

2. The Inter-relationships between Living Things

A riddle to solve!

An age old tree with a thick strong trunk
gives deep, dark shade from the scorching sun.
Like an old man's beard with many strands,
it has ropes for swinging from every branch.

Which is this tree in the picture?



Can you tell ?

Plants in our surroundings are useful to us in different ways. The names of some plants are given below. For what purpose do we use their leaves?

- Betelvine • Flame of the forest (Palas) • Fenugreek (Methi)
- Vasaka (Adulsa) • Curry leaf plant

The needs of living things are met in their environment.

We have many needs like food, water, air, clothes and shelter. All these needs are met in our surroundings.



In fact, food, water and air are the needs of all living things. They are all fulfilled in the environment. But there are differences in the needs of each kind of living things. For example, the water that a mouse drinks in an entire day would not be enough for an elephant even at one time.

Think about it !

Butterflies feed on the nectar of flowers. Can a frog do the same ? A sheep eats the leaves of shrubs. Can a tiger do the same ? A fish can breathe in water. But can a pigeon do that ? Bulrushes grow in water. Can a lemon tree do so ?



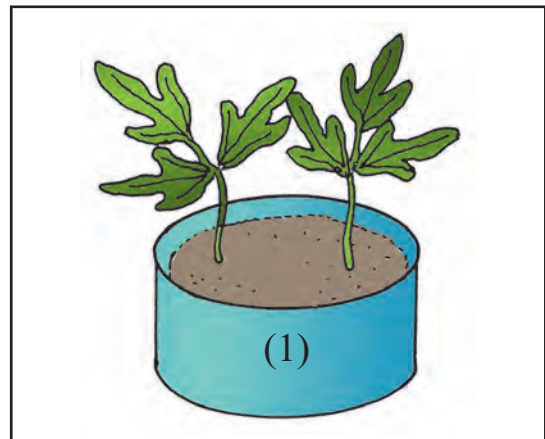
Can you tell ?

If fish leave the water, will they be able to live on land ?



Try this.

- Take two small boxes. Label them box 1 and box 2. Fill them three-quarters with soil. Make the soil moist enough to sow seeds.
- Sow two sprouted moth (matki) seeds in each box.
- Give two spoons of water to the soil of box 1, only once every day. Give four spoons of water to the other box four times a day. Do this for six days.

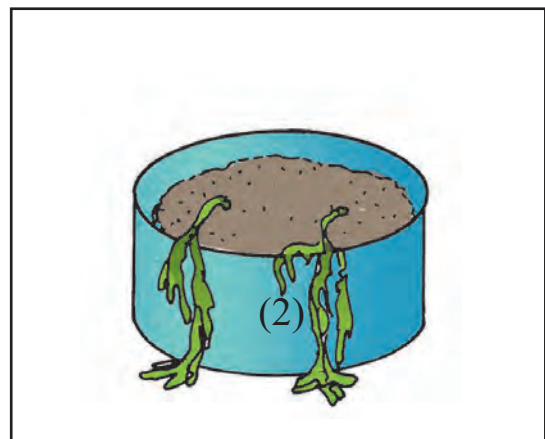


What will you see ?

- The plants in box 1 are growing well. But the plants in box 2 have begun to rot.

What does this tell us ?

