

SCIENCE

STANDARD THREE

TERM I



SCIENCE

What these Icons stand for!



Shall we classify!



Activity / Let us do !



Field trip / Let us collect !



Project



Let us think!



Let us write.



Let us draw/colour.



Let us find!



Fact.

1. OUR COLOURFUL GARDEN



Dheepak and **Sumathi** like to grow plants. A few days back, each of them planted a flowering plant in their garden. They used to go to school only after watering their plants. Once, they went to their grandparent's house to enjoy the village fair for a weekend.

When they came back, they were shocked to see their plants withering away. Dheepak felt very sad and asked his father, "Why have these plants dried up?" "No one watered the plants in our absence," father replied.

Sumathi had something to ask, "Will the plants die, if we don't pour water?" "Yes of course," came the reply. "Father, plants don't have mouth. How do they drink water?" asked Dheepak.



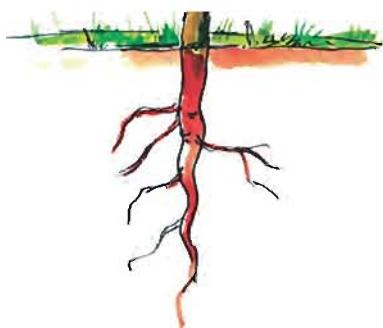
Father answered with a smile, "We drink water through our mouth; the plants absorb water through their roots. Plants also absorb minerals along with water. They supply water to all parts of the plant through the stem. It helps in the growth of the plant."

Sumathi asked her father, "What does the root look like?" Father uprooted a grass and started describing it.



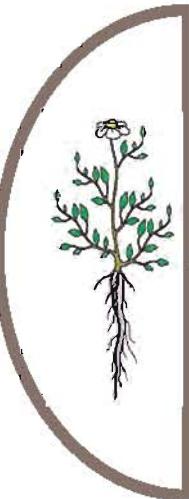
- The part of the plant found below the soil is the root system.

Root :



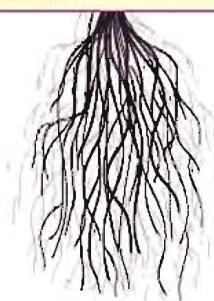
- It firmly fixes the plant to the soil.
- Plants absorb the minerals needed for growth from the soil, along with water.
- Certain plants store food in their roots.

Sumathi uprooted a Leucas (thumbai) plant. She found the root of leucas different from the root of grass. Father explained the difference. "The root of grass belongs to **fibrous root system**. It grows from the base of the stem as a bunch. But Leucas root is different. It belongs to **tap root system**. In tap root system the main root goes deep into the soil to fix the plant firmly in the soil".



Fibrous root system

- It is found as a cluster at the bottom of the plant.
- It is not rooted deep in the soil.

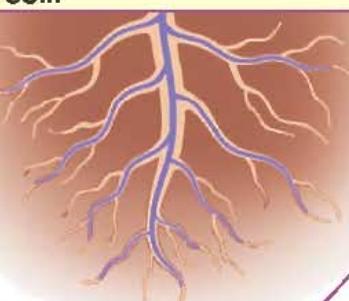


Activity

Grass

Tap root system

- Main root is present at the bottom of the plant from which the secondary roots are formed.
- It is rooted deep in the soil.



Leucas

Collect different kinds of weed plants with their roots and observe the types of root system and discuss their differences in groups.



Dheepak asked his father, "Carrot is also found under the soil. Is it a root?" "Yes, some plants store food in their root" answered his father.

Plants that store food in their roots.



Radish



Carrot

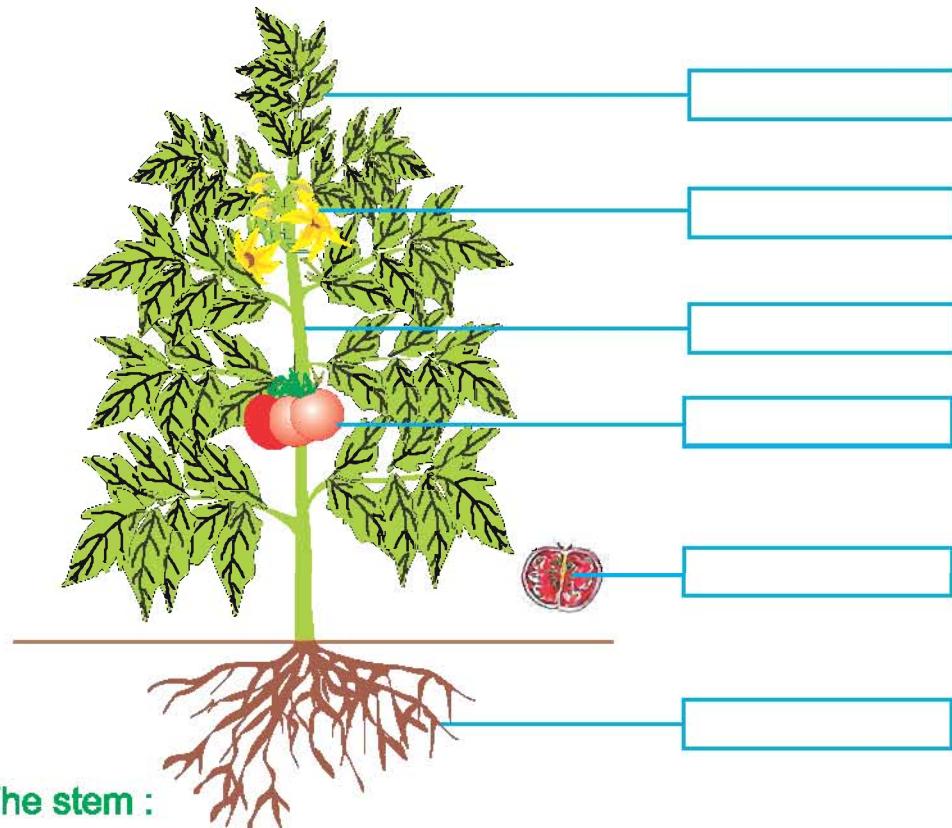


Beetroot

Dheepak and Sumathi were thrilled to know about the roots. They wanted to know about the other parts of the plant, as well. Their father started explaining about the stem, leaf, fruits and seeds.



Let us write :



The stem :

- * Stem is the part of the plant seen above the soil.
- * It holds the leaves, the flowers and the fruits.
- * The leaves grow from its nodes.
- * Certain stems are found below the soil and help in the storage of the food. These stems are called underground stems.



Example.: Turmeric.

Plants that store food in their stems



Turmeric



Potato



Ginger

Activity - Role play

Prepare the children to assume themselves as the following vegetables to enact role play : **Turmeric, ginger, potato, beetroot, carrot and radish.**



The Leaf :



- * Different plants have leaves of different shapes and colours.
- * Leaves are of two types: The simple leaf and the compound leaf.
- * Leaves have chlorophyll. It helps the plant to prepare its own food.

Compound Leaves



Simple Leaves



Shall we classify !

Leaf	Stalk found/not found	Simple/Compound	Leaf	Stalk found/not found	Simple/Compound





Let us draw

In groups, collect different types of leaves.

Form a group and draw the outline of the leaves in a chart paper.



Shall we colour every leaf with suitable colours ?

The flower



- The most beautiful part of the plant is the flower.
- Flowers are also of different shapes and colours.
- Some are even multi coloured.



Let us do!

- Collect different types of flowers.
- Let us discuss the size, the shape, the structure and the colour of the flowers you have collected.



Name of the flower	Size (Small/ Big)	Colour	Stalk (present/ absent)	Fragrance (felt/ not felt)	Structure (Single/ Cluster)

Facts



- The flower that blooms once in 12 years is KURINJI.
- The flowers which bloom in the night are white in colour and they have attractive fragrance.

