



# **SCIENCE**

## **STANDARD FIVE**

### **TERM I**

## What these icons stand for!



Fact



Do you know?



To think



Evaluation



Project



Do and See / Activity



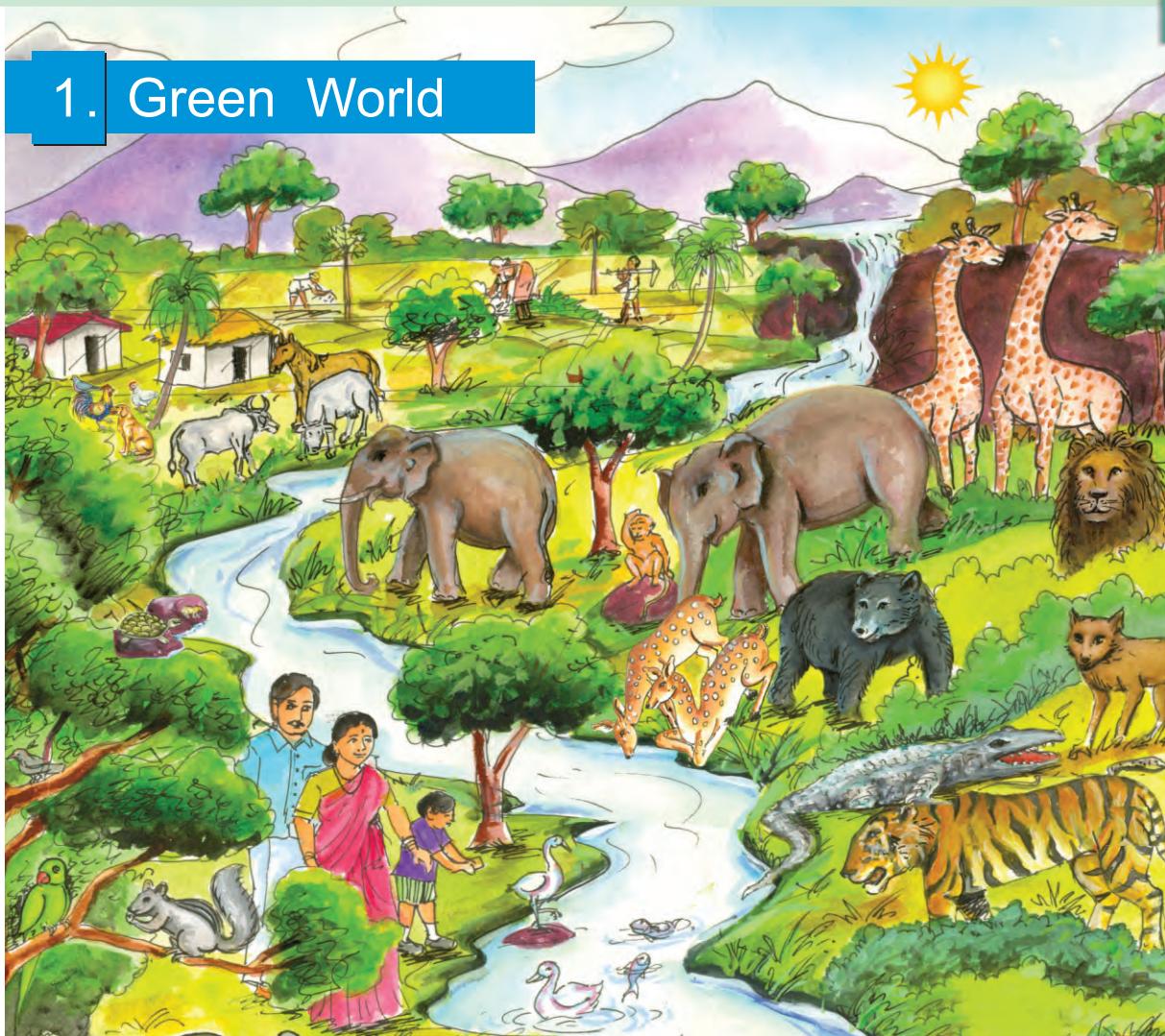
For your attention



For Teachers



## 1. Green World



### Chain of Life

The picture above shows the connection that exists between Sun, Plants, Birds and Human beings.

- The plants are able to produce the food needed for their existence using **solar energy**.
- The birds and human beings depend on **plants** for their food.
- **Birds** build their nests in the trees.
- **Trees** give shade.

Land, Water, Sun, Wind

– Non-living Factors

Plants, Animals, Human beings

– Living Factors



From the given picture, you might have learnt the connection that exists between the living and non-living factors. Likewise, choose different living and non-living factors and tabulate the dependence that exists between them.

S. No.	Factors	Life connections
1.	Water, Grass, Deer	<ul style="list-style-type: none"><li>● Water is essential for the growth of grass.</li><li>● Deer eat grass as their food.</li><li>● Water is necessary to quench the thirst of the deer.</li></ul>
2.	_____	_____
3.	_____	_____



## Pollination

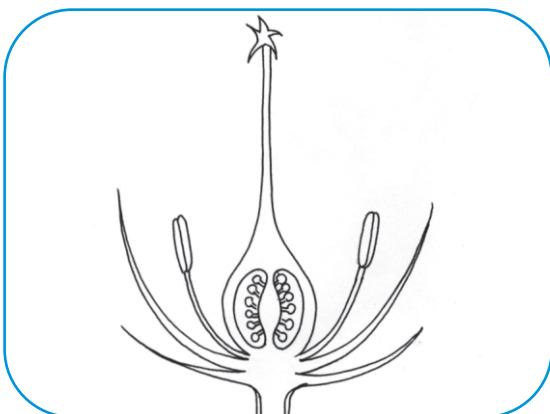
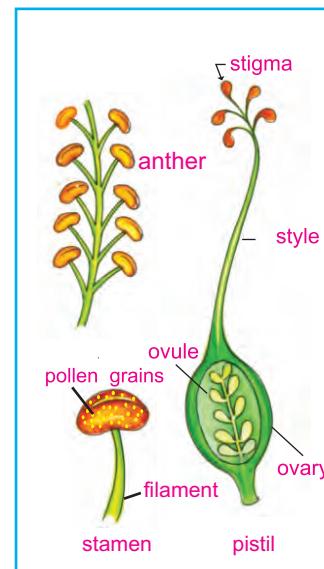
Arun and Kavitha came back from the school. After having their snacks, they went to their garden. They watered the tomato plants.

Kavitha asked her brother, "How are fruits and vegetables produced by plants?"



(Arun plucked a flower from the plant and showed it to his sister)

**Arun :** Kavitha, look at this flower. This is male part of the flower - **stamen**. It consists of **anther** and **filament**. These are **pollen grains** which are found in the **anther**. This is female part of the flower - **pistil**. This is the **stigma**. This is the **style**. The lower part is called the **ovary**. It consists of ovules. The pollen grains in the anther goes to the stigma and **fertilization** takes place within the ovary. The ovary becomes the fruit and gets ripened. The **ovule** becomes the seed and gets embedded there.



The transfer of pollen grains from the anther to the stigma is called pollination.



The transfer of pollen grains from the anther to the stigma of the same flower is called self pollination.

Kavitha : How does the pollen grains reach the stigma?

Arun : Haven't you seen insects, butterflies and bees flying from one flower to the other? When they fly, they carry the pollen of one flower and it reaches the stigma of another flower.



- The transfer of pollen grains from the anther of a particular flower to the stigma of another flower of the same kind is called cross-pollination.
- Cross-pollination can also take place through air.

## The spreading of seeds

Arun and Kavitha, each ate a mango and threw the seeds in their backyard. After a few days, Kavitha happened to see a new plant growing there. "Look at this plant. Who planted this here?" asked Kavitha to Arun. Arun answered, "Kavitha, do you remember the mango seeds thrown by us the other day? It is a new mango plant shoot from that".



