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LEAF

Having learnt about different types of plants, let us now know more about a very important part of the plant—the **leaf**.

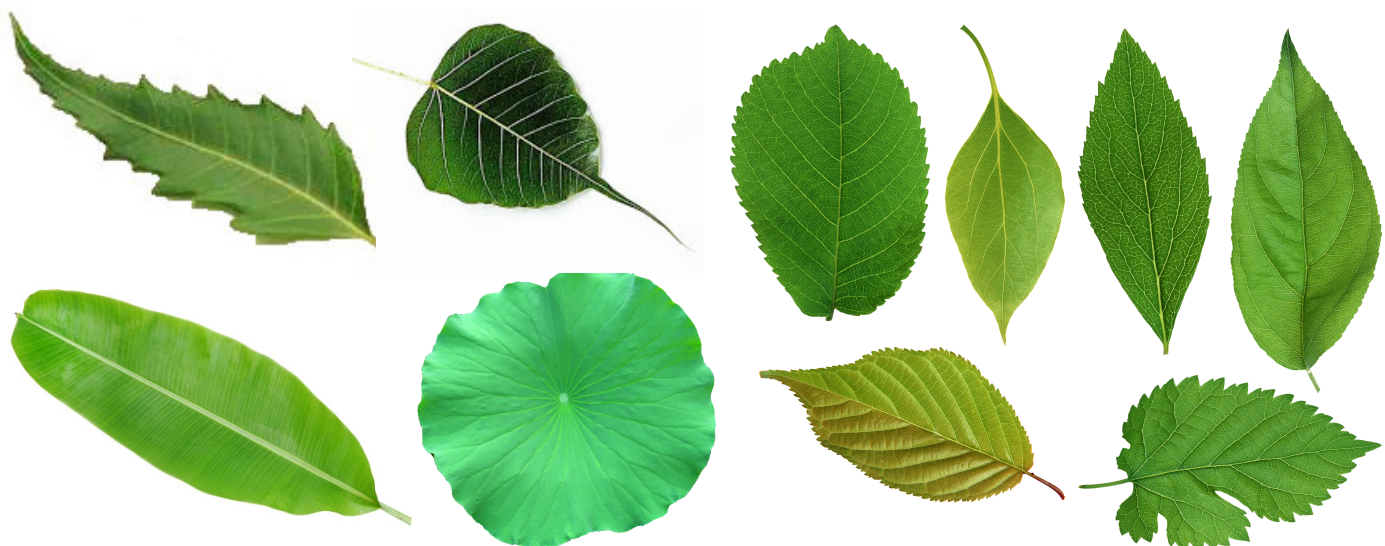
Look carefully at different plants shown below:



The green coloured parts, attached to the branches, are seen in all the plants. Each of these green part is known as a **leaf** of the plant.

The leaf is a very important and essential part of the plant. It plays a key role in making food for the plant.

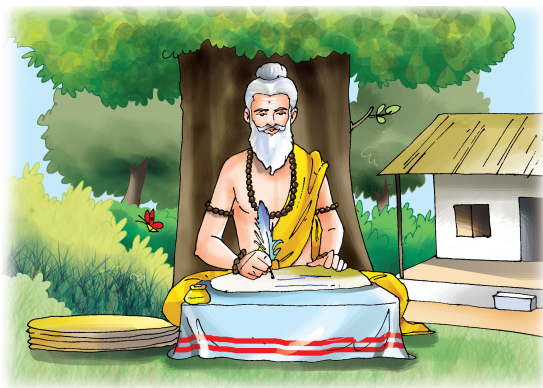
Leaves of different plants differ in their shape, size and texture. This can be noted by looking at the pictures of the leaves of different plants.



Uses of a Leaf

Plant leaves play an important role in our daily life. We put them to many uses. In olden days, people used to write on some types of leaves.

In southern parts of India, banana leaves are often used as plates for eating food.



A saint writing on a leaf



Food is being served on a banana leaf

Do You Know?