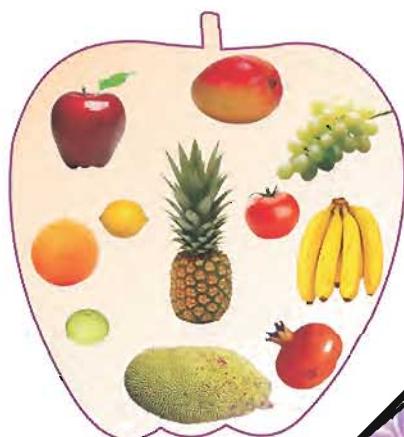
The Fruit :

- Flowers develop into fruits.
- Fruits differ in their colour, shape, taste and smell.
- Seeds are found inside the fruits. There may be one or many seeds.
- Seeds also differ in their shape, nature and texture.
- A baby plant arises from the seed.



Which are the fruits you like, in the picture given? Why?

Can you name the fruits seen in the picture?



1. Let us do !



Form a group and observe the cross section of fruits like Mango, Papaya, Pomegranate, Sweet lime, Guava, Chikoo, Pineapple, Water melon etc., and fill the table given below.

Name of the fruit	Number of seeds (single / many)	Nature of seed (soft/hard)	The Diagram of the seed

2. Let us do !



Take ten numbers of any one of the following - beans, peas, hyacinthbean or dried pea.

Peel the pod, count the number of seeds and record the result in the given table.

Peas	Number of seeds									
	6									

1 2 3 4 5 6 7 8 9 10



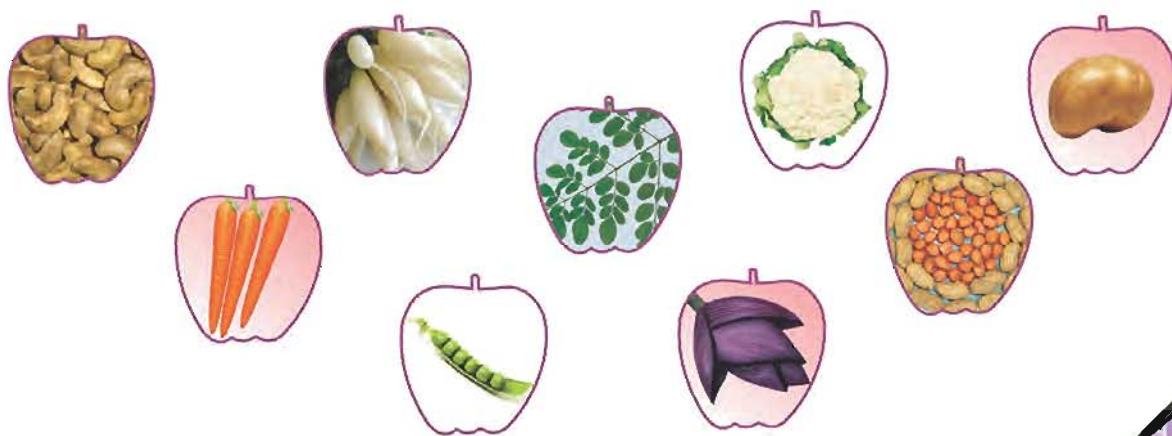
- Is it possible for you to find out the number of seeds before peeling the pod?
- How many peas have the same number of seeds?



Shall we classify!



Root	Stem	Leaf	Flower	Fruit	Seed



Water plants :



Some plants adapt themselves to live in water.
They either float or remain submerged in the water.

- They have short roots.
- They have air cavities in the stem and leaves to float.
- Stomata are small holes on the leaf surface which help in the removal of excess water vapour from plants.

Water plants are also called hydrophytes



Floating plants
e.g : Eichornia



Fixed with long roots
e.g : Lily



Submerged
e.g : Hydrilla

Who is he?



Jagadeesh
Chandra Bose

He is the Indian scientist who discovered that plants have feelings as animals.



Evaluation :



a. Let us write :

- | | | |
|---------------------------|-----------------------|---------------------|
| 1. S _ NF ___ ER | 5. C _ L ___ P ___ LL | 9. HY _ R _ LLA |
| 2. CH _ Y ___ N _ HEM _ M | 6. G ___ G _ R | 10. G _ OUN _ N _ T |
| 3. L _ T _ S | 7. T _ R ___ R _ C | |
| 4. V _ LL _ S ___ R _ A | 8. P _ AS | |

b. Using the letter given below try to frame the names of some flowers.

(L, N, J, O, T, A, S, U, S, S, M, I, R, O, E, S, E, S, H, I, N, B, F, I, S, O, I, W, C, E, U, S, R)

Eg. LILY

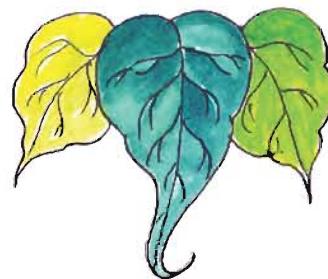
1. _____

3. _____

2. _____

4. _____

c. Create some images using different types of leaves as shown in the picture.



d. Match the following

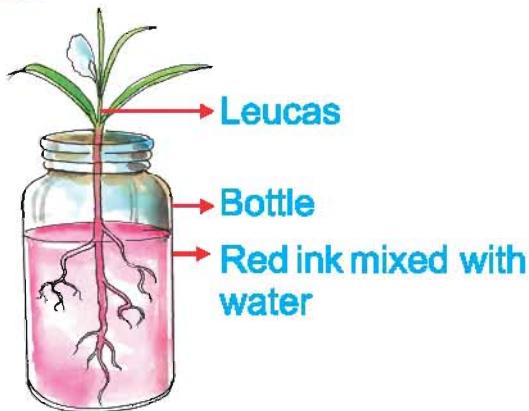
- | | | |
|----------------|---|--------------|
| a. Water plant | - | ginger |
| b. Leucas | - | fibrous root |
| c. Grass | - | Lily |
| d. Stem | - | taproot |



e . Let us do ...
Young scientist!



1. Leave a rooted Thumbai (Leucas) plant in a bottle having red ink mixed with water as shown in the picture.
2. Observe the plant after a while and record your observations.



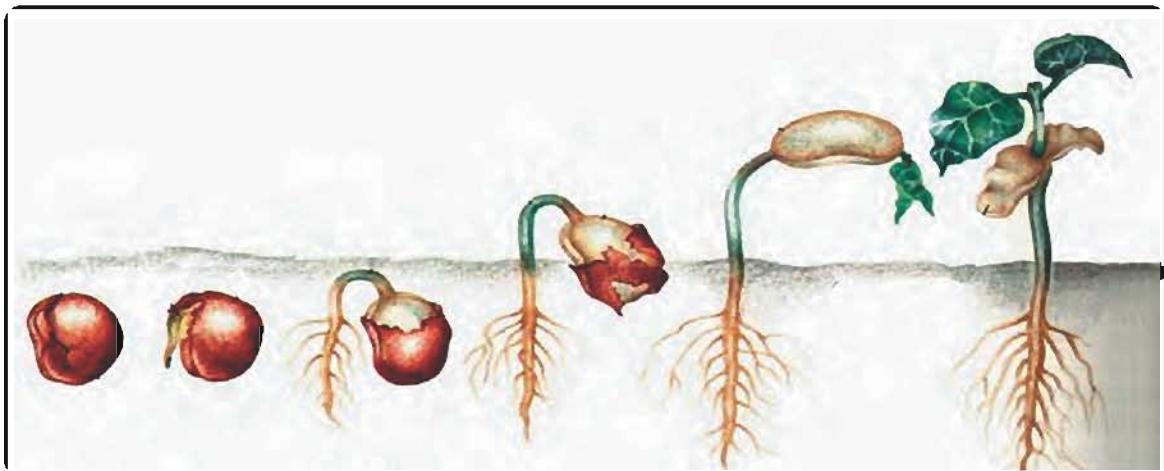
f . Let's go to a field trip !