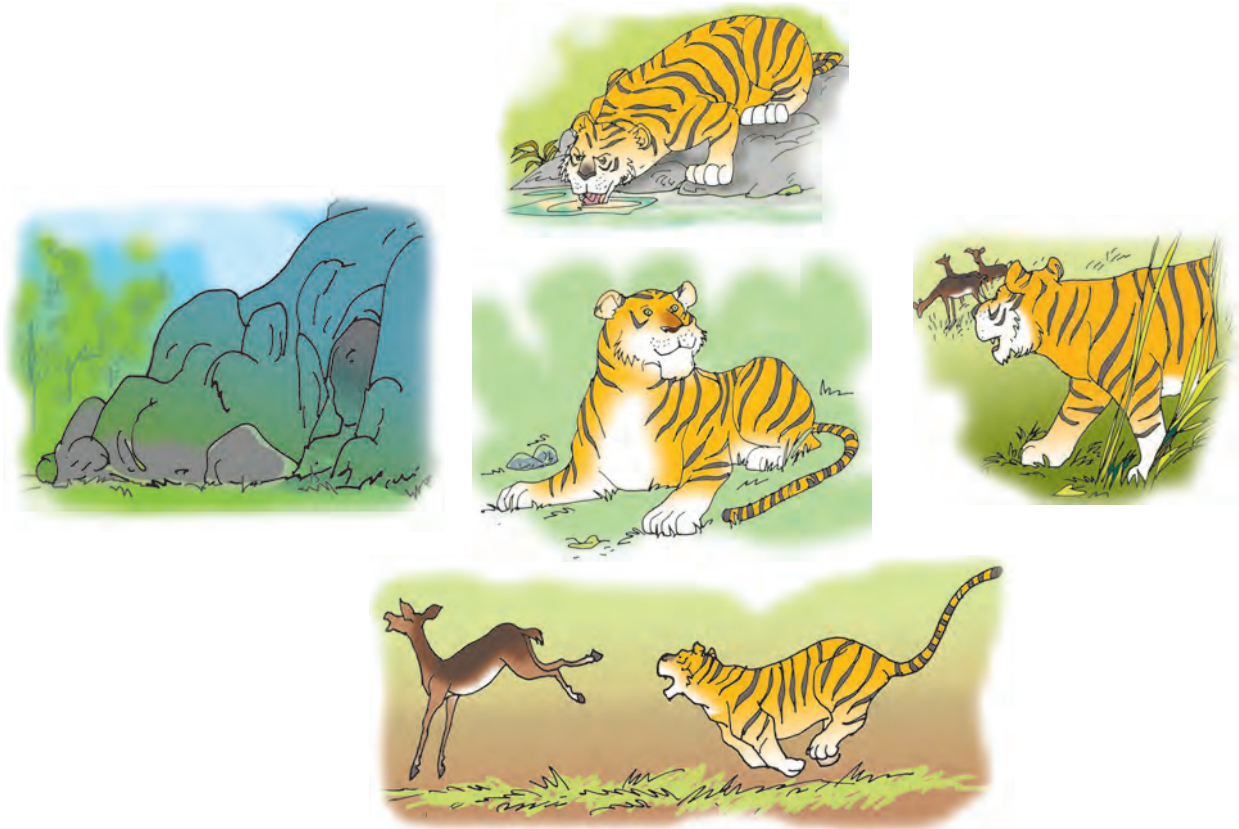
- Plants that are not aquatic plants cannot grow in marshy areas.
- If they get more water than they need, they rot.



Any type of living thing will be found only where all its needs are fulfilled.

Let's take the example of the tiger. A tiger has stripes. A tiger lies in wait for its prey among tall grasses. Its prey cannot see it in the grass because of the stripes. There are animals like the deer, the nilgai and the bison in grasslands. When the tiger is hungry, it can feed on them. For a tiger, there also needs to be a waterhole nearby which never dries up even in the summer. There must also be dense vegetation, tall grasses, or caves in hills or mountains in the area so that the tiger can find shelter.

A tiger inhabits an area where all these things are available.



Where does a tiger live ?



Can you tell ?

- From where do we get silk ?
- How are trees useful for monkeys ?
- How are trees useful for birds ?
- What happens if termites make a tree hollow ?

We keep animals in order to satisfy some of our needs. They become dear to us. We look after them well. We feed them. We take them to a vet if they fall ill. These animals, too, return our affection.

We get milk, meat, eggs and several other things from animals. Some animals are useful for carrying burdens or drawing carts. Domestic animals are also used to help with the heavy farm work in fields. Dogs guard our houses. Sheep give us wool.



Do you know ?