People often use *Tulsi* leaves while making tea. It helps to cure cough and cold. People in India generally grow a *Tulsi* plant in their courtyard.



Neem leaves help to protect clothes and other items from insects. Leaves of *neem* and basil (*tulsi*) are also used for medicinal purposes.

Leaves of some plants are used to make food look nice and attractive. You must have seen your mother garnishing food with coriander (*dhania*), mint (*pudina*) and curry leaves. These leaves also add aroma to the food.



Neem leaves



Do You Know?

Curry leaves are good for eye-sight and help to cure diarrhoea.

We also eat the leaves of many plants as vegetables. You must have eaten vegetables made from spinach, mustard, fenugreek (*methi*) and cabbage leaves.



Spinach



Mustard



Fenugreek



Cabbage

Leaves have become, a part of our daily life, in very many different ways. We often see pictures and drawings of leaves at many places. Curtain designs, *saree* borders, paintings, *rangoli* and temple carvings often have leaf designs on them. This makes them look beautiful and attractive.



Shedding of Leaves

In certain seasons of the year, we see very many leaves lying on the lawns and the roads. This shows that the leaves of plants are not permanent. They remain on the plant only till they are able to perform their function well. When they become old, the plants shed them off. New leaves then grow up to take

Do You Know?

The shedding of leaves also help the plant to 'throw out' the harmful wastes that get collected in its old leaves.

their place. The old leaves keep on getting shed and new leaves keep coming in their place.



Shedding of leaves

Compost the Leaves

What should we do with the leaves that have been shed by trees and plants? We should collect and dump the fallen leaves, along with our kitchen waste, in a pit. This 'waste' can then be covered with moist soil. When this is left as such for two to three months, it becomes **compost**.

This compost can then be used in fields. It helps the plants and crops to grow better.





Collected fallen leaves



Compost

For the Teacher: The teacher should explain to students why fallen leaves should not be burnt but be used to make compost.

Keywords

- ❖ **aroma** fragrance, nice smell.
- ❖ **convenient** suited to your comfort.
- ❖ **essential** necessary.
- ❖ **garnish** something added to a dish to add flavour, or to decorate it.
- ❖ **texture** the feel (rough or smooth) of a surface.

Something to Know

A. Fill in the blanks.

1. _____ is the common, green part of the plant.
2. Leaves of different plants differ in their shape, size and _____.
3. *Neem* and _____ leaves are often used for medicinal purposes.
4. The leaves of spinach and *methi* are used as _____.

B. Write True or False for the following statements.

1. *Neem* leaf is often used to protect clothes from insects. _____
2. Leaves of plant help them to make their own food. _____
3. Curry leaves are used to garnish food. _____
4. New leaves take place of old leaves. _____

C. Tick (✓) the correct option.

1. The leaf of this plant is used as a plate.
(a) banana (b) mango (c) basil (d) spinach
2. These should be used to make compost.
(a) fallen leaves (b) burnt leaves (c) flowers (d) roots
3. This leaf is often used to add aroma to the food—
(a) *peepal* (b) coriander (c) mango (d) *neem*

D. Answer the following questions in brief.

1. What does a leaf do for the plant?
2. To what use were some leaves put by saints in olden days?
3. State two uses of leaves in our food.
4. Name any two articles where one can find leaf designs.
5. How is compost useful for plants and crops?

E. Answer the following questions.

1. State any three uses of leaves.
2. Why do plants shed their leaves?
3. How can compost be made?

VALUE Based Question

Rahul was playing in the playground near his house. He saw that the gardener was picking up all the fallen leaves and putting these leaves in a fire to burn them. Rahul called all his friends. They asked the gardener to put down the fire as the smoke produced was harmful for the environment. They helped the gardener to pick up all the leaves and put them in a pit. Rahul suggested that these leaves can be later used to make compost. The gardener was very happy with Rahul and all his friends and thanked them.