Visit a nearby fruit farm or vegetable farm. Observe and collect the details about it.



g. Project:

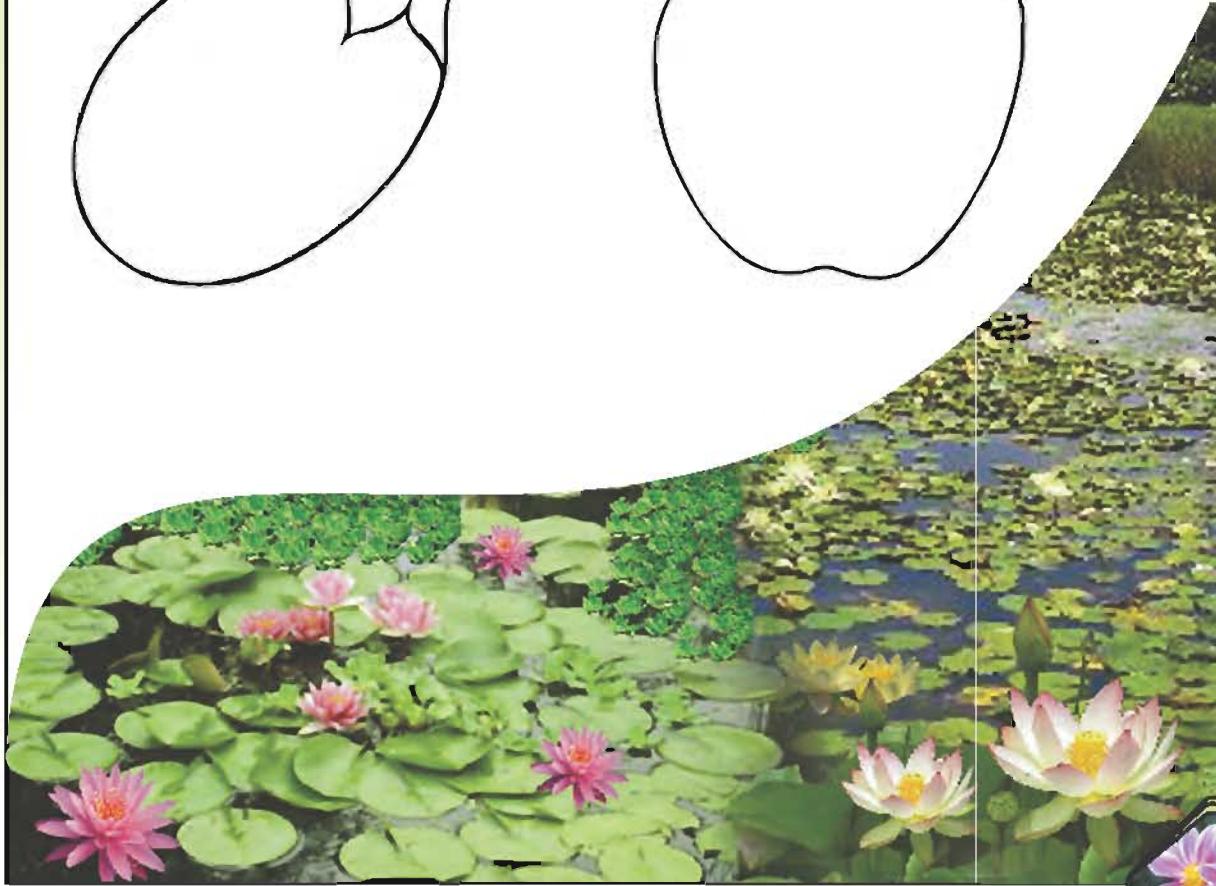
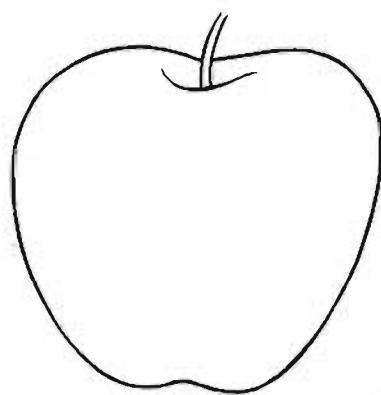
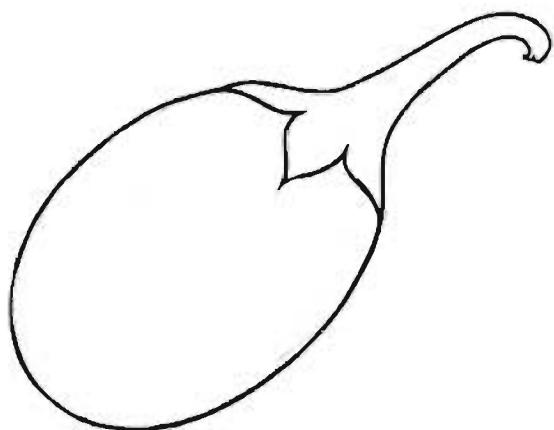
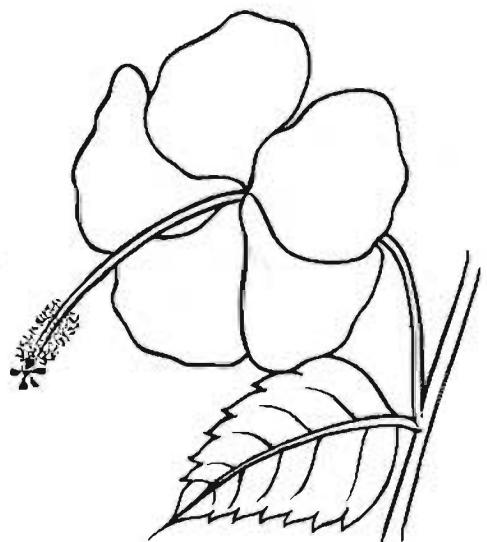
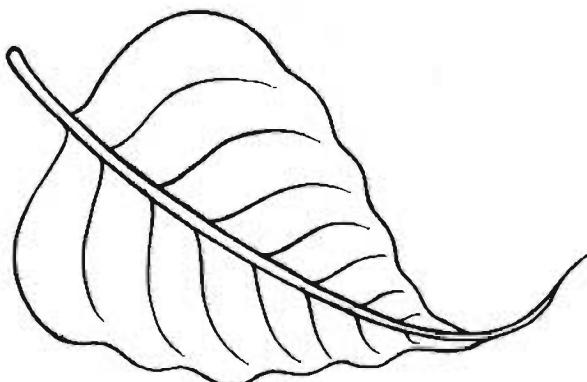
1. Form a group and observe the germination of the bean seed.