This shows that seeds are scattered in farms and fields not only by the action of the plants themselves, but also by the effort of human beings.



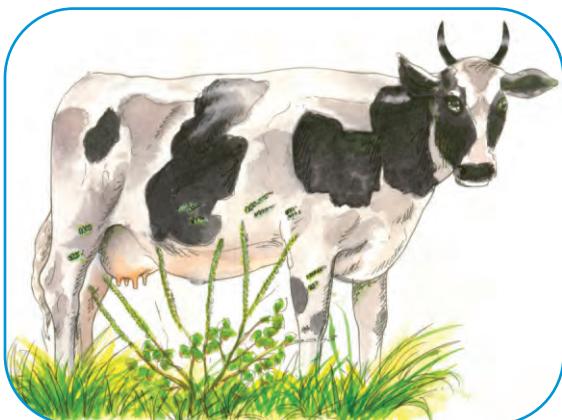
In addition, seeds are also spread by the action of **wind**, **water**, **animals** and **birds**.



Spreading of seeds  
through wind.



Spreading of seeds  
through water.



Spreading of seeds  
through animals.



Spreading of seeds  
through birds.

The process by which seeds are spread from one place to the other by air, water, human beings, animals and birds is called the dispersal of seeds.



## Because of the dispersal of seeds...

- There is spreading of plants.
- Plants are grown in newer environments.
- The species of plants are preserved.
- Plants prevent atmospheric pollution.

Let us learn the places of origin of some plants.

Asia	Africa	Europe	South America
Broad beans	Coffee	Peas	Tomato
Onions	Lady's Finger	Cabbage	Potato
	Watermelon	Goose Berry	Maize
			Guava

### To think:

Observe the food items tabulated above, can you now tell how their plants came to India from other countries ?





India is the birthplace of **banyan tree**, **tamarind tree**, **neem tree** and the **mango tree**.



Banyan tree



Tamarind tree



Neem tree



Mango tree

Shall we learn how the seeds are spread and what are the factors needed for the dispersal of seeds?

### 1. Air:

Arun and Kavitha went to Yercaud with their parents. The bus was climbing the mountain. The family was enjoying the beauty of nature.

**Kavitha :** “Father, how did so many trees grow here even though human beings have no access here?”. Don’t those trees look centuries old?.



Her father, started to explain, “Kavitha, do you see fibres gliding in the air?” Those are the seeds of silk cotton.



They spread through wind, land on the soil and grow as trees. That's how varieties of trees grow on the mountain making it look beautiful".

The seeds of trees like silk cotton, drumstick and calotropis (erukku) are spread though air.



Silk Cotton



Drumstick



Calotropis (erukku)

## 2. Water:

After climbing down the mountain, the bus was crossing a bridge. The mountain was covered with green trees and plants. The land looked fertile. Coconut trees and saplings were found on the river banks. Kavitha's family was lost in the beauty of nature. "How did these coconut trees grow up here?" asked Kavitha to her father.

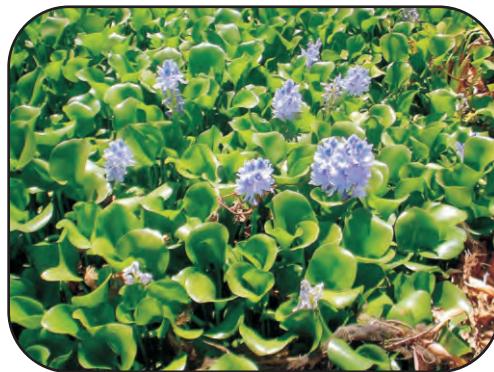


What would be the answer of Kavitha's father?

The seeds of plants like coconut, water hyacinth, lily and lotus are spread through water.



Coconut



Water Hyacinth



Lily



Lotus

### 3. Spreading of seeds by explosion:

After returning from Yercaud, Kavitha went for a walk in the garden. She saw the dry pods of Lady's finger exploding and the seeds being flung out. Will there be new plants coming from these seeds? she wondered.

What do you think?



Lady's Finger

Seeds of plants like lady's finger, black gram, black-eyed pea, and balsam spread through explosion .



black gram



black-eyed pea



balsam

#### 4. Animals :

Arun observed plants like Chaff and Achyranthus near his cow shed. Whenever he saw these plants, he used to ask himself how these plants grew there. One day, as he was lost in the same thought, he happened to look at the cow which had just returned from the field after grazing. He saw some seeds and grass stuck on its body. Now Arun must have got the answer to his question. Don't you think so?



Seeds of plants like rough chaff, grass and achyranthus spread through animals.



## 5. Birds :

On a holiday, Arun and Kavitha went to play in a nearby playground. On the way to the ground, Kavitha saw a plant growing on the wall of an old house.

She asked her brother, “Look at that plant growing on the wall. Who would have sown the seed over there?”

**Arun** : “Oh... Let me tell you that! This plant has grown because birds like crows, parrots, mynahs and sparrows eat fruits, and the



seeds come out when they pass their waste. When these seeds from birds droppings fall in some place, they sprout and become huge trees”.

### Activity :



### Seeds Exhibition :

Divide the students into five groups. Each group should collect varieties of seeds. Categorize the seeds according to their methods of dispersal and explain this to others.



Can you name the seeds spread by the following living and non-living factors ?

Air : \_\_\_\_\_

Water : \_\_\_\_\_

Bird : \_\_\_\_\_

Animal : \_\_\_\_\_

Human Beings : \_\_\_\_\_

### Plants - The Primary Producers:

Arun was having his dinner along with his parents and sister.

Kavitha : “Daddy, we take food for energy and growth of the body. How do trees, plants and creepers which produce the fruits and vegetables that we eat, take their food?”

Arun : “Good question! Plants produce their own food”.

Kavitha : “How is that? Please explain it to me”.

Arun : “Plants produce their food through photosynthesis. As they produce their own food through photosynthesis, we call them as **primary producers**.



## Primary Producers

Plants are the primary sources of food for all living organisms that exist on earth.

### EVALUATION

#### I. Choose the right answer:

1. A non-living factor
  - a) plants
  - b) animals
  - c) sun
  - d) human beings.
2. The part of a flower which becomes the fruit
  - a) pollen grains
  - b) corolla
  - c) stigma
  - d) ovary
3. A plant that spreads its seeds through water
  - a) lady's finger
  - b) calotropis
  - c) coconut
  - d) rough chaff
4. Primary producers of food
  - a) animals
  - b) plants
  - c) birds
  - d) human beings
5. A plant that spreads by explosion
  - a) pomegranate
  - b) lady's finger
  - c) tomato
  - d) brinjal





## II. Match the following :

- |                |                             |
|----------------|-----------------------------|
| 1. Black Gram  | a) Spread through air       |
| 2. Coconut     | b) Spread through animals   |
| 3. Calotropis  | c) Spread through explosion |
| 4. Achyranthus | d) Spread through birds     |
| 5. Banyan Tree | e) Spread through water     |

## III. Circle the odd man out :

- |                          |                   |                         |
|--------------------------|-------------------|-------------------------|
| 1. field bean, rice,     | black gram, peas, | toor dhall              |
| 2. lotus, calotropis,    | lily,             | coconut, water hyacinth |
| 3. calotropis, plantain, | coconut,          | mango                   |
| 4. lotus, lily,          | mango,            | water hyacinth          |

## IV. Answer in one or two sentences :

1. Mention any three factors that influence the spreading of seeds.
2. What is dispersal of seeds?
3. Give any two examples for spreading of seeds through water.
4. What is pollination?
5. Give any two examples for spreading of seeds through air.
6. Give two examples of living and non-living factors for dispersal of seeds.

