosphere contains the air that plants and animals breathe to survive. The atmosphere is made up of mostly nitrogen (78%) and oxygen (21%). There are lots of other gases that are part of the atmosphere, but in much smaller amounts. Oxygen is needed by animals to breathe. Carbon dioxide is used by plants for photosynthesis.

## Application

- Both plants and animals are living things that need air, but they use it differently. Use the pictures to explain the difference.

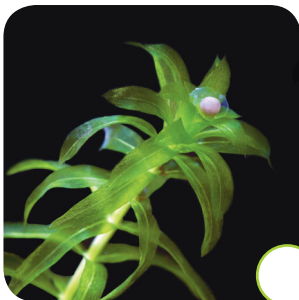


### Living Things and Their Environment

Animals and plants have specific functions and features that help them to survive in their environment. Plants and animals are adapted to survive in their environment. As you have learned, all animals have basic needs. Their adaptations help them to satisfy their needs such as breathing, eating and protecting them against predators and harsh conditions.

## Application

- Match the correct adaptation with the correct terrestrial or aquatic living organism by writing the correct letter in the box.



**A)** Two sets of eyelashes to protect eyes from sandstorms in the desert environment.

**B)** Adapted to eat insects when growing in areas with low nutrients in the soil.

**C)** Adapted with gills to breathe under water.

**D)** Flexible stems to move with water current.

## Learning

### A Balanced Environment

Both biotic and abiotic elements should be in balance for an environment to be able to maintain and sustain all the living organisms. Disturbances in the balance may cause problems and ecosystems will be affected.



## Application

- Match the basic need that may be affected due to the following:

### Disturbance

Smoke in the air



Place to live

Snow melting in cold places



Breathing

Cutting down a tree



Food

Animals dying (disease)



Ideal temperature



### Did you know?

If organisms cannot adapt to changes in their ecosystem, they may move to a different location, or face becoming extinct.



### Hands on!

In this project you will make a 3D presentation of living and non-living organisms in an environment.

### You will need

Paper, markers, glue, objects to represent biotic and abiotic factors in an environment.

### Instructions

1. Work in groups of 4 or 5.
2. Walk through your classroom. Find examples of biotic and abiotic elements.
3. Prepare your presentation and glue the objects in the correct column.
4. Be creative! Think about the atmospheric elements. What can you use to represent clouds? Are clouds biotic or abiotic?



Living



Non-living