2. Make an album of different shapes of leaves.

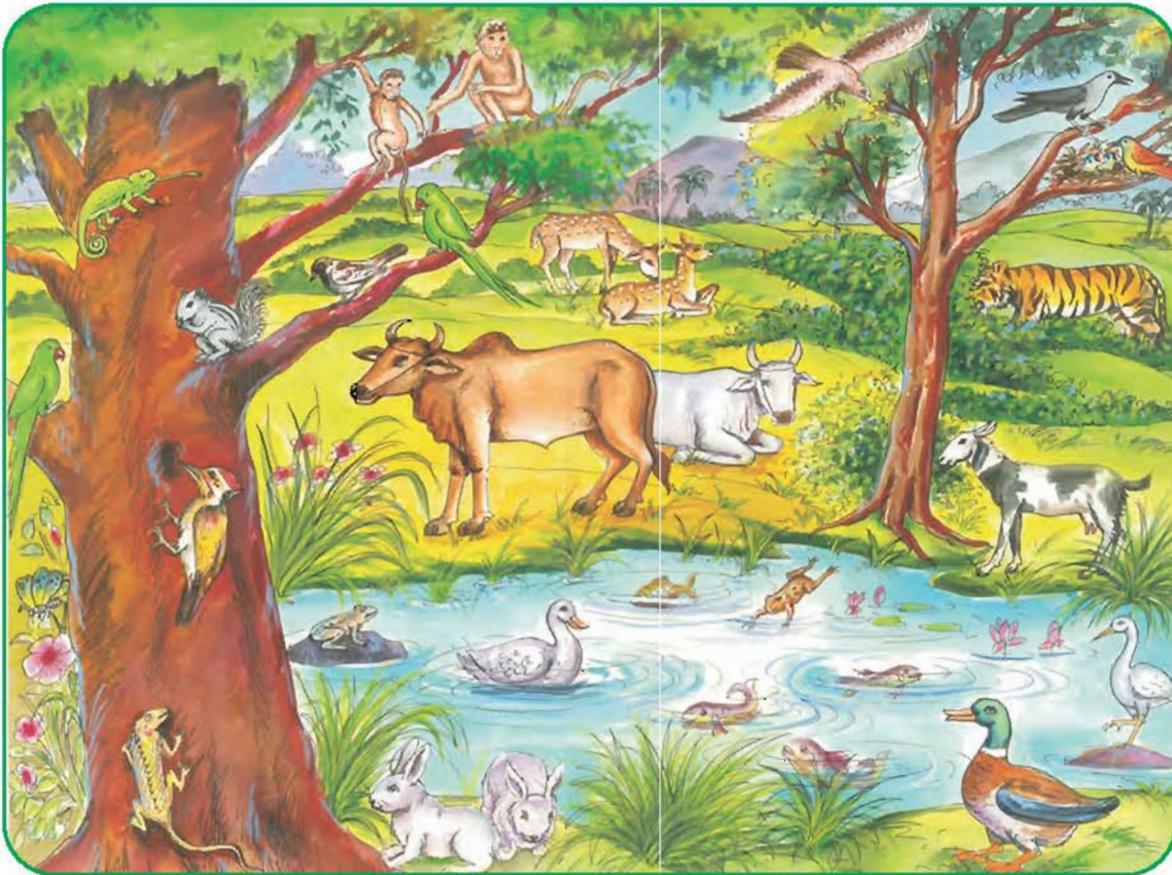


h. Colour the following :



2.

ANIMALS AROUND US



We see a lot of animals and birds in the picture.

List the names of the animals and the birds in the picture.

- ◆ Which are the birds found in water?
- ◆ Name the animals that crawl.
- ◆ Which is the biggest animal in the picture?
- ◆ Which is the smallest animal in the picture?
- ◆ Name the animals that feed on plants.
- ◆ Name the animals that feed on other animals.
- ◆ Name the animals that feed on both plants and animals.



- ◆ Name the birds which can be kept at home.
- ◆ Have you seen any animal in a Zoological park? Name a few.
- ◆ Name some pet animals bred at home.

Let us swim ...

Have you seen fish swimming in water? Come on, let us see the fish tank and watch how a fish swims in water.



Can you see? Fishes use their boat shaped body to swim in water. The fins present on either side of the body help the fish to move forward. Look, how beautifully the fish turns around inside the tank! The tail helps the fish to change its direction.

Can you notice a lid opening and closing near the head? It is operculum. Gills are present inside the operculum. They help the fish to breathe.

1. Fishes have _____ shaped body.
2. They can change the direction with the help of _____.
3. They can swim with the help of _____.
4. They can breath with the help of their _____.



Let us hop ...

Have you seen frogs? They live on land and in water. How do frogs breathe? When they are on the land they take in air through the nostrils into the lungs and breathe. Frogs use their skin to breathe when they are in water. They use their hind legs to hop on land. The web present in the hind legs help them to swim in water.



1. Frogs use _____ to breathe in land.
2. They use _____ to breathe in water.
3. _____ is used to hop.
4. They swim in water using their _____.

Let us fly ...



Have you seen a bird flying in the sky?
Have you wondered how the bird is able to fly?
Birds are able to fly because,

1. Their body is shaped like a boat.
2. Their bones are hollow and light.

Like fish, birds also use their tail to change their direction. They use their wings to fly.

1. The birds have _____ and _____ bones.
2. They use _____ to fly.

Facts

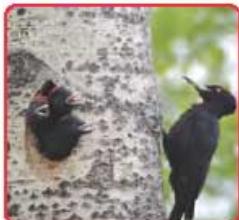
- ◆ The dove flies the longest distance.
- ◆ The ostrich is the fastest running land bird.
- ◆ Emu and Kiwi are the birds that cannot fly.



All birds are not similar. Why?

Based on their feeding habits, birds and animals have different types of beaks, teeth and legs.

Beaks



Have you seen the woodpecker?

The strong pointed beak of the woodpecker helps it to make holes on the trees.



Sparrow's beak...

The short beak of the sparrow helps it to feed on insects.



Parrot's beak...

The parrot has a hooked beak to crack seeds, nuts and fruits. Which part is used by the parrot to break the seeds for food?



Duck's beak...

The flat beak of the duck helps to catch its food from water.



Eagle's beak...

Their sharp and hooked beaks help them to tear the flesh of the dead animals.

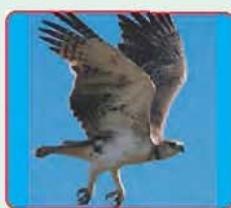


Feet and claws...

- Have you seen water birds like duck and swan which have webbed feet? They swim in water with the help of their webbed feet.
- The strong feet and claws of the eagle and the owl help them to hold their prey. They are used to catch hold of their prey as they swoop down from great heights.
- Many birds have four toes. Among them, a few have three toes in front and one at the back. Others have two in front and two at the back. This helps the birds to hold the branch of the tree firmly.



Do birds and animals live and remain in the same place?



Birds and animals move from place to place in search of food, shelter and reproduction. They move using wings, legs or fins.



'Hide and seek' of animals

Certain animals, in order to protect themselves from their enemies have special features to adapt with the environment. It is called CAMOUFLAGE.

Do you know the animals given in the picture?



Leaf insect



Chameleon



Stick insect

What do animals eat?



Look at me find out my food.

Animal	Food	Food	Animal
			
			
			
			
			

Based on the food they eat, animals are classified into three types.

Animals that feed on plants are called **herbivores**.

These animals have flat short front teeth and large jaw teeth to chew the leaves.



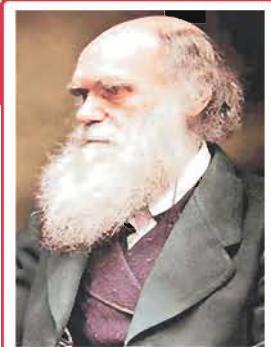
Animals that feed on the flesh of other animals are called **carnivores**. They have sharp and pointed claws and teeth to tear the flesh.



Animals that feed on both plants and animals are called **Omnivores**.



Who is he ?



Charles Darwin

He did various observations with animals and proved that man evolved from apes-the monkeys.

Evaluation:



a. Let us write :

1. Animals that live on land _____, _____, _____.
2. Animals that live in water _____, _____, _____.
3. Animals that live on trees _____, _____, _____.



b. Shall we find out the food and shelter of these birds.