## V. Answer in detail :

1. Draw a Hibiscus flower and label its parts.
2. Write about the different ways of spreading of seeds.



3. Observe the picture given below and answer the questions.



- Which part of the flower attracts insects ?
- In which part of the flower does fertilization take place ?
- Which part of the flower develops into fruit ?
- Which part of the flower becomes the seed ?
- Where does pollination take place in a flower ?

4. Complete the table

S.No	Seed	Dispersal factors
1.	Silk Cotton	
2.	Achyranthus	
3.	Lady's Finger	
4.	Water Hyacinth	
5.	Neem Tree	

#### VI. Project :

- Prepare a flow chart showing your relationship to the living and non-living things around you .
- Find out how the seeds of the plants ( which are found near your house and school) are spread. Prepare a report on this.
- Collect different types of seeds in and around your house.





## 2. Dwelling Places of Animals



A dense forest. A conference was held to solve the problems of animals. The venue was full of animals. The lion was the president of the conference.



"Let us begin the conference with a prayer song" said the bear who was compering the programme. So the cuckoos sang a prayer song and the wild dog welcomed the gathering. All the animals started to express their grievances to the king.



"Silence! Silence! I'll give everyone a chance to speak" said the lion.



On behalf of all the animals the elephant who spoke first said, "we are not getting enough food and water. Our habitat is slowly diminishing and the area of grazing ground is much reduced".

The lion roared, "Can you tell me the reasons for this"?

"Human beings are cutting down trees and destroying the forest. Where can we, who depend on the forest, go? Day by day our habitat is being reduced" said the elephant.

The lion invited the spotted deer to speak next.

The natural environment in which the organisms live is called the habitat.



### Fact

Our National Animal is the tiger





Immediately the spotted deer came leaping forward and said, “ Rainfall is decreasing, water resources are dwindling, the climate is changing, global warming is taking place. Animals are dying of unknown diseases. Dry lands are increasing. Some animals have become extinct and many are on the verge of extinction. The water cycle has been disturbed. Biosphere is polluted. There is a shortage of food.

The above ecological problems have caused the reduction of our habitat and the decline of our species,” stated the spotted deer.

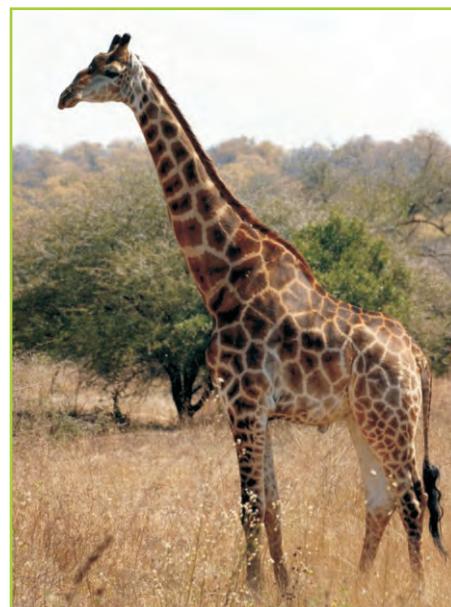
The lion ordered everyone not to leave their habitat and enter into human habitat. Then the lion called the giraffe to the stage to explain the reasons for his order.

The giraffe bowed down and started to explain, “Human beings have now started to realize the importance of forests. They are planting new varieties of saplings and are giving importance to the protection of living organisms. To save living things they have established Sanctuaries and National parks. They have become kind and are now taking care of animals.



#### Do you know?

The wild animals are entering human habitation due to the reduction of their environmental habitat.





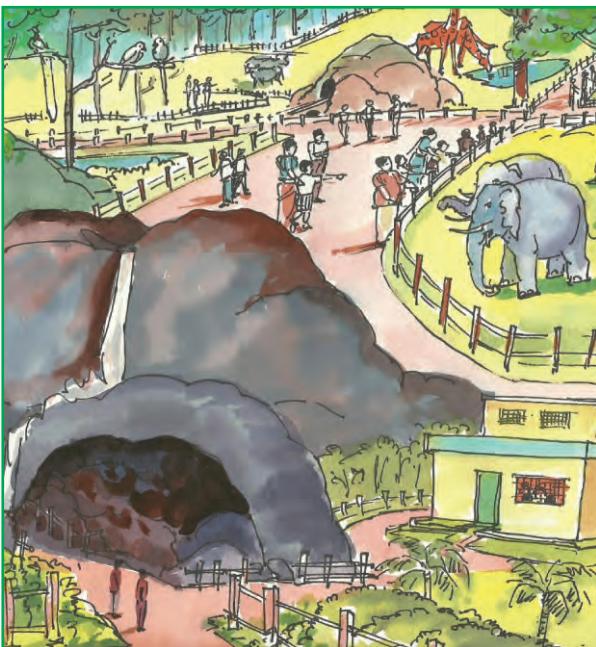
They also give importance to the ecological balance" said the Giraffe. The rabbit exclaimed "Sanctuaries!". "Yes, it is a protected place for us. Mundanthurai is the sanctuary for me", said the tiger.



A sanctuary is a protected environment where animals can live and reproduce .

The giraffe read out a long list of sanctuaries available for other animals in Tamilnadu.

S.No.	Animals	Sanctuary / National park		
1.	 Deer	Guindy National Park, Chennai District		
2.	 Birds	Vedanthangal, Kancheepuram District		
3.	 Elephant	 Wild bull	Mudumalai, Nilgiris	
4.	 Tiger	 Panther	Anaimalai, Coimbatore District	
5.	 White Tiger	 Jackal	 Monkey	Arignar Anna Zoological park, Kancheepuram District



### Do you know?

- To develop an environmental awareness among people, schemes like social forestry, planting of saplings during school and government celebrations, is encouraged.
- There are 17 wild life sanctuaries and 66 National parks in India.



The programme co-ordinator announced that it was time for a break. After the break, the lion asked the rhinoceros to lead the session.



The topic for the session was “Cruelty Against Animals”. The deer said, “people are hunting us for our skin, flesh and horn”.



### Facts

- The first National Park found for the safety of wild animals in India is “Corbett National Park” in Uttarakhand established in 1936.
- SPCA – Society for Prevention of Cruelty to Animals





What would have been the grievances presented by the following animals while discussing the topic “Animal cruelty?”.

S.No.	Animals	
1.		_____
2.		_____
3.		_____
4.		_____

The tiger delivered the vote of thanks at the end of the conference. Then all the animals returned to their habitat happily and peacefully with the satisfaction of having successfully completed the conference.





## Do you know?

- 1952 – Indian Board for wild life was formed.
- 1955 – Celebration of Wild Life Week was introduced.
- 1972 – Wild Life Protection Act comes to force.
- 1983 – National Wild Life Action Plan was introduced.
- 1986 – Establishment of National Parks and Biosphere Reserves by the Government of India.



## For Teachers



Take Students on Field Trip to any nearby National Park or Sanctuary.

## EVALUATION



### I. Choose and write the correct answer :

1. Where is the sanctuary for Tigers in Tamilnadu?  
a) Kalakadu                      b) Mundanthurai  
c) Vedanthangal                   d) Guindy
2. When did the National Wild Life Action Plan start?  
a) 1952                            b) 1955                            c) 1983                            d) 1986
3. Where is the sanctuary for deer in Tamilnadu located?  
a) The Nilgiris    b) Anaimalai    c) Mudumalai    d) Guindy

### II. Fill in the blanks :

1. The place where organisms live naturally is called \_\_\_\_\_
2. Lack of rain leads to the increase of \_\_\_\_\_
3. The number of National Parks in India is \_\_\_\_\_



4. To protect the animals which are on the verge of extinction \_\_\_\_\_ and \_\_\_\_\_ were established.

5. Our National Animal is \_\_\_\_\_

### III. Write True or False :

1. Sanctuaries are established to protect wild animals.
2. The environment will be polluted by the destruction of forests.
3. India's first National Park was Corbett National park.
4. "The Wild life Protection Act" has been implemented in 1952.