1. State the values or qualities displayed by Rahul.
2. Why should leaves not be burnt?
3. Have you ever helped any of “our helpers”? How?

Something to Do

1. Observe the differences in the leaves of different plants.

Play a game in which each student has to pick out three leaves from a collection and name the plants to which they belong. The teacher, or an elder in the family, can act as the judge.

2. Dry different types of leaves and make a beautiful herbarium with them.
3. Collect a few leaves of plants like lemon, mango, *neem*, *tulsi*, mint and coriander (*dhania*). Crush the leaves and smell them. Do they all smell alike? Play a game in which children identify the leaves from their smell.

4

IMPORTANCE OF PLANTS

Plants are of great importance in our life. They not only make us feel good, but are also very useful in many ways.



Uses of Plants

We depend on plants for our various necessities. Plants give us food in the form of fruits, vegetables, pulses and grains. We get wood, paper, rubber, cotton, oils, spices and so many other things from different plants. Some plants, like, *tulsi*, *neem*, ginger and garlic, are used to make medicines.

Plants provide us many things.



Spices



Fruits and vegetables



Wood



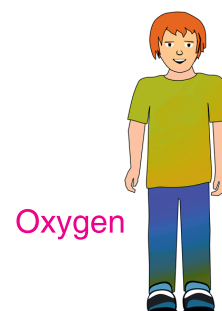
Medicines



Oils



Rubber



Oxygen

Apart from providing so many useful things, plants give us something very very important for all living things. This is oxygen gas, the gas we all need for breathing. Plants give out oxygen gas during the day. This helps to increase the amount of oxygen in the air and, thereby, purifies it. Hence, plants act as **air purifiers**. Plants also bind the soil with the help of their roots.

We can now understand that plants are a very important gift of nature. We must take care of plants so that their number does not decrease. If we have to survive on earth, we must protect the plants.

Ways to Conserve Plants

There are many ways in which all of us can help to conserve plants.

The following are some suggestions for this purpose.

- ◆ Let us not cut trees. We should use only those branches and leaves that have fallen down.
- ◆ We should promote afforestation, i.e. planting of new plants. We should celebrate *Van Mahotsav* by planting saplings in the schools, and

neighbourhood areas. We should also take full care of these saplings, and let them grow into plants and trees.

Do You Know?

The Old Tjikko is the oldest, known, living tree. It is 9,550 years old.



- ◆ We need to save our forests and put a ban on deforestation, i.e. cutting down of trees. There should be punishment for those who cut down trees.
- ◆ All of us should take steps to protect forests against forest fires.

For the Teacher: Explain the students the benefits of afforestation and the ill-effects of deforestation.

Keywords

- ❖ **afforestation** planting of new trees.
- ❖ **deforestation** cutting down of trees.
- ❖ **necessities** basic needs.
- ❖ **purifier** something which helps in removing impurities.
- ❖ **survive** to live.

Something to Know

A. Fill in the blanks.

1. Plants are _____ to us in many ways.
2. Garlic and ginger plants are also used to make _____.
3. Plants give out _____ gas during day time.
4. People who cut down trees should be _____.
5. All living things need oxygen gas for _____.

B. Write True or False for the following statements.

1. We must protect plants to survive on the earth. _____
2. Fallen leaves can be burnt. _____
3. We should encourage deforestation. _____
4. Only a few of us need to try to increase the number of plants and trees. _____
5. Plants, give us food only. _____

C. Tick (✓) the correct option.

1. They are an important gift of nature.
 (a) toys (b) plants (c) cars (d) mobiles
2. Plants give us—
 (a) wool (b) wood (c) egg (d) butter
3. Efforts need to be made to protect forests from—
 (a) fires (b) rains (c) air (d) animals