- Even the excreta of domestic animals is of use to human beings.
- The dung of cattle is made into dung-cakes. They are combustible. They are used in some places as fuel. When they burn they give out smoke.
- A combustible gas called gobar gas is also obtained from cattle dung. That, too, is used as a fuel. It burns without smoke.
- Cattle dung is used for plastering mud houses.
- Manures made from cattle dung and sheep pellets are good for plants. Farmers use them for growing crops.



Animals are our friends.

Just as we need animals, we need plants, too. Plants give us foodgrains, vegetables and fruits. We love flowers too. We use them for many different purposes. We get flowers from plants. We also get cottonwool from plants to make cotton clothes.

We grow plants that are useful to us, methodically. We sow seeds. We make sure that they get water. We give manure when necessary. We spray pesticides if they are attacked by insects.

Plants, too, give to us abundantly. They satisfy our needs.

Other living things also get their food from the environment. For example, chameleons eat insects when they are hungry. Some snakes eat mice and frogs. Tigers eat deer. Goats and sheep eat leaves of plants. Cattle eat grass.

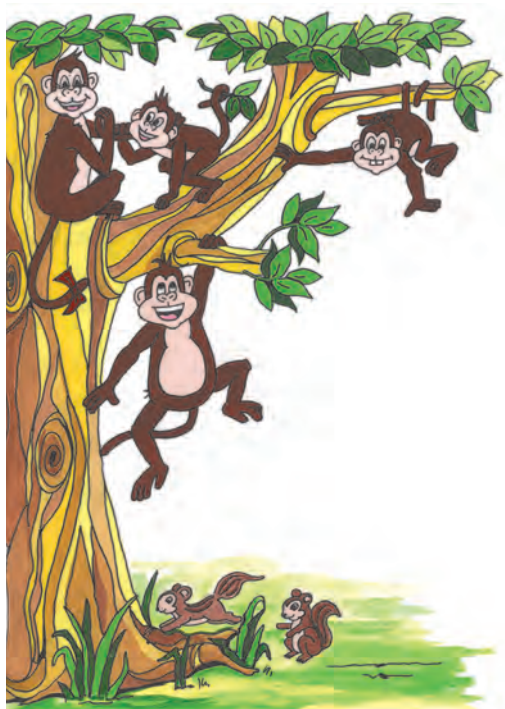
A new term !

arboreal : This word comes from the Latin word ‘arbor’ which means ‘tree’. Arboreal means ‘living in trees’.

Animals like monkeys and squirrels live on trees. It gives them certain advantages. Being at a height, they are better able to defend themselves from their enemies. Besides, they can eat the fruits of the trees to satisfy their hunger. Such animals are said to be arboreal.

Unknowingly, they help the tree with whose support they live. As they move around here and there in the surroundings, they spread the seeds of the fruit they have eaten, through their droppings. Because of this, new trees grow in different places.

Some types of birds, too, find trees useful for building their nests.



Arboreal animals



Do you know ?

- An egret rides on a buffalo's back.

When a buffalo is grazing in a grassy area, you are very likely to see an egret riding on its back. What could be the reason for that?

A certain kind of egret feeds on different kinds of insects. Grass is full of all kinds of insects. But, because they are hidden in the grass, the egret cannot see them and catch them.

As the buffalo treads on the grass, it frightens the insects, which fly out of the grass. The egret on the buffalo's back makes no mistake in swooping down to catch and eat them up.



Seasonal changes in living things

Find out :

- (1) What is the Marathi name for mango blossoms?
When do mango trees blossom every year?
- (2) Does the banyan have leaves throughout the year?
- (3) We see frogs everywhere during the rains. Where do they disappear in summer?
- (4) Which is the season for jamuns?



We have three seasons, summer, the rainy season and winter. It is very hot in summer. We wear cotton clothes and drink plenty of water.

In the rainy season, we use umbrellas or different kinds of raincoats and hoods to avoid getting wet in the rain.

In winter, we wear woollens and other warm clothes to protect ourselves from the cold.





Just as the three seasons affect us, they affect all other living things too. We see these changes taking place in the living world every year, year after year.

Winter, in Maharashtra, is also called the season of *paangal*, i.e. the falling of leaves. That is because many trees shed their leaves in winter.