### IV. Match the following :



Gir Forests



Mudumalai



Mundanthurai



Vedanthangal



Guindy



## V. Answer in one or two sentences :

1. What is a sanctuary?
2. What is a habitat?
3. Where is the bird sanctuary located in Tamilnadu?
4. Mention the names of any two National parks in Tamilnadu?
5. Mention any two factors that cause the reduction of animal habitat.

## VI. Answer in detail :

1. What are the disadvantages of the destruction of forests?
2. List National parks found in India and the animals which are living in them.
3. What are the steps taken by the government to protect animals?

## VII. Project

1. Collect the pictures of some wild animals and sanctuaries and prepare an album.
2. Draw a picture on kindness towards animals.
3. If the habitats of forest animals are destroyed, what will be the consequences?
4. Collect and paste pictures related to afforestation and deforestation with slogan.





### 3. Butterfly and Honey Bee

Malarvizhi saw a butterfly flying over a rose flower in her garden.  
She went towards it and sang.



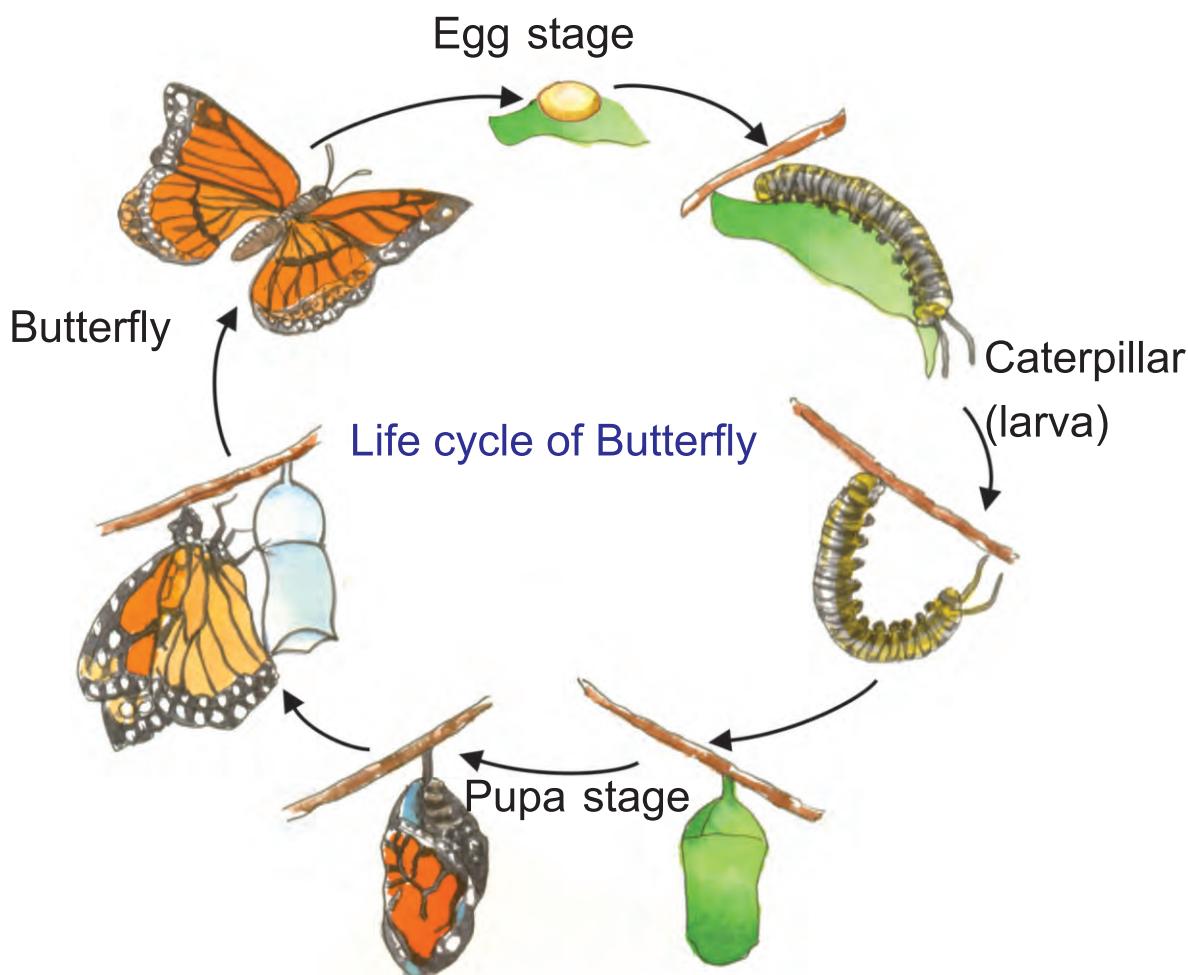
Butterfly, butterfly, so colourful and free  
From flower to flower you flit and flee  
What do you seek as you flutter your wings,  
In my garden full of lovely things?  
I see you kiss every flower that is in bloom  
While fluttering about here and there as you roam!  
Oh! unexpected guest to my garden plants,  
Be my friend and tell me your wants  
Tell me of your travels on earth  
And enlighten me of your wonderful birth.



The butterfly answered, "I will tell you my life history. Listen!"

My name is butterfly. I am an insect who flies freely everywhere. I have many beautiful colours. My species is found throughout the world. My life story is a unique one.

Most animals give birth to young ones. Birds hatch their eggs and multiply. But I, the butterfly, have to go through four stages before I become fully grown.





The mature female butterfly searches for a suitable place to lay its eggs. Most often it lays its eggs on the lower side of leaves. The egg is my **first stage**.

The eggs hatch after five days and I come out as a caterpillar. I eat the nearby leaves in plenty. Within a few days, I consume food that is more than my body weight. During this stage I am green or grey in colour. I have coloured stripes on my body. This is my **second stage**.

After a few days, I build a covering around my body. In this stage I am completely inside the covering called cocoon. This is called the pupa stage. During this stage, a lot of wonderful changes take place in my body. Body organs and wings develop. This is my **third stage**.

After the completion of my growth, I break open the cocoon and come out as a beautiful butterfly. This is my **fourth stage**.

After passing through the four stages ,I am now as you see me, a beautiful adult butterfly courting the pretty flowers in your garden. Thus the butterfly ended the story of its life.

"Indeed, your story is unique! Thank you!" said Malarvizhi.

### Facts



- Assam and Sikkim states in India are referred to as havens for butterflies.
- The "Queen Alexandria" butterfly seen in New Guinea is the largest in the world. (Length:25 cms)

#### The four stages of butterfly

- |               |                      |
|---------------|----------------------|
| 1. Egg stage  | 2. Caterpillar Stage |
| 3. Pupa Stage | 4. Adult Butterfly.  |



## Do and See :

(with the help of your teacher)



- Take an empty wide mouthed glass bottle.
- Place Calotropis leaves, with butterfly eggs, inside the bottle.
- Tie the mouth of the bottle with a piece of fine cotton cloth.
- Observe carefully everyday till the adult butterfly emerges.



## Do you know ?

- A butterfly has six legs.
- Taste buds are found on the legs of a butterfly.
- Butterflies have no eyelids or eyelashes.
- Butterflies sleep at night with their eyes open.
- Butterflies communicate with each other through body movement, colour and sound.





Malarvizhi shared her knowledge of the butterfly with her uncle..

"Uncle, I heard that you are keeping honey bees in your garden. Will you please tell me about the life of bees ?" "Yes!" answered her uncle.

Her uncle sang a song and explained the facts about bees and their activities.

The song went like this



"What are you busy with, O vibrant bee ?  
I am busy collecting honey with glee !  
What do you do with the collected honey, O beautiful bee ?  
I preserve it in my home sweet home; come and see !  
What do you do in your home sweet home, O my busy bee ?  
I enjoy the taste of honey, want to join me !  
What will you do if I destroy your home, my lovely bee ?  
Then very violent will my nature turn to be !  
I'll sting and sting and chase thee.