D. Answer the following questions in brief.

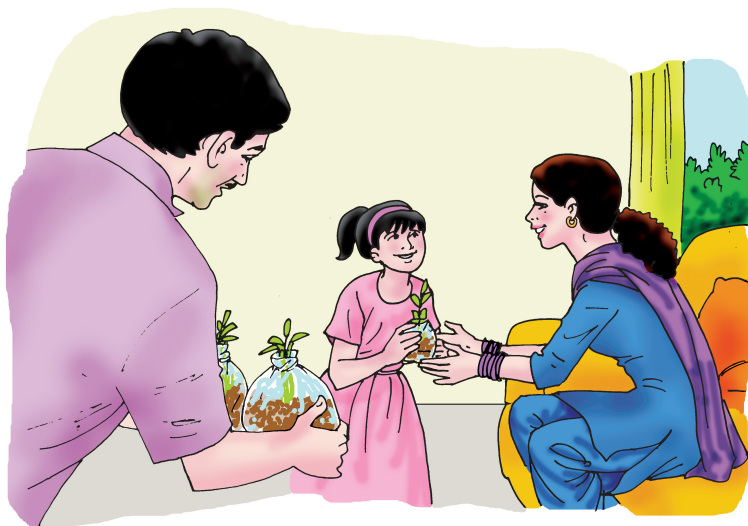
1. In which forms, do we get food from plants?
2. How do plants help the soil?
3. What is deforestation? Is it good or bad for all of us?

E. Answer the following questions.

1. List any four uses of plants.
2. How do plants act as air purifiers?
3. Suggest three ways that can help to conserve plants.

VALUE Based Question

The birthday of Neha's mother was on July 4. Neha, along with her father, decided to surprise her with a nice birthday gift. Her father, took her to a nursery where they selected many saplings of different plants. They got them packed in a careful and neat way. Neha's father explained to her why he chose this gift for her mother. Neha felt very happy when her mother appreciated their 'surprise' gift. They all jointly planted those saplings in their garden and took all care to help them grow.



1. State the values displayed by Neha and her father.
2. Why, do you think, Neha's mother appreciated the saplings as a gift?
3. Suggest how one can take care of the saplings planted by him/her?
4. Think of more occasions when you can gift a sapling to someone.

Something to Do

1. Make a collage of different things we get from plants and display it in your classroom.
2. Make paper bags with old newspapers and decorate them.
3. Grow a sapling on your birthday and watch it grow. Observe the changes that occur in its growth every month.

5

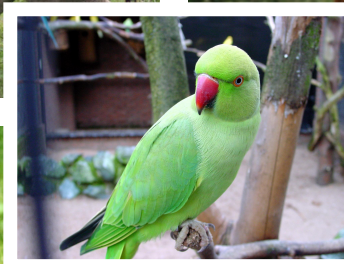
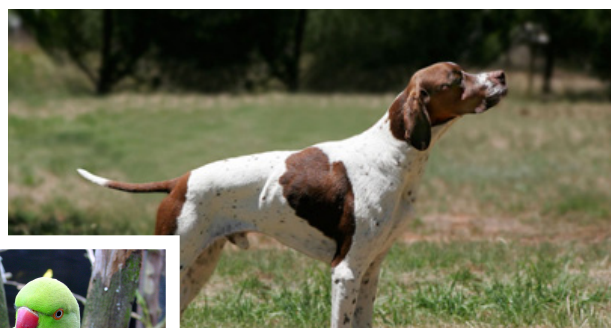
ANIMALS



Little Aryan came home from school, ate his lunch and fell asleep. He had a nice dream in his sleep. In his dream, he met some animals. One by one all the animals introduced themselves to him.

See the pictures carefully and read the statements given below to identify these animals.

1. I am friendly and guard your home. I am _____.
2. I live in and around your home. I give you milk. I am _____.
3. I do not live around your home. I am the king of the jungle. I am _____.
4. I have a horn on my head. I am _____.
5. I have a light green colour body and use my red beak for eating. I am _____.



For the Teacher: Help students to understand the diversity of size of animals through pictures in book, animals heard about, visit to neighbourhood and zoo, etc.

