Science

3

What does "Progressive Science" series consist of?

Each lesson is supported by :

- Beautiful illustrations
- Learning objectives
- Fact to know
- Let's Recall
- Word power
- Train your Brain
- Cross Curriculum Connect
- Exercises with Revision and Model tasks
- Activity time
- HOTS
- Project time

Tasks for RTP and MTP include :

- Answer the questions in short
- Fill in the blanks
- Answer the questions
- True/False
- Multiple choice questions
- Answer in one word
- Match the columns

Published by :

Preface

The "**Science**" series, which is intended for students in grades 1 through 8, is precisely developed in accordance with the requirements and recommendations set forth in the Most Recent National Curriculum Framework appropriate for CBSE and other state board schools.

Children are inherently curious, and they begin to engage in scientific inquiry at an early age. The series emphasises learning with understanding by keeping this in mind.

A fascinating voyage into cause and effect, as well as the inspiration for all life and the universe we inhabit, is offered by science. It is a topic that has a predetermined impact on our line. Therefore, it is crucial to instil a scientific mindset in kids as early as feasible.

The book includes Model Test Paper and Revision Test Paper in accordance with the new plan.

Important details regarding the series:

- Learning objectives : which provides quick points about what students going to learn in the chapter.
- Fact to know : which provides interesting facts to extend learning beyond the curriculum.
- Let Recall : which is provided to summarise the key lessons learned.
- Word Power : In this section, difficult words' definitions are provided.
- Train your Brain : This part aims to help pupils improve their critical and creative thinking abilities.
- Cross Curricular Connect : To assess and evaluate the students on a regular basis throughout each chapter in the form of MCQs, one-word questions, columns to match, activity time, and project time in accordance with CBSE rules on the CCE pattern.
- Revision Test Paper : To test and evaluate the students on a regular basis in each chapter using MCQs, one-word questions, column-matching activities, and project time in accordance with CBSE standards on the CCE pattern.

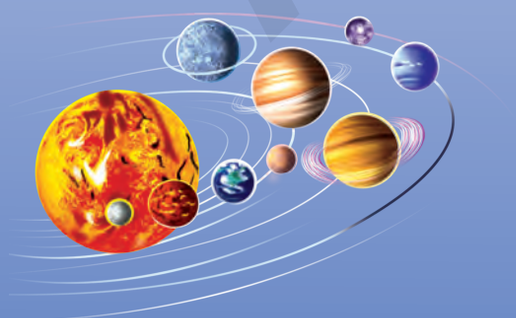
Model evaluations gauge the depth of a student's learning. It is presented in the form of questions and answers and fill-in-the-blanks in each chapter. High order thinking skills (HOTS): Difficult opportunities provided to enhance analytical abilities.

To Offer Continuous and Comprehensive Evaluation of Knowledge, Understanding, and Application of Concepts Learned.

A lot of work has gone into making the series successful. We appreciate any advice you may have to make the series better.

- High order thinking Skills (HOTS) : Difficult opportunities are provided to enhance analytical abilities.

– Publishers



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1 Living and Non-living Things

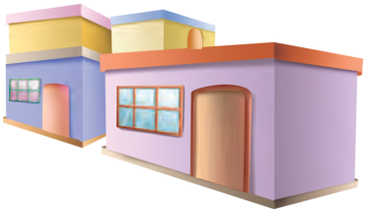
Learning Objectives

1. Living things
2. Non-living things
3. Features of living things
4. Difference between living and non-living things
5. Natural things
6. Man-made things

Let Me Answer

- What are 10 living things around you?
- What are 10 nonliving things around you?

THINGS

- **Living things**
  - Plants, human beings, animals etc.
  - 
  - 
  - 
- **Non-living things**
  - **Natural things**
    - Sun, mountains, Moon, rivers etc.
    - 
    - 
  - **Man-made things**
    - Pen, house, furniture etc.
    - 

THINGS AROUND US

There are number of things which we see around us. Some things have life in them, some others do not have life in them. For example : A dog has life but a chair is lifeless.

We observe different types of things in our house. We see our pets like dogs and parrots. We have toys like dolls and toy-cars. The dog comes to us because it has life and can move. The toy-car does not come to us because it has no life and cannot move.

Thus, the things that have life are called living things. E.g. : dog, cow, man, woman etc. The things that do not have life are called non-living things. E.g. : pencil, chair, car, bucket etc.

Cow

Woman

Man

Car

Pencil

Dog

Chair

Bucket

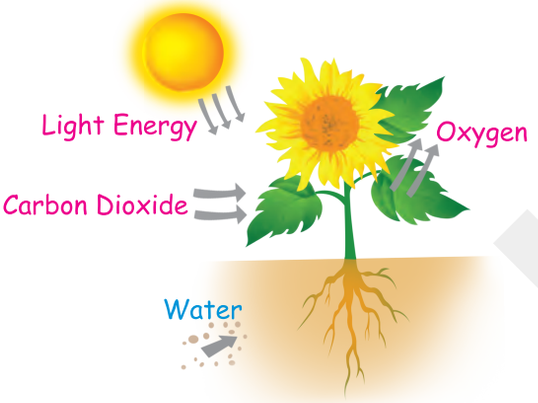
Look at the pictures given below and find out which are living things and which are non-living things.