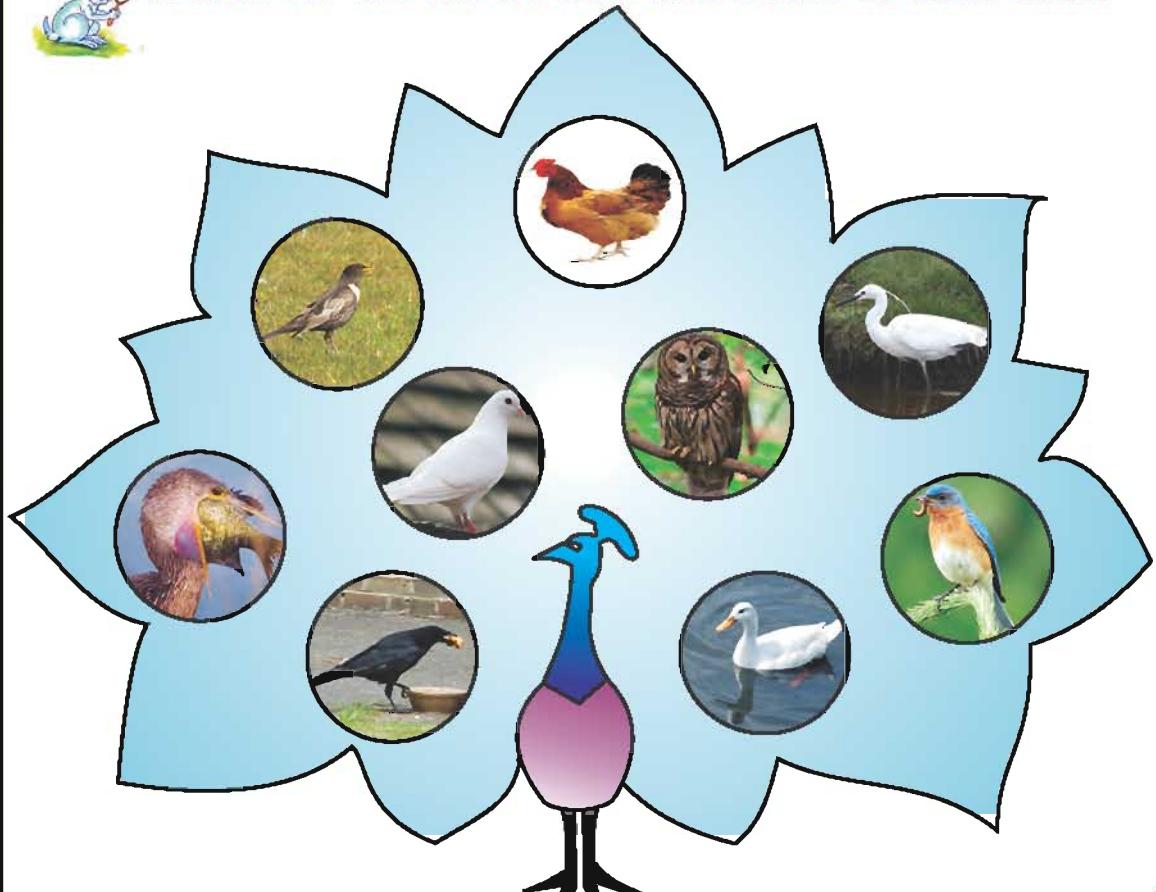


Table:

Bird	Food	Shelter
Hen		
Duck		
Owl		
Kingfisher		
Dove		
Crane		
Crow		
Myna		
Sparrow		



c. Let us find out

Circle the animals hidden in the boxes.

S	N	A	K	E
D	U	C	K	L
C	R	O	W	I
F	R	O	G	O
D	O	V	E	N

1. Animal that swallow the food _____.
2. Carnivorous animal living in forest _____.
3. Bird that travels a long distance _____.
4. This can live both in land and water _____.
5. This has webbed feet _____.
6. Omnivorous bird _____.

d. Match the following

- | | | |
|-----------|---|--------------|
| a. Crow | - | seed |
| b. Rabbit | - | grass |
| c. Parrot | - | meat |
| d. Tiger | - | worm, grains |
| e. Deer | - | carrot |

e. Shall we classify!



List the names of the animals you know.

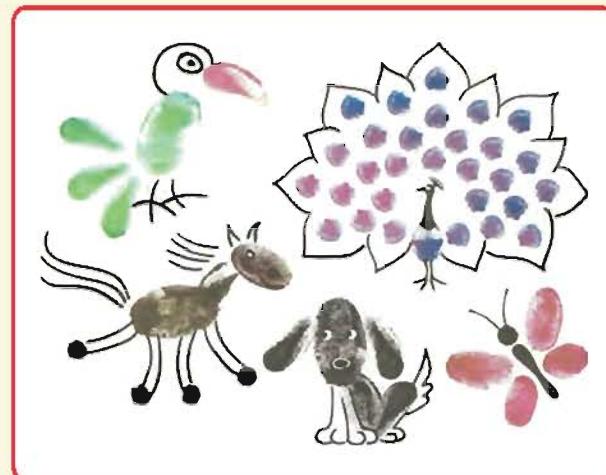
Collect the picture of these animals and prepare an album.

Herbivore	Carnivore	Omnivore

f. Let us do !



1. Apply ink on your finger tip and make impressions of your finger on paper and create animals as you like.



2. Feather pen :

Write your name with the help of hen's feather dipping it in the ink.



g. Project Work :

- ◆ During holidays, scatter some grains in your garden. Observe the beak and the feet of the birds that come to feed on the grains.
- ◆ Use different types of grains and make shapes of birds.
- ◆ Prepare an album, by collecting colour pictures of animals and birds from the newspapers and magazines.

Facts



- Fishes keep their eyes always open because they don't have eye lids
- House lizard never drinks water.

3.

SMALL CREATURES IN THE GARDEN



It was a pleasant morning. Poovizhi liked to enjoy the sunrise in the early morning. She admired nature's beauty. She was attracted by the colourful butterflies. There was a park near Poovizhi's house. It had a lot of colourful flowers blooming every day. Butterflies and honeybees in large groups visited the flowers to suck the nectar. How beautiful and colourful they were! She always observed their movement carefully.



Without making noise she went like a cat near the insects and observed them. She saw the ants moving in a line from the tree. Some ants fell into the spider web and became the food for the spiders.

She felt pity on the ants. Soon, a centipede came crawling by. As she got up to rush away, she saw a millipede with many legs crawling fast.

Poovizhi felt that the legless earthworm moving up and down in the soil was as beautiful as the millipede. When she was about to get back to her house, she saw the snail with its house on its back.

She was lost in her thoughts of wonder. She was brought back to her senses only when a mosquito bit her and flew away.

This is what Poovizhi saw.



Let us Identify the creatures seen by Poovizhi

1. In the soil _____.
2. In the pond _____.
3. In the garden _____.

When **Poovizhi** reached her house, she heard her mother's voice, "Poovizhi, it is a holiday. Why don't you help me in cleaning our house"?

"Why should we keep it clean?" She asked innocently.

If the house is not kept clean flies, mosquitoes and cockroaches will live here and harm us.

You may write the names of the insects that **Poovizhi** has seen in the house and the garden.

- 1.
- 2.
- 3.
- 4.
- 5.

- 6.
- 7.
- 8.
- 9.
- 10.

When **Poovizhi** started cleaning the house, the insects from inside and outside the house came out and made puzzles about themselves. Shall we see, what were the answers given by **Poovizhi**? They were very interesting.



Shall we find who I am!

1. We are flying insects. We have six legs and two pairs of wings. We help the flowers to become fruits.

Who are we?

Poovizhi : That's easy! **Butterfly!**



Let us do !



Make a butterfly using colourful newspapers.



2. Honeycomb is our home. Queen, Worker, Male are our family members. We have six legs and four wings. We take honey from flowers. Honey has medicinal value.

Who are we?

Poovizhi: Are you not **honey bees!**



3. I am also an insect. I have 6 legs and a pair of wings. I increase the harvest by feeding on small insects, which attack the crops. Who am I?

Poovizhi : Dragonfly.... I know about you.

4. My home is soil. My body is made up of small segments. My excreta is used as biofertilizer. By contracting and relaxing my muscles, I move forward and backward in the soil. I help in the air circulation in the soil. I am known as farmer's friend. Who am I?

Poovizhi : I know.....**earthworm!**



5. I live in pure water as well as stagnant water. I suck blood and spread diseases like malaria, dengue, chickungunia to man. I am an insect. Who am I?

Poovizhi : Aren't you the **mosquito!** Get out.

6. I am also an insect. I live in dirt and feed on decayed food. I like sweets and the food left open. I spread diseases like dysentery, cholera. Who am I?

Poovizhi : Yes, I know, you are a **housefly**.



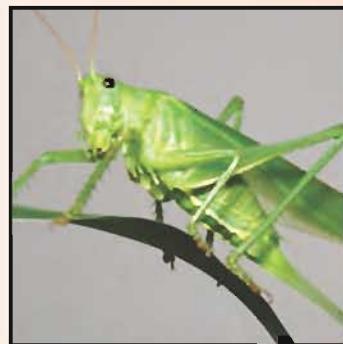
7. I am an insect. I live in dark places. I have a pair of antennae (**feelers**). I am seen in places like kitchen, storeroom and closed desks.