Aryan told his mother about his dream when he woke up. He wanted to know more about animals. His mother explained that there are different types of animals. They have different feeding habits. Also they live in different habitats. Some live on land while others live in water. Some animals, known as **birds**, can fly in the air.

Do You Know?

A place where an animal lives is called its **habitat**.

Along with Aryan, let us learn more about how animals are classified, and grouped, on the basis of their habitats.

Land Animals

Land animals are animals that live on land. The land, or earth, has plains, caves, forests, deserts and snow covered areas. Different land animals live on different parts of land.

Animals living on land are also called **terrestrial** animals.

Animals Living in Plains

Many animals, like horse, cow, buffalo, dog, cat, donkey, and so many others, live in plains. All these land animals walk and run on four legs.



Animals Living in Deserts

Animals, like camel, snake, lizard and so many others, are found in deserts. Deserts are usually very hot and have very little water. Animals living there can tolerate high temperatures.



Camel



Snake



Lizard

Camels can live without water for many days. They can store water and food in their bodies. They have padded feet that help them to walk on sand. Lizards and snakes crawl on the ground. They live in burrows. This helps them to escape the heat of the desert.

Animals Living in Forests

Forests provide shelter and food to many animals. Animals, like tiger, zebra, elephant, giraffe, deer, kangaroo, and many more, live in forests. The colour of the skin and body patterns, of some of these animals, help them to merge with their surroundings and protect them from danger.



Animals Living in Cold Regions

There are some parts of the earth which are very cold and are always covered with snow. Animals, like polar bear, snow leopard, penguin, arctic hare, and many more, live in such snow covered areas. These animals have thick fur to protect their bodies from cold.

Do You Know?

The arctic regions of the earth are its very cold regions. These regions are near the north and south poles of the earth.



Polar Bear



Snow Leopard

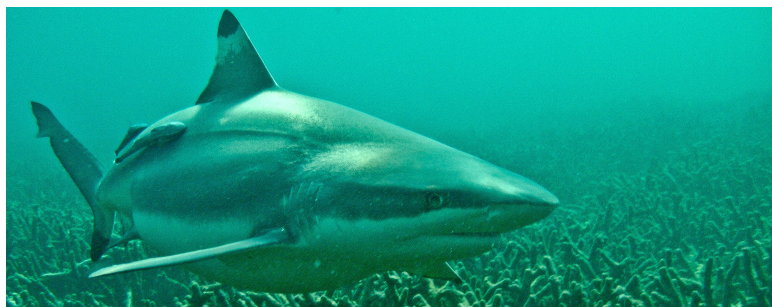


Penguins

Water Animals

A good part of earth is covered with water. Many animals live in ponds, lakes, rivers and oceans. Animals living in water are also called **aquatic** animals. These animals have fins for swimming and gills for breathing.

Animals, like whale, shark, turtle, starfish and jellyfish, live in the salty waters of oceans. Fish, like catla, labeo, trout, piranha, are found in fresh water lakes and rivers.



Whale



Shark



Turtle



Starfish



Labeo

Animals, like frogs and toads, are land animals. However, they need water for laying their eggs. Frogs have webbed feet for swimming. They can also breathe in water.



Frog



Crocodile

Turtles live in water for most of the time. They have flippers for swimming. They come to land when they have to lay eggs.

Crocodile is a land animal and can crawl on the ground. It lives near water and can also swim.

Animal Behaviour

Look at your friends around you. Some of them are very friendly, others are quite shy. Animals also show different types of behaviour. Some of them are shy while others are playful.