The coats of many furry animals become thicker in winter. This keeps them warm in the cold season. Such growth of hair is especially noticeable in animals like sheep, and some types of goats and rabbits.

The end of winter is also the time for the mango trees to start blossoming. These blossoms are called *mohur* in Marathi.

At the close of the month of February, it becomes warmer and by March, we begin to feel the heat. Its time for summer.



Mohur

In this season, many trees get new leaves. Forests appear to have taken on a copper colour because these leaves are reddish and shiny while they are tender. Their colour changes to green as the leaves grow bigger. The call of the koel is heard in many places.



In summer, the market is full of mangoes and watermelons for us to buy. This is the season for these fruits. Although mango trees grow all over Maharashtra, the Konkan region is particularly famous for its mangoes.

It is also the season for cashew nuts. The red-yellow cashew apples can be seen growing on the cashew trees on the hillsides in the Konkan region.

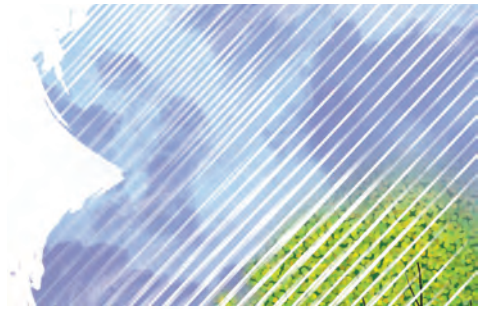
In June, black clouds make their appearance. The rainy season is a short way away. By this time, we begin to get jackfruits, jamuns (java plums) and *karavandas*.

The seeds of grass and other plants lie scattered all over the ground. They sprout and start growing as soon as it begins to rain. It becomes green everywhere. This greenery is soothing after the hot summer months. Sometimes, we can even see the rainbow with its seven colours in the sky.

As it becomes wet everywhere, frogs appear. We also hear the loud noise of frogs croaking all together.

As the rainy season ends, it is time for winter to make a comeback. It gets colder and colder. This is not good for the frogs. They go deep under the ground for a long period of slumber which lasts for seven or eight months.

We depend on agriculture for food. The different seasons, summer, winter and the monsoons are the time for doing different tasks in the fields.



What we have learnt –

- The needs of all living things are met in the environment. There are differences in the needs of different living things.
- Some arboreal animals like monkeys and squirrels live in trees and feed on them. Their droppings help trees to grow in new places. Some birds build their nests in trees.
- Each type of living thing thrives where all its needs are fulfilled. For example, tigers live in grasslands and aquatic plants live in water.
- Changes in seasons affect living things. In winter, trees shed leaves and animals' coats grow thicker. At the start of summer, trees get new leaves. In the rainy season, it becomes green all around, frogs appear and crops grow in fields.



Always remember –

The environment changes with the seasons.
Living things have to adapt themselves to those changes.



Exercises

(A) What's the solution ?

Gurpreet has to go for a hobby class on a hot summer afternoon. She needs to be told what to do to protect herself from the heat.

(B) Think and tell.

1. If water collects in fields due to heavy rains, the crops growing there rot. Why?
2. Why do we not get a good crop if we do not get good rains?
3. Why does the Indian rat snake (*dhaman*) live around fields?
4. If there are furry animals living in snowy regions, would their coats be thick or sparse?

(C) Find out :

1. Which fruits are the following places in Maharashtra famous for?
• Nagpur • Gholvad • Saswad • Deogad • Jalgaon
2. Why do you think these fruit trees grow in those particular regions?
Find out and write down the information you get. Share it with your classmates.

(D) Answer the following questions.

1. How are plants useful to us?
2. What is meant by 'arboreal' animals?
3. What changes do we see in trees at the beginning of March?

(E) Fill in the blanks.

1. After, winter comes again.
2. We keep animals because animals meet some of our
3. We spray to prevent insects from attacking plants.
4. Winter is also known as the season of



Activity



- Observe the changes that take place in living things in the different seasons and make a note of them.