....

FEATURES OF LIVING THINGS

Living things breathe.

- All living things need air to breathe and live.
- Plants breathe in carbon dioxide gas from air and breathe out oxygen.
- Animals take oxygen from air and breathe out carbon dioxide.
- We breathe in through our nose. Some animals like cows, lions, buffaloes etc., breathe through nostrils. Insects breathe through tiny air holes and fish breathe through gills.
- Plants breathe with the help of tiny openings on their leaves, called stomata.



Living things need food.

All plants and animals need food to live.

- Food helps living things to grow.
- Plants prepare their own food through photosynthesis.
- Roots of plants absorb minerals and water from the soil.
- Animals depend on plants for their food.
- Animals get their food from plants and other animals.

Living things grow.

- All living things can grow. A baby grows into a boy/girl, then into a young man/woman and finally, the man/woman becomes old.
- After a certain period, the old one dies.
- Growth changes the shape and size of living things.
- A seed grows into a plant which may further grow into a big tree.
- Animal babies also grow into adult animals.

Baby

Boy

Man

Old man

Living things move.

- All living things can move.
- All plants do not move but some plants show movements. Climbers move along the walls while creepers move along the ground. Sunflower turns its face towards the Sun. Stems grow towards sunlight and roots grow towards the soil.
- All human beings can walk or run.
- Animals like cat, dog, cow etc., also move from one place to other.
- Birds fly, fish swim, snakes crawl and frogs jump.

Living things feel.

- All living things can feel and respond to the environment.
- Plants response to the changing seasons by shedding their leaves in autumn and bearing flowers in spring.
- Animals use their senses to feel. For example : Some birds migrate as response to change in weather conditions.
- Human beings also use their sense organs to help them feel the changes in the environment. For example : In winter, you feel cold and wear woollen clothes to protect yourself from cold.

Sheep-Lamb

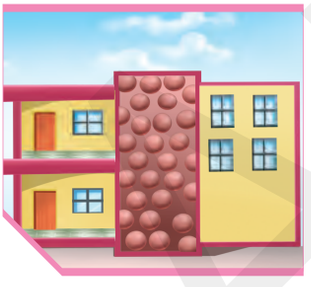
Cat-Kitten

Living things reproduce.

- All living things can reproduce their own kind.
- Plants produce seeds from which new plants arise.
- Human beings and some animals like cats, dogs, cows, lions etc., give birth to their young ones. Birds, fishes, snakes etc., lay eggs and the young ones hatch out of the eggs.

Difference Between Living Things and Non-Living Things

	Living Things		Non-Living Things
1.	Living things can breathe.	1.	Non-living things cannot breathe.
2.	Living things need food.	2.	Non-living things do not need food.
3.	Living things can grow.	3.	Non-living things cannot grow.
4.	Living things can move.	4.	Non-living things cannot move.
5.	Living things can feel.	5.	Non-living cannot feel.
6.	Living things can reproduce.	6.	Non-living things cannot reproduce.



Natural Things

Some things like air, water, soil, the Sun, the Moon and the stars occur in nature. These are called natural things. These are not made by man.

Man-made Things

The non-living things that are made by man are called man-made things. E.g. : chair, table, computer, television etc.

Facts to know

- An elephant's trunk serves as its nose, mouth and arm.
- All plants do not grow from seeds like potato, rose etc.

LET'S RECALL

1. There are many things around us. E.g. : animals, birds, plants, stones, rocks etc.
2. Things that have life, are called living things.
3. Things that do not have life, are called non-living things.
4. Living things can breathe, move, grow, feel, reproduce and need food.
5. Non-living things cannot breathe, move, grow, feel, reproduce and do not need food.
6. All the living things, provided by nature are called natural things.
7. The non-living things like table, chair, television etc., made by man are called man-made things.

breathe in	:	to take the air in
breathe out	:	to take the air out
hatch out	:	come out
lifeless	:	without life
migrate	:	move from one area and settle in another
photosynthesis	:	the process by which green plants use sunlight, carbon dioxide and water to produce their food

Cross Curriculum Connect

1. Answer the following questions in short.

a. Name any two animals that breathe through gills.
b. Name two plants that show movement.
c. Is salt a living thing? Yes or No?
d. Why do some birds migrate?

2. Fill up the blanks with suitable words.

food eggs sunlight air stomata sense organs

a. Animals have ..... to feel.

b. Snake lays ..... .

c. Animals get energy from the ..... that they eat.

d. Plants breathe through the ..... in their leaves.

e. Plants prepare their own food by air, water and ..... .

f. All plants and animals breathe in ..... .

3. Answer the following questions.

a. Write any two features of non-living things.

b. From where do we get our food?

c. How do human beings breathe?

d. From where do plants get their food?

4. Tick (✓) the right and cross (×) the wrong statements.

a. All living things are natural.

b. Animals are not