Animals, like dogs and cats, are the favourite pets of many of us. These animals like to interact and play with humans. They love their masters. Dolphins

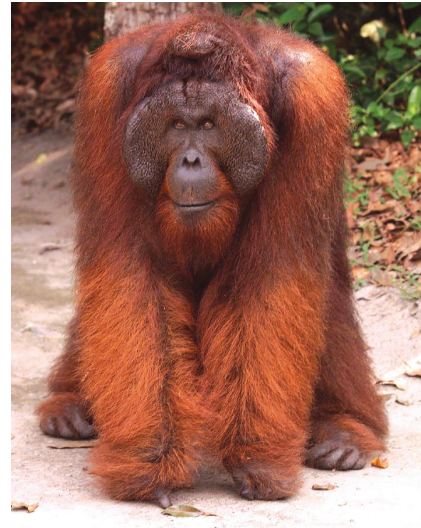


Pet in a home environment

live in oceans. They are very intelligent animals. They can easily learn to perform tricks and play games.



Dolphin



Orangutan

Animals, like deer, orangutans, tigers and snakes, are shy animals. They are not very friendly with humans. They do not like to interact with humans. We, humans, also try to avoid most of such animals.

Keywords

- ❖ **aquatic animals** animals living in water.
- ❖ **burrows** small hollow areas under the earth.
- ❖ **flippers** paddle like organs for swimming.
- ❖ **interact** to be friendly.
- ❖ **merge** mix together.
- ❖ **terrestrial animals** animals living on land.

Something to Know

A. Fill in the blanks.

1. Land animals generally walk on _____ legs.
2. Desert animals can tolerate _____ temperature.
3. Penguin is found in _____ covered regions.
4. Piranha is found in _____ water of lakes and rivers.
5. Orangutan does not like to interact with _____.
6. Terrestrial animals live on _____.

B. Match the following:

- | | |
|---------------|--|
| 1. dog | a. crawls on the ground. |
| 2. camel | b. people often keep it as a pet. |
| 3. snake | c. can live without water for many days. |
| 4. toad | d. has thick fur on its body. |
| 5. polar bear | e. lives both on land and in water. |

C. Tick (✓) the correct option.

1. This animal lives in a desert.
 (a) tiger (b) lion (c) camel (d) dog
2. An animal, that lives in very cold regions, is the—
 (a) penguin (b) snake (c) zebra (d) parrot
3. An animal, that lives in a burrow, is a—
 (a) fish (b) giraffe (c) penguin (d) snake
4. Nature protects polar bears from cold, by providing them with—
 (a) webbed feet (b) beak (c) fur (d) gills
5. It is not an aquatic animal.
 (a) fish (b) turtle (c) rabbit (d) starfish

D. Answer the following questions in brief.

1. Name any four land animals.
2. Name any two things that forests provide to animals.

3. How do fins and gills help a fish?
4. Why do frogs need water?
5. Why dogs and cats are favourite pets of many people?

E. Answer the following questions.

1. State the special features which help a camel to live in a desert.
2. How do skin colours and body patterns of some animals help to save them from danger?
3. Why are dolphins considered to be intelligent animals?

VALUE Based Question

While coming home from school, Aryan saw an injured puppy. He picked it up, brought it home. He applied medicine at its injury with the help of his mother. The puppy felt happy and wagged its tail. They then gave some food to the puppy.



1. State the values shown by Aryan.
2. How did Aryan help the puppy?
3. Have you ever helped any animal or human being who was in pain? How did you feel after that?

Something to Do

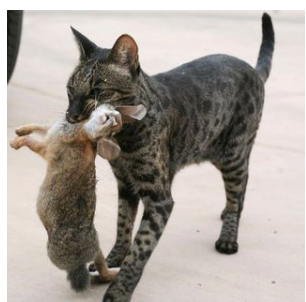
Visit a zoo or your neighbourhood area and write the names of the animals that you see there. Put their names in the relevant boxes.

Land Animals (walk on land)	Water Animals (live in water)	Air Animals (fly in air)

6

FEEDING HABITS OF ANIMALS

You already know that different types of animals eat different kinds of food.



Look at the pictures given above carefully. Write the names of these animals according to categories given in the table below.

Animals eating plants and leaves.	Animals hunting other animals and eating them.	Animals eating both plants and animals.	Animals eating remains of dead animals.