Who am I?

Poovizhi : Are you the **cockroach**?

8. I fly fast and I am seen in the garden. I cut and feed on leaves. I am an enemy of the farmers as I come in groups and attack the fields.

Poovizhi : Yes. You are the **grasshopper**.



Fact



- ◆ The insect that migrates the longest distance is the butterfly.

Let us think!



How are the ants able to go in line?



After puzzles, the insects started talking to Poovizhi about their food.



I eat rice, sugar, rava and all types of eatables.



Female mosquito feeds on the blood of man and animals. Male mosquito feeds on plant sap.



I eat small insects and spiders.



I feed on small insects that are trapped in my web.



I feed on the nectar of the flowers which I save in honeycomb.



I like to feed on leaves and other parts of the plants.



I feed on the dust in the soil.



I feed on honey from flowers sucking them with my tube.



Let us write !



What is my food ?

1. Snail _____
2. Honey bee _____
3. Ant _____
4. Earthworm _____
5. Spider _____
6. Butterfly _____
7. Mosquito _____
8. House lizard _____

After knowing all about the insects, **Poovizhi** went home happily, and had her breakfast after bathing.

Who is he?

He is the scientist, who introduced the system of naming the plants and the animals which is followed throughout the world.



Carolus Linnaeus

Fact



About 2 million people around the globe die every year due to insect bite.

Evaluation :



a. **Let us write !**

1. Insect that can be seen at home during night _____.
2. Farmer's friend _____.
3. Farmer's enemy _____.
4. Honey is used as _____.
5. Cholera is spread by _____.



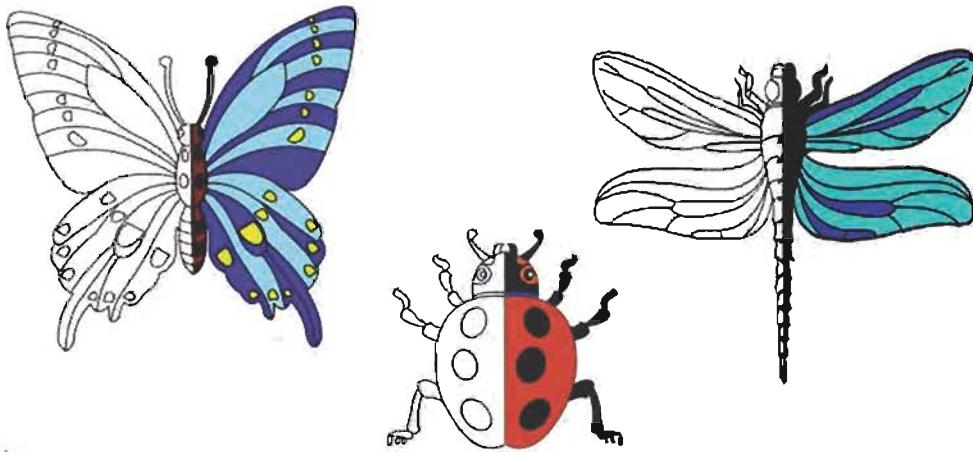


b. Let us find !

Who is the stranger ?

- ◆ Live in the soil : Ant, Earthworm, Grasshopper, Termites
- ◆ Live in trees : Snail, Garden Lizard, Squirrel, Lizard.
- ◆ Live in houses : Garden Lizard, Rat, Lizard, Spider.
- ◆ Live in water : Frog, Snail, Fish, Scorpion.

c. Let us colour !



d. Project :

1. Prepare an album with pictures of small animals that help man.
2. Observe the insects found in and around your house in the morning and in the evening. Record your observations regarding the place of their dwelling.
3. Collect pictures of different kinds of insects and discuss how they are useful and harmful to man.



4

JUNGLE SAFARI



Aathirai, her brother Kumaran and their parents went to Mudhumalai sanctuary with uncle Somu. He was working there as a guide. He promised Kumaran for a jungle safari- a trip around forest, on an elephant!

Before jungle safari ...

Kumaran : Uncle, what do you mean by jungle safari?

Uncle Somu: It is a knowledge tour. It helps us to observe about various animals living in their natural habitat, forest.

Kumaran : Uncle, what is a wildlife sanctuary?

Uncle Somu: The place where wild animals are kept in the natural surroundings is called a wildlife sanctuary.



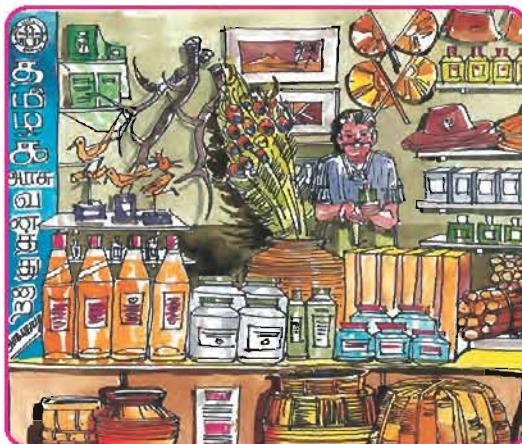
Kumaran : What is the difference between a wildlife sanctuary and a Zoo?

Uncle Somu : In a Zoo, the wild animals are kept in small cages whereas in a sanctuary, the wild animals are maintained in their natural habitat.

Kumaran : Uncle, why do people call you a guide?

Uncle Somu : Tourists visit sanctuaries and historically important places to know about their speciality. The person who helps them to know more about these places is called a guide.

Talking about all these, they reached the entrance of the sanctuary. A big shop was found.



Various products obtained from the forest were kept on display in the shop. Many of them were for sale. List the things we get from the forests.

Let us write.

List the things you see on display in the shop.

1. _____ 2. _____ 3. _____

4. _____ 5. _____ 6. _____



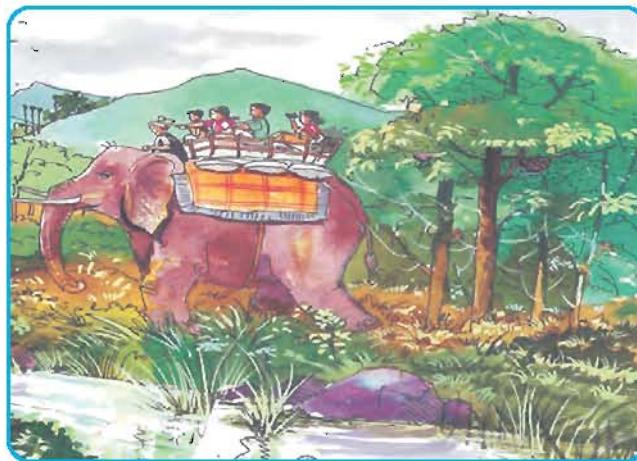
Aathirai : Uncle, from where do we get honey?

Uncle Somu : During jungle safari, I will show you the place where we get honey.

They sat on a big seat above the elephant.

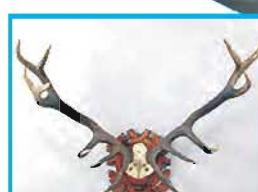
Aathirai : What is the name of the seat we sit on the elephant?

Uncle Somu : It is called Umbari in Tamil and howdah in English.



The products obtained from the forest

(a) From the animals



(b) From the Plants**Find out!**

Shall we find out the names of the plants from which the products are obtained. (any three)



The attention of all the people was drawn to the roaring of a tiger. With a shiver Aathirai questioned "Is there a tiger in this forest?"

"Do not worry. We will keep a safe distance" replied Uncle Somu. Without showing the fear outside, Kumaran asked his uncle, "Are there any other uses of the forest?"

Uses of the Forests :

- Trees help to purify the air.
- Forest promotes rainfall.
- Trees prevent soil erosion and make the soil fertile.
- Many rare animals live in the forest.
- Medicinal herbs and other valuable trees grow in the forest.