Honey bees are social insects. They live in a colony. They are very active and hardworking. They help in cross-pollination. They collect nectar. Rearing of honey bee is known as apiculture and it is very beneficial.

In a honeycomb, there are **three types** of honey bees.



Queen Bee



Male Bee



Worker Bee



Queen bees are big in size. There is only one Queen bee in a hive.

The maximum life-span of the Queen bee is about two years.

Male bees are smaller than the Queen bee, but bigger than the workers. They help only in reproduction.

They are also called the Drones.



The Worker bees do a lot of work, such as constructing the honeycomb, collecting the nectar, protecting the comb from enemies. The worker bees are very active sterile females. The maximum life span of the worker bee is 28-38 days.

Some kinds of bees are

1. Mountain bees
2. Little bees
3. Indian bees

## Uses of honey.

Honey is very tasty. It has medicinal properties, too. If we eat pepper with honey it cures cold and cough. It has high nutritional value. It is a good cure for anaemia. It also heals ulcers in the intestines.



### Do you know?



The honey bees flap their wings 200 - 230 times per second. This produces a buzzing sound.



“Apiculture is a good cottage industry”, completed Malarvizhi’s uncle.



#### The composition of honey is

Water	17%
Glucose	31%
Fructose	38%
Maltose	10%
Albumin	2%
Inorganic Salts	1%
Vitamins and Calcium	1%

#### Do you know?

- To collect 425 gms of honey, the honey bees have to suck the nectar of 20 lakhs of flowers.
- Honey does not get spoiled for years.
- There are 3200 calories of energy in 1kg of honey.
- Tamilnadu takes the prime place in the production of honey among the Southern states.
- At Marthandam, in Kanyakumari District, more than 25 million kg of honey is collected per year.



#### Fact

The honey bee is an example for social behaviour, activeness, leadership and teamwork.



## EVALUATION



### I. Choose the right answer :

1. There are \_\_\_\_\_ stages in the life history of butterfly.  
a) one      b) three      c) four      d) two
2. In the life history of butterfly, the third stage is \_\_\_\_\_  
a) pupa      b) caterpillar  
c) egg      d) Adult butterfly
3. The wings will grow at the \_\_\_\_\_ stage of butterfly.  
a) caterpillar    b) egg    c) pupa    d) adult
4. How many types of honey bees are found in honey comb?  
a) 1      b) 3      c) 4      d) 2
5. Which is the largest honey bee?  
a) Queen bee      b) Male bee  
c) Indian bee      d) Worker bee

### II. Fill in the blanks :

1. \_\_\_\_\_ is the biggest butterfly in the world.
2. Butterfly lays its eggs on \_\_\_\_\_.
3. Male bees are used for \_\_\_\_\_.
4. \_\_\_\_\_ district stands first in the production of honey in Tamilnadu.
5. Worker bee is \_\_\_\_\_.



### III. Write True or False :

1. Butterfly lays eggs and hatches them.
2. Butterfly completes its life cycle in the third stage.
3. Butterfly has grey stripes on its body in its fourth stage.
4. Bees help in cross pollination.
5. Honey is the best medicine for anaemia.

### IV. Match the following :

- |               |                         |
|---------------|-------------------------|
| 1. Egg        | a) third stage          |
| 2. Pupa       | b) high nutritive value |
| 3. Honey bees | c) protecting the comb  |
| 4. Worker bee | d) first stage          |
| 5. Honey      | e) busy in nature       |

### V. Answer in one or two sentences :

1. Name the stages in the life cycle of a butterfly.
2. How many days does it take for the egg of the butterfly to hatch into a larva?
3. Classify the honey bees.
4. State the composition of honey.
5. Enumerate the uses of honey.
6. What lessons do we learn from the honey bee?

### VI. Answer in detail :

1. Draw the life cycle of a butterfly and explain.
2. "Honey bees are social insects" – Elaborate.



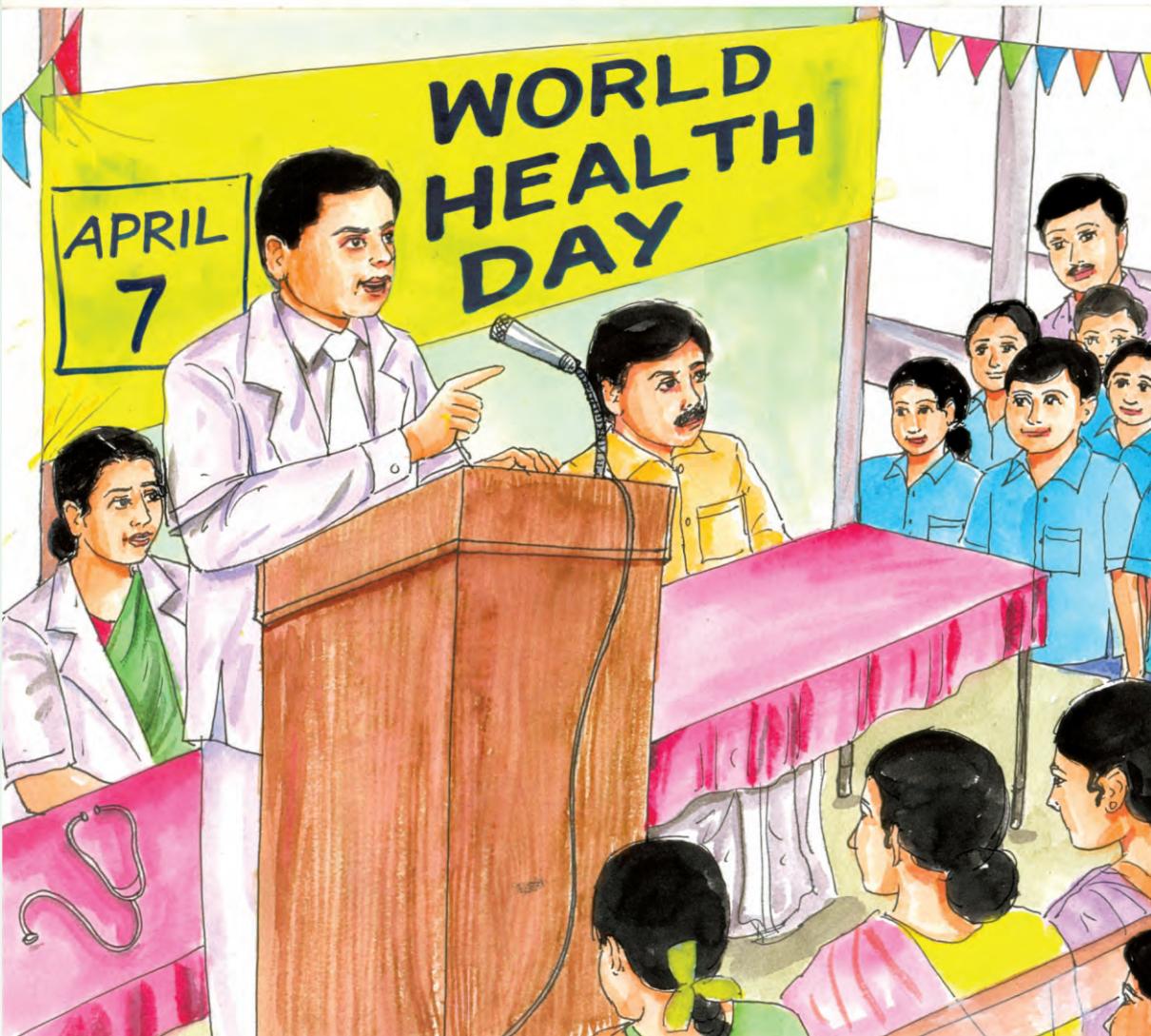
## VII. Project :

1. Collect different insects and prepare an album.
2. Visit an apiculture cottage industry.
3. Collect pictures of different varieties of butterfly and prepare an album.