Animals need food for their growth and energy. They cannot prepare food themselves. They depend on plants, or other animals, for their food.

Let us put the animals into groups according to their feeding habits.

Herbivorous Animals



Cow, goat, giraffe, monkey and elephant eat small plants or other parts of a tree. Such animals are called **herbivorous** animals.

Carnivorous Animals



Animals, like lion, hyena, snake and frog, hunt other animals and eat them. Some animals, like fox and vulture, eat the remains of dead animals. Such animals, which only eat other animals, are called **carnivorous** animals.

Omnivorous Animals



Animals, like bear, crow, rat and jackal, eat both animals and plants. Such animals are called **omnivorous** animals.

Feeding Habits of Different Animals

Different animals eat different types of food. The kind of food they eat depends upon the shape of their mouth, jaws and teeth.

Some Animals Swallow Their Food



Frog, lizard and snake do not use teeth to bite or chew the food. Frogs and lizards catch their prey with the help of a sticky tongue. The snake can open its mouth very wide to swallow its prey.

Do You Know?

Snakes can eat animals which are bigger than them in size.

Some Animals Chew The Cud



Some animals, like cow, buffalo and camel, first nibble their food and put it inside their bodies. When they relax, they bring back part of the food from inside into their mouths. They then chew it properly. This is called '**chewing the cud**'.

These animals have very strong and broad back teeth which help them in chewing.

Some Animals Tear Their Food



Animals, like lion, dog, fox and cat, first tear the flesh with their sharp pointed front teeth. They then chew it with their grinding teeth.

Some Animals Gnaw Their Food



Rabbit, squirrel and rat have sharp front chisel like teeth. With these teeth, they can bite even hard and rough food grains and other things. Such animals are called **gnawing** animals.

Some Animals Suck Their Food



Insects, like butterfly, mosquitoes and leech, have a long hollow tube like structure. This helps them to suck their food.

Leech is a worm like insect which feeds by attaching itself to some other animal and sucking its blood.

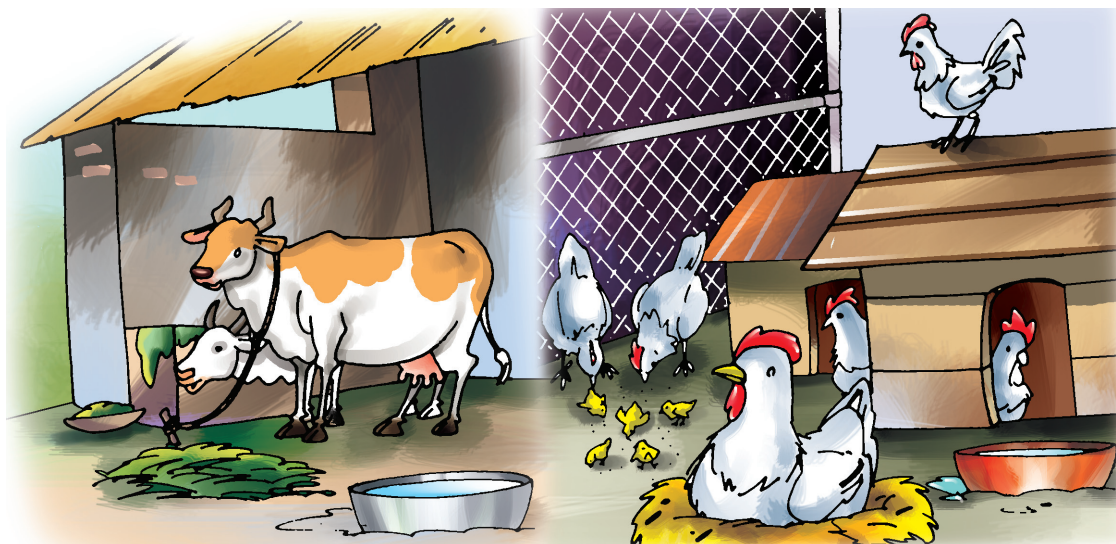
Do You Know?