After entering into the forest ...

They were happy to see fragrant sandalwood trees, tall, strong teakwood trees and well grown bamboo bushes.

Uncle Somu said, "We get paper from bamboo tree, ornamental things from sandalwood tree and wooden things like window, door, table and chair from teak and other trees.



Kumaran was surprised to know that the milk of rubber tree is used to make cycle tyre and other rubber products.

After crossing the bamboo forest, they saw a honeycomb in a tall tree covered with leaves. Uncle showed them the honeycomb and said, "We get honey from this comb. The honey bees collect nectar from the flowers and store it in the combs".



In the stream...

They were amazed to see the elephants bathing and the deer drinking water, and the bisons walking. On the other side of the stream, they saw a python twist and turn. They were astonished at its crawling.



Aathirai : Why are the forests destroyed?

Uncle Somu : Forests are destroyed due to the increase in human population.

- Forests are destroyed for wood to build houses and dams. They are turned into agricultural lands.



- Trees are cut to prepare fragrant sprays, paper, match sticks.
- The irresponsible action of man ends in forest fire which also destroys forests.

Deforestation leads to

- Less rainfall
- Soil erosion
- Rise in temperature
- Loss of habitat of animals
- Extinction of wild animals
- There will be a scarcity of forest things, ornamental, medicinal herbs etc.,

Aathirai : Can't we prevent the forests from being destroyed ?

Uncle Somu : It is our duty to save the forest and the wild animals living in it.

To protect the forest we have to

- Plant more trees
- Prevent the hunting of wild animals
- Create awareness on the importance of preserving the forest.

As he completed his explanation the jungle safari came to an end. They again heard the roaring sound of the tiger, while they got down from the seat of the elephant, Kumaran said "Do not worry animals. I promise you that I will protect you and your environment!"

Never destroy wild habitat

To build human habitat!

Protect forest resources!

Protect our natural boundaries.



Who is she?



Wangari Maathai

She planted 3 crore young plants and won the Nobel Prize for Peace in 2004.

Grow trees ! Get rainfall !

Evaluation:



a. Let us find!

Tick the right ones and cross the wrong ones in the following activities :



b. Let us think!



Shall we fill the table with whatever we know about the forest.

S. No.	Plants	Uses	Animals	Uses
1				
2				
3				
4				
5				

c. Double Matching

- | | | |
|--------------|--------------------|------------------|
| 1. Teak wood | Medicinal products | Door |
| 2. Bamboo | Decorative items | Health |
| 3. Cardamom | House hold things | Kumkum container |
| 4. Herbs | Paper | Cooking |
| 5. Tusk | Fragrant products | Book |



d. Let us collect!

- Reasons for forest fire
- Various things you get from the forest kept in your home.
- Relationship between forest and rainfall.



e. Let's go to a field trip !

Visit a sanctuary with your teacher. Observe and collect the details about it.





Project :

1. Collect pictures of the wild animals and prepare an album stating a few things about their habitat.
2. Collect the picture of various products that we get from trees and make an album.
3. Make a model of a forest with your parent's help.

Activity



Veni and her friends went for a field trip with their teacher to a nearby sanctuary. They were enjoying the natural scenery. They were also learning a lot about forest and its uses from their teacher. A man who had come to the forest on a tour with his friends was smoking. And then he threw lighted cigarette butt on the dry grass. That's how a fire spread across the forest, causing damage to plants and animals. The children were taken to a safer place in a vehicle. On the way the teacher called the forest officials who took immediate action.

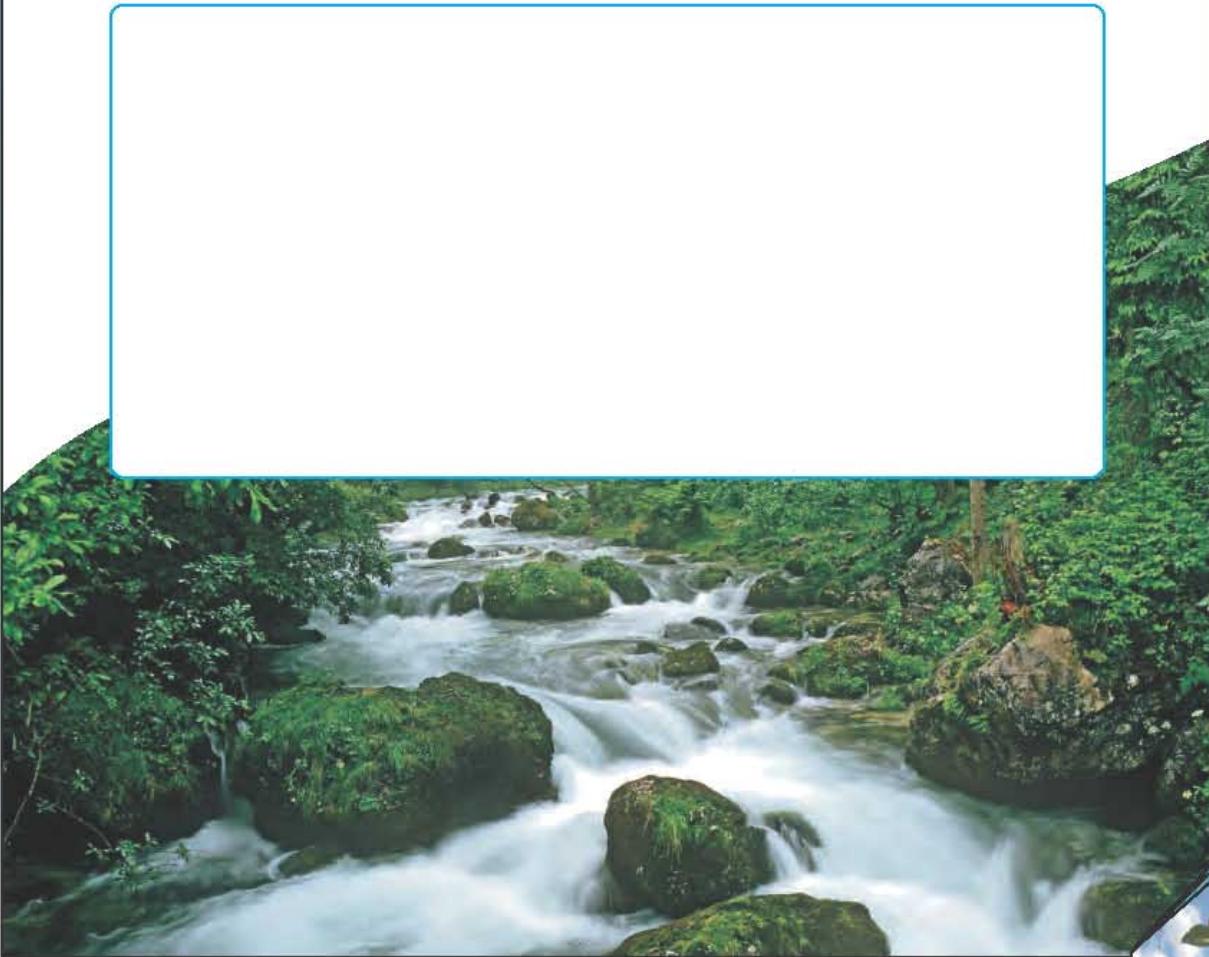
Write a complaint letter to a forest official explaining the above problem.

Letter / Complaint



We have to create awareness about the above problem among our friends and the public. Do you agree? Why don't you prepare an awareness poster by writing a slogan?

What is your possible role in preserving the wildlife habitat?



5. WITHIN US



- What are the pictures of the human organs found on the wall of the doctor's room?
- Are they found in our body?
- What are the instruments doctors use to examine and treat you?
- What do you see on the x-ray screen in the doctor's room?
- What are the uses of bones?