## 4. Human brain and Sense organs

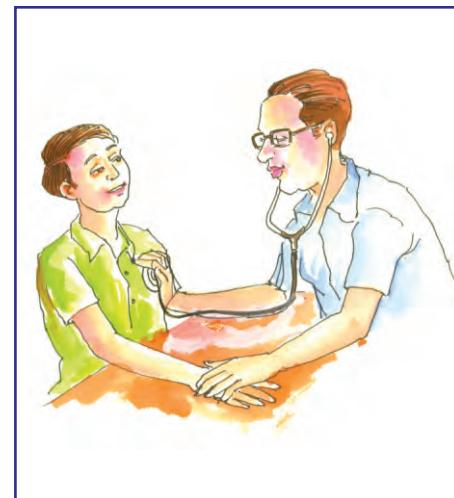


SCIENCE

On April 7th, World Health Day was celebrated in a Panchayat Union Middle School, Puthukulam. The chief doctor of the Public Health Centre presided over the function.



After the inaugural function, a medical check-up was done to all the students in that school. In the afternoon, the doctor conducted an awareness programme for the students on health and hygiene. He explained about the brain and the sense organs through a power point presentation.



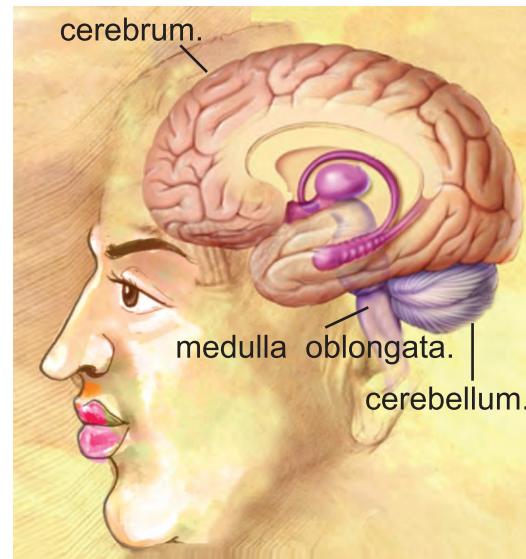
## The Brain

### Structure of the Human brain

- The brain is kept in a bony case called Cranium or Skull. It is made up of eight immovable bones.
- The brain is protected by three membranes called meninges.
- The brain is made up of tiny nerve cells called neurons.
- The brain is the centre of the nervous system.

The brain is made up of three parts.

1. The cerebrum.
2. The cerebellum.
3. The medulla oblongata.

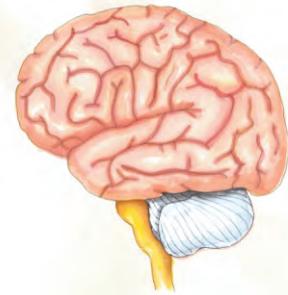


### The cerebrum

- It is the largest part of the brain.
- It is the centre of man's memory.



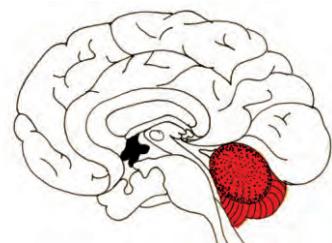
- Man is able to learn and understand languages and interpret signs and symbols with the help of the cerebrum.
- The right side of the cerebrum controls the left side of our body and vice versa.
- The cerebrum is responsible for intelligence, imagination and reasoning.



cerebrum.

### The cerebellum (Little brain)

- It lies behind the cerebrum.
- It co-ordinates the movements of the muscles of our body.
- It helps to maintain the balance of the body.



cerebellum.

#### Do you know?

1. Why does a man who has taken excess alcohol lose balance?



Under the effect of alcohol, the cerebellum fails to control and co-ordinate the different muscles responsible for walking and talking. Hence a man, who has imbibed excess alcohol loses balance and he is unable to walk and speak properly.

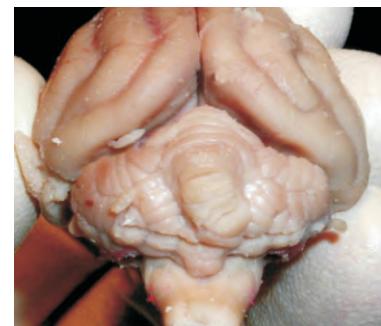
2. A passenger who sleeps while travelling in a bus falls back and forth. Why?

When a person sleeps, the cerebellum is at rest and the balance of the body is not maintained. As a result, a passenger who sleeps while travelling in a bus falls back and forth.



## The medulla oblongata

- It is also called the brain stem.
- It is called ‘vital knot’ because it controls breathing, heart beat and other involuntary muscles.
- It connects the brain to the spinal cord.



medulla oblongata

## Functions of the brain.

- It is a decision maker.
- It controls all the movements of the body.
- It is responsible for human intelligence, memory and imagination

## For the protection of brain

- Avoid alcohol and drugs.
- Take care if you have a head injury.
- Wear a helmet when you ride a two wheeler.

### Do you know?



- The brain needs a continuous supply of oxygen for better functioning.
- The brain loses the ability to function if it does not get oxygen for more than 4 minutes.
- Enough sleep and healthy food increases the efficiency of our brain.

## To Teachers

Protection of our head is important – Discuss.



## The Sense Organs

There are five sense organs in our body. They are

1. The eyes
2. The ears
3. The nose
4. The tongue
5. The skin

### Importance of our sense organs

- Our sense organs serve as windows to the outside world.
- They collect information from the outside world and send it to the brain through nerves. The brain receives the information and orders for action.

### The eyes

- The eyes are the organs of sight.
- They are safely placed in a bony socket.
- The eyelids and eyelashes protect the eye from dust particles and injuries.



### Care of eyes

- We must wash our eyes with cold water everyday.
- We must not read in dim light.
- We must not look at dazzling lights.
- While reading and writing, we must keep the materials at a proper distance from our eyes.
- We must avoid reading while travelling.



- Do not rub your eyes when dust particles fall into it.
- Watching TV or playing video games for long hours causes damage to our eyes.
- Do not apply any medicine to your eyes without medical advice.
- Eat green vegetables, carrot and dairy products which contain Vitamin A. Vitamin A is necessary for good vision.

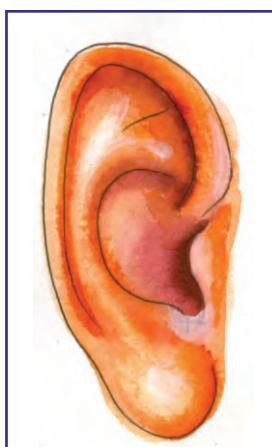
#### For your attention:

If you are unable to read what is written on the blackboard in the classroom, inform your parents and consult an ophthalmologist. (Eye specialist)



#### The ears

- The ears collect sounds from the surroundings and send it to the brain through the auditory nerves.
- We are able to distinguish different sounds.
- Our ears do the functions of hearing and balancing.



#### Care of ears

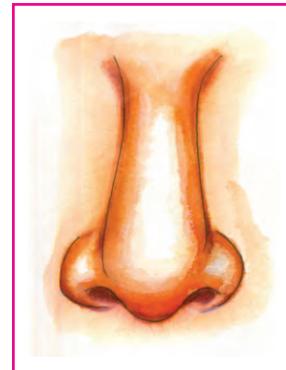
- Do not use sharp objects to clean your ears. It may damage the ear drum.
- Avoid listening to very loud music, especially through ear phones.
- Consult your doctor in case of any problem in the ear.



- Do not use any medication for your ears without a doctor's advice.
- Always clean your ears under the guidance of your doctor.

## The Nose

- The nose helps in breathing.
- The nose helps to distinguish different smells.
- The hairs inside the nose prevent the entry of dust into the lungs.



### For your attention

Don't cover your face while sleeping.



## Care of Nose

- Do not insert anything into the nose.
- When you are affected by cold , do not blow the nose very hard.
- Do not pick your nose in public.

## Activity

Tie your friend's eyes. Bring a few articles near his nose and ask him to distinguish them by their smell.

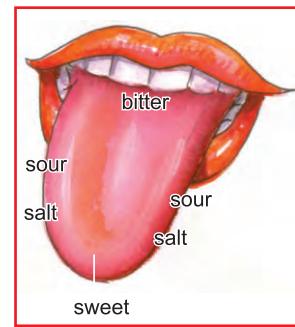


[Jasmine flower, coffee powder, tea, rose, mango, lemon, etc.,]



## The tongue

The tongue is an organ of taste. The taste buds present on the surface of the tongue are responsible for distinguishing different tastes like sweet, sour, salt and bitter.



## Care of tongue

- We must avoid taking very hot beverages or food because it damages the taste buds.
- We must clean our tongue with a tongue cleaner everyday.

## Activity

Place the following one by one on your tongue and experience the taste. Tabulate your answers.



Food items	Taste
Sugar	
Salt	
Lime juice	
Bittergourd juice	

## The skin

- Skin is the largest sense organ.
- It is spread all over our body.
- It protects the underlying organs.
- It acts as a thermo-regulator.
- It is an organ of touch.



## Care of skin

- Have bath everyday using soap.
- When we get wounds or rashes on the skin, we should take medicines as per a doctor's advice.
- Eating greens, carrot, papaya, mango, and cashewnut keep your skin smooth and bright.

### Activity :



Divide the students into five groups. Ask each group to explain the importance of one sense organ.

## Points to remember

- The brain is located inside the cranium.
- It is the centre of all activities.
- Cerebellum helps in movements and body balance.
- Medulla oblongata is the 'vital knot'.
- There are five sense organs – eyes, ears, nose, tongue and skin.
- The sense organs collect information from the surrounding and send it to the brain.
- There are taste buds on the surface of the tongue.
- The skin protects our body.
- We should take care of our sense organs to lead a healthy life.



## EVALUATION



### I. Choose the right answer:

1. \_\_\_\_\_ is the largest part of the brain.  
a) cerebellum b) cerebrum c) medulla oblongata d) spinal cord
2. \_\_\_\_\_ is known as the brain stem.  
a) cerebrum b) neuron c) medulla oblongata d) spinal cord
3. The largest sense organ of our body is \_\_\_\_\_  
a) eyes b) ears c) skin d) nose
4. \_\_\_\_\_ is the organ of taste.  
a) skin b) tongue c) eyes d) cerebrum
5. \_\_\_\_\_ is necessary for good vision.  
a) Vitamin C b) Vitamin B c) Vitamin A d) Vitamin D

### II. Fill in the blanks:

1. Cranium is made up of \_\_\_\_\_ immovable bones.
2. \_\_\_\_\_ helps to maintain the balance of the body.
3. \_\_\_\_\_ is known as the vital knot.
4. \_\_\_\_\_ controls all the systems of our body.

### III. Write True or False:

1. Cerebellum is the centre of man's intelligence.
2. Medulla oblongata connects the brain to the spinal cord.
3. Watching TV or playing video games for long hours is good for the eyes.
4. Avoid listening to very loud music through ear phones.
5. There are taste buds on the surface of the tongue.



#### IV. Circle the odd man out:

1. a) taste                    b) hearing                    c) smell                    d) thinking
2. a) Cerebellum            b) Cerebrum                    c) Medulla                    d) brain
3. a) Thinking                b) balance                    c) heart beat                d) sight
4. a) cranium                b) tongue                      c) nose                        d) eyes

#### V. Match the following :

- |                 |                        |
|-----------------|------------------------|
| 1. Cerebellum   | a) vital knot          |
| 2. Cerebrum     | b) cranium             |
| 3. Medulla      | c) window to the world |
| 4. Brain        | d) balance of the body |
| 5. Sense organs | e) centre of memory    |

#### VI. Answer in one or two sentences :

1. Write any two functions of the brain.
2. What is known as a vital knot? Why?
3. How does a man differ from an animal?
4. Why does a man who has imbibed alcohol lose balance?
5. A passenger who sleeps while travelling in a bus falls back and forth. Give reason.
6. Sense organs serve as windows to the outside world. How?
7. Your friend has to wear spectacles for poor vision. What vegetables would you advise your friend to eat to improve vision?
8. Write any two functions of skin.
9. Which part of the tongue helps us to feel sense of the sweetness?



## VII. Answer in detail:

1. State any five functions of the brain.
2. How will you take care of your eyes?
3. Write short notes on
  - a) Tongue
  - b) The nose.
4. Observe the picture given below and answer the questions



- a) Which part of the brain helps in balance? Colour it.
- b) The heart beat is controlled by \_\_\_\_\_. Colour it.
- c) Which is the largest part of the brain? Colour it.



## 5. Botanical Garden



Mettupalayam

Date : \_\_\_\_\_

Dear friend Sundar,

I am Tamilarasan writing to you. I am fine here.

I visited a Botanical garden at Ooty last week as part of an educational tour. I would like to share with you my joyful experiences in this letter.

We were eagerly waiting for the bus in our school campus. Once the bus came, we entered the bus one after the other and sat down. The bus took off from Mettupalayam for Ooty.



After traveling for some time, we were much enthralled by the scenery

The mountain road had lot of hair-pin bends. Cold air blew in through the windows. The trees were so tall that they seemed to touch the sky .Gentle streams were flowing down the mountain. The pleasant green meadows, the water drops on the grass all made my journey pleasant. We were able to see tea plantations and aricanut trees.



Tea plantation



Aricanut trees

We also enjoyed the sight of medicinal trees like Eucalyptus and Cinchona.

The teacher who accompanied us pointed out the names of the trees. We saw trees like Teak, Ebony, Red- wood, Karungali. The teacher also explained the uses of those trees. The driver stopped the bus as he saw a tree fallen across the road. The road workers removed the tree by cutting it into small pieces. The teacher explained that the central black portion of the tree is hard wood and the outer is softwood. The parts of trees which are used for construction purposes are called wood.



The wood is used for making articles from small match sticks to constructing huge ships.

Pine trees are used to make matchsticks.



To build houses



- Teak
- Poovarasu
- Bamboo

To make furniture



- Mango
- Manjanathi
- Padak

For artistic work



- Teak
- Bamboo
- Rose wood

We saw monkeys jumping from tree to tree with pear fruits in their hands. Our teacher explained the cultivation process of Pear, Orange, Plums, Potato, Radish, Carrot, Cabbage, which we consume as food.

Plants used as food



Pear



Carrot



Plums



Potato



Orange



Cabbage

Our teacher showed us a tree and said that it was a willow tree. He also added that cricket bats are made from willow trees. We were surprised and took a group photo under this willow tree.



Willow tree



After the tree was removed from the road, the bus continued on its journey. As we went higher up the mountain road, we felt the increase of cold. We were grateful to our teacher who had instructed us to bring woollen clothes.

After sometime, the bus stopped near a tea stall which was adjacent to the road. There we drank tea of different flavours. We got a pleasant smell from the next shop. With the permission of our teacher



Cinnamon



Cardamom



Cloves



Fragrant Flowers

we went inside the shop. We found lot of perfumes for sale. These were made from Javadu, Cloves, Sandal, Cinnamon and fragrant flowers. The shopkeeper understood our curiosity and started explaining about the perfumes. The perfumes made from flowers have strong scent and



also have medicinal properties . They refresh both the mind and body. Pepper, Cinnamon, Cardamom, Turmeric improve the aroma and the taste of food. We thanked the shopkeeper, bought some perfumes and left from there.



## SCIENCE

After travelling for sometime we saw a notice board which stated "OOTY WELCOMES YOU". We all felt very happy. The bus came to a halt and we all got down one after the other. We saw greenery everywhere. After finishing our lunch we were ready to leave for the Botanical Garden.



A Guide from the Horticulture Department led us into the garden. We lost ourselves in the beautiful scenery. We saw plants, creepers and trees on the way. He first took us to the herbal farm. He pointed out the medicinal plants to us and also explained their uses. He said plants with medicinal properties are called Herbs.

### Plants used as medicines



Ginger  
for bile



Mint  
for digestion



Eucalyptus  
for headache



Manathakkali  
for mouth ulcer.



Vallarai  
to increase the  
memory power.



Tulsi  
for cold  
and cough.



AloeVera  
for skin disease



Acalypa indica  
(Kuppaimeni)  
for skin disease.



Keezhanelli  
for  
Jaundice



**Indian Sarsaparilla**  
for cooling the  
body system.



**Dhoodhuvalai**  
for chest cold.



**Jatropha**  
for constipation.

Then we went to a flower show. The guide from the Horticulture Department showed us beautiful flowers, told us their names and explained their different uses.

All the flowers were beautiful. Some flowers were white in colour, most of them were multi-coloured. Some flowers had a pleasant smell and some did not have any smell.

The different varieties of roses were pleasing to our eyes. We felt very happy seeing the bouquets made of Rose, Marigold and Orchid.





The guide explained about the flowers used as medicines, food and perfumes. He also said that blue and yellow dyes were made from the flowers Clitoria and Morinda respectively. These dyes are used to colour clothes, to manufacture inks, paints and varnish.

### Banana Flower



Drumstick Flower

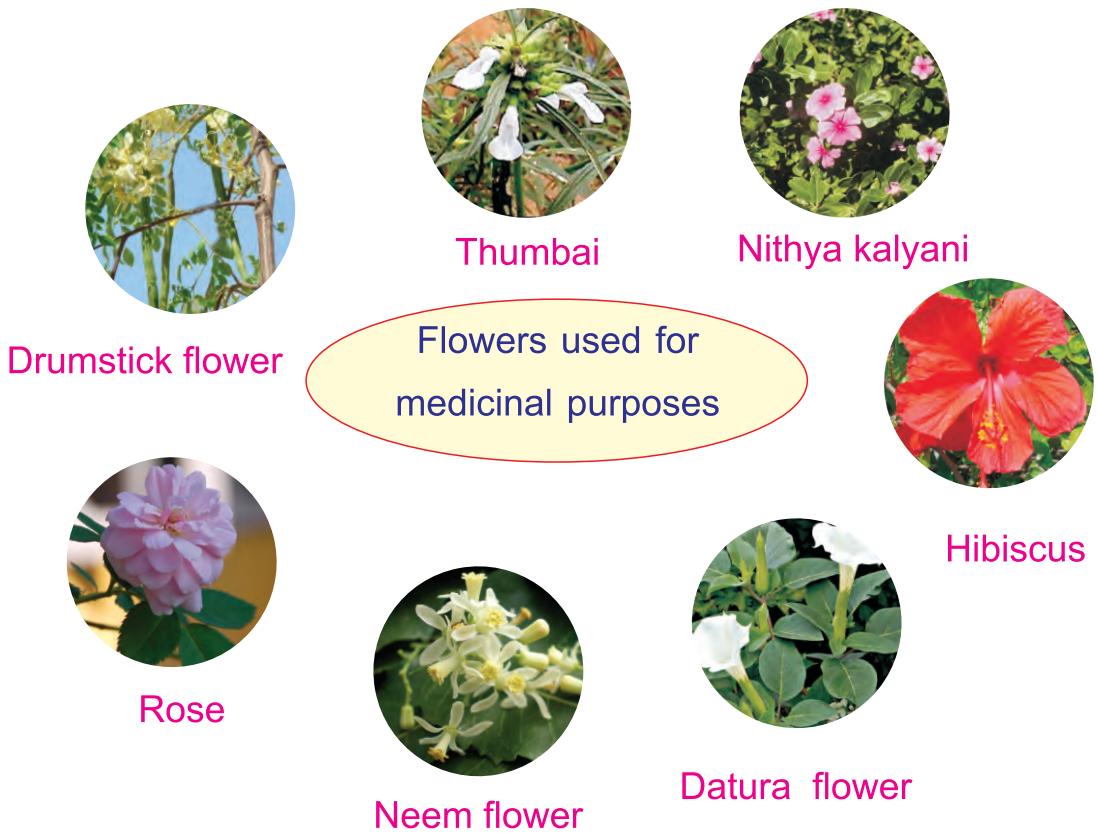
Flowers used for cooking



Neem Flower



Cauli Flower



### Herbal flowers

Nithya kalyani

Hibiscus

Neem flower

Datura flower

Clove flower

Rose

Thumbai

Drumstick flower

### Ailment

- for blood cancer
- for heart problem and blood purification
- for worms infestation of the Intestine
- to cure wheezing
- to cure tooth ache
- to cool down the body system
- to cure cold and cough
- rich source of iron and to increase the blood count



Lotus



Parijatham



Rose

Flowers  
Used to  
Make Perfumes



Jasmine



Dahlia



Chrysanthemum

After taking rest for a while in the garden, we returned to the town happily. This educational tour made me happy. Won't you write to me about your tour experience?

I am expecting your letter soon.

With love,

R. Sundar,  
25, Pothigai Street,  
Adambakkam,  
Chennai - 600 016.

Tamilarasan

#### Fill in the tabular column :

Mango, Sugarcane, Rose, Paddy, Teak, Hybiscus, Ragi, Tube rose, Guava, Brinjal, Tomato, Poovarasu, Tulsi, Jack fruit, Nandia vattai, Karugali, Bamboo

As medicine	As food	As perfume	To make furniture



## EVALUATION

### I. Choose the right answer:

1. An edible cereal is  
a) Motchai    b) Paddy    c) Broad beans    d) Field beans
2. An edible pulse is  
a) Blackgram    b) Paddy    c) Wheat    d) Millet
3. An edible flower is  
a) Jasmine    b) Crossandra    c) Cauliflower    d) Tube rose
4. A medicinal plant  
a) Lady's Finger    b) Beans  
c) Sugarcane    d) Keezhanelli
5. Good quality trees used for building houses  
a) Neem    b) Teak    c) Vagai    d) Poovarasu

### II. Fill in the blanks:

1. \_\_\_\_\_ is a vegetable which can be eaten raw.
2. To make wooden articles the \_\_\_\_\_ part of the tree is used.
3. \_\_\_\_\_ is used to cure jaundice.
4. \_\_\_\_\_ is a good medicine for toothache.
5. \_\_\_\_\_ flower is used to cure the blood cancer.

### III. Match the following :

- |                      |                    |
|----------------------|--------------------|
| 1. Edible flower     | a) Manathakali     |
| 2. Cereal            | b) Teak            |
| 3. High quality wood | c) Plantain flower |
| 4. Medicinal plants  | d) Jasmine         |
| 5. Perfume           | e) Ragi            |



#### IV. Answer in one or two sentences :

1. What are herbs?
2. Mention some green leafy vegetables.
3. Write the names of vegetables and roots which can be eaten raw.
4. What are the uses of flower?
5. Write some of the trees which are used to build houses.
6. Which flower is used to cure worm infestation of the intestine?

#### V. Answer in Detail :

1. List the plants, trees, flowers and fruits that you came to know on your educational tour.
2. What are the various uses of plants? Explain with examples.

#### VI. Project :

- Collect pictures of flowers and prepare an album.
- Collect available flowers, press and dry them, paste them, write their names and prepare an album of dry flowers.
- Collect information about the medicinal plants, their parts and their nature of healing.
- Prepare a chart showing the various spices of plants.



# **'I can, I did'**

## **Student's Activity Record**

## **Subject :**