An elephant uses its trunk to pluck leaves and push them into its mouth. Its trunk also helps it in sucking water.



Care of Animals

Animals, living in wild, can take care of themselves. Domestic animals, which live with us, need our help and care.



- ◆ Animals, which give us milk, need to be fed with grains, green fodder and lots of clean water.
- ◆ Poultry birds, like hen and duck, should be fed with grains and water.
- ◆ The shelter of all these animals should be clean, dry, and airy.
- ◆ Pet animals need to be protected from hot and cold weather.
- ◆ Sick animals should be separated from healthy ones and got treated. They should be taken to a veterinary doctor immediately.

We can keep the domestic animals happy and disease free by giving them care and love.

Keywords

- | | |
|------------------------------|---|
| ❖ carnivorous animals | flesh eating animals. |
| ❖ cud | the nibbled food that lies inside the stomach of animals. |
| ❖ gnaw | to bite something repeatedly. |
| ❖ herbivorous animals | plant eating animals. |
| ❖ nibble | to bite gently. |
| ❖ omnivorous animals | animals which eat both plants and animals. |
| ❖ veterinary doctor | a doctor for animals. |

Something to Know

A. Fill in the blanks.

1. Snakes _____ their prey.
2. Giraffe feeds on _____ only.
3. Frog has a _____ tongue.
4. Buffaloes _____ their food first and then chew it.
5. Butterfly _____ its food.
6. Squirrel has sharp front _____ like teeth.

B. Match the following:

- | | |
|-------------|--------------|
| 1. snake | a. sugarcane |
| 2. monkey | b. frog |
| 3. lion | c. banana |
| 4. elephant | d. deer |

C. Tick (✓) the correct option.

1. The animal, that eats both plants and animals, is the—
 (a) tiger (b) cow (c) rat (d) horse
2. Dog tears the flesh with—
 (a) chisel teeth (b) grinding teeth (c) pointed teeth (d) tube
3. Poultry birds should be fed with—
 (a) green grass (b) fresh fruits (c) milk (d) grains
4. It is a herbivorous animal.
 (a) fox (b) cow (c) rat (d) snake

D. Answer the following questions in brief.

1. What are carnivorous animals?
2. Name the kind of teeth that help a cow to chew the grass.
3. Name two animals which gnaw their food.

4. Name the type of teeth that squirrels have. Name two more animals having the same type of teeth.

E. Answer the following questions.

1. State one difference between herbivorous and omnivorous animals. Give one example of each type.
2. How does a lizard take its food?
3. Explain the term 'chewing the cud'?
4. Write any two ways that can help us in taking care of domestic animals.
5. How do butterfly and mosquito have their food?

VALUE Based Question

Shalu and her parents were returning home after their trip to Nainital. When they stopped their car at an 'eating joint' on the highway, a man came near them. He had a beautiful cage with two white pigeons in it. He asked them to buy the cage and the birds from him. When Shalu asked her parents to buy the cage and the pigeons, they did not agree to do so. On the way back, her mother explained to her the reason for their decision. Shalu realised that her parents were right. The pigeons, like all other birds, should be free to fly in the skies. She decided to tell her friends also that they should not buy birds, or other animals, that have been put in a cage.



1. State the values displayed by Shalu's parents and by Shalu herself.
2. Give in your own words, the reasons explained by Shalu's mother, for their decision.
3. Suggest the kind of food that can be given to birds like pigeons.

Something to Do

Find names of animals from the given 'puzzle box'. Put them in the correct columns.

A	B	C	A	M	E	L	T
G	F	O	X	N	Q	R	R
O	R	W	L	O	P	Z	A
A	O	R	A	B	B	I	T
T	G	K	W	I	L	P	S
M	O	S	Q	U	I	T	O
S	N	A	K	E	O	Y	I
L	E	E	C	H	N	A	V

Chewing food	Tearing food	Sucking food	Gnawing food	Swallowing food