The Skeletal system :

- ◆ There are about 206 bones in our body.
- ◆ We cannot walk or run without bones.
- ◆ Skeletal system gives structure to our body.
- ◆ It protects important organs like heart, lungs, etc,
- ◆ Bones are made up of calcium and phosphorous.



Facts



The longest bone in our body is the thigh bone.

The smallest bone called stapes is present inside the ear.

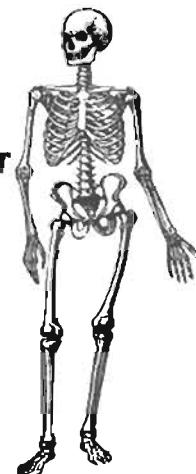
The Skull



The brain is protected by the skull.

The Joints

A joint is a place where two or more bones are held together by strong tissues.



Types of joints

1. The Immovable joints

The skull is made up of 8 flat bones. The joints present in the skull, do not move. So they are called immovable joints.

2. The Movable joints



Movable joints are of 4 types.

They are the ball and socket joint, hinge joint, pivot joint and the gliding joint.



To rotate our hands, we have ball and socket joints. We can bend our arms with the help of hinge joints.



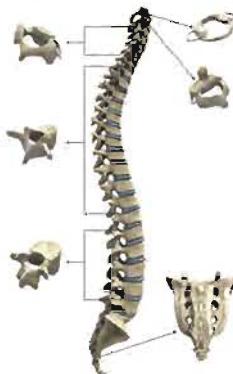
The skull is joined with the back bone with a special joint called pivot joint.



Can you rotate your wrist?

The bones present in these area move slightly.

The joints seen in wrist, ankle, back bone are called gliding joints.



Facts



- ◆ Our back bone is made up of 32 small bones.
- ◆ It helps to bend and stretch our body.
- ◆ We get Vitamin – D from sunlight. Playing in sunlight in the evening is good for the bones.

Activity



Teacher can take the students to a nearby Government Hospital or a Biology Laboratory of a High / Higher secondary school and show them the model of human skeleton.

Muscles

The muscles give good shape to our body. The muscles work along with bones for the movement of the body.

Let us do!



- ◆ Fold your arms.
- ◆ Turn your head and look at your friend.
- ◆ Walk inside the classroom.
- ◆ Are your bones cooperating with you?



Types of Muscles

1. Voluntary muscles



The muscles which work according to our will are called **voluntary muscles**.

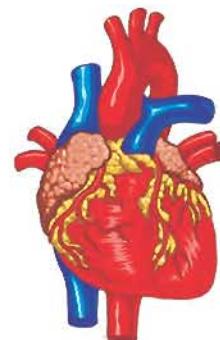


Stomach

2. Involuntary muscles

The muscles which do not work according to our will are called **involuntary muscles**. They work by themselves.

Our stomach contracts and relaxes during the digestion of food. This action is not under our control. Hence it is named as involuntary muscle.



Heart

3. Heart muscles

Heart muscles are special involuntary muscles. Due to contraction and relaxation of heart muscles, heart beat occurs.

Fact



An adult human heart beats 72 times per minute.



Bones and muscles work together to do many activities in day to day life.



Let us find!

Write down the part of the body involved in doing the above activities.

_____ , _____ , _____ .

Let us do!



Take a paper bag. Put the following things in it. Shiny paper, cardboard, pencil, sandpaper, stone, flower and eraser. Ask your friends to close their eyes and list the things inside the bag by touch.

Which organ covers and protects the bones and the tissues?

The Skin

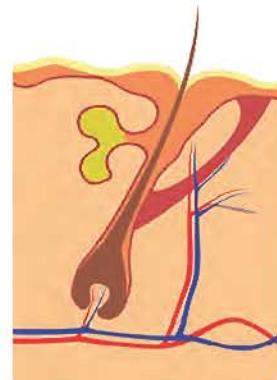


- ◆ The skin covers the entire body.
- ◆ The skin protects the internal organs.
- ◆ Skin helps in maintaining the body temperature.
- ◆ Skin is a sensory organ. It helps us to feel temperature, cold, pressure, pain, etc.,



The Hair

Hairs are present almost on all parts of the body. They help in protecting the body. There are about one lakh hairs in the head of a normal man. These give us beauty and also protect our skin from micro-organisms.



The Teeth

Let us write :



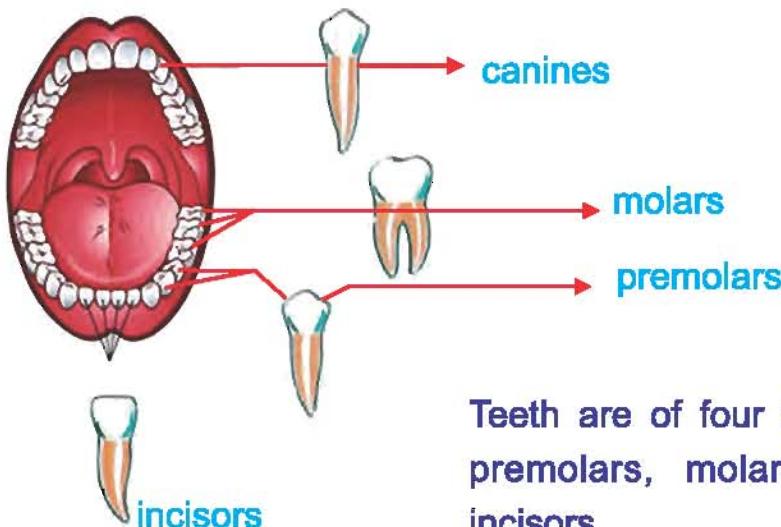
- ◆ How old are you? _____.
- ◆ Count your teeth and make a note _____.
- ◆ Have your teeth been shed? How many?
_____.
- ◆ How many teeth have erupted back? _____.
- ◆ Have your milk teeth been shed? Have they erupted back?
_____.



Food is needed for the functioning of our organs. Teeth are needed for the grinding of the food.

Milk teeth are present in childhood. They are temporary. The permanent teeth grow after 6 years. Enamel is the hardest material seen on the surface of the teeth. Teeth are composed of a chemical named calcium.





Teeth are of four types. They are premolars, molars, canines and incisors.

Let us do



Conduct a puppet show about protection of teeth with the help of the teacher.

Facts

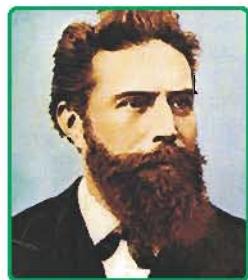


Cool drinks and sweets taken in excess become dangerous.

The chemical present in them causes cavity in teeth.

- ◆ Let us keep our bones, muscles and teeth healthy.
- ◆ Let us take nutritious food and do proper exercises to be healthy.
- ◆ It is good to brush your teeth in the morning and at night.

Who is he?



Röntgen

Röntgen discovered X-rays which help to identify fracture in bones.



Evaluation

a. Let us write :



1. _____ joint is present in the ankle.
2. Skull has _____ joints.
3. _____ are special involuntary muscles.
4. _____ teeth are found in children.



b. Find out who I am ?

(Gliding joint, teeth, bone, heart muscles, pivot joint)

1. I am composed of calcium.
2. I am an involuntary muscle present in rib cage.
3. I am a joint, I help to turn your head.
4. I am a joint. I am present in your wrist.
5. I help to chew your food.

c. Circle the Joints





d. Let us collect!

- i) Observe the teeth of your friend. Is it looking different? Draw a picture of incisors and molars in a note book. Later compare them.
- ii)
 1. How to protect your teeth?
 2. What will you do to protect your skin?
 3. If your backbone is a single long bone, what will happen?
Think about it.

e. Let us match.

Crocodile



Frog



Rabbit



Fish



Horse



f. Project :

1. Find out the joints mostly used by dancers and sportsman during their activities. Prepare an album of the joints.
2. Make a model of lungs using balloons, cotton and a "Y" shaped tube. Explain.



'I can, I did'
Student's Activity Record

Subject :

Sl. No.	Date	Lesson No.	Topic of the Lesson	Activities	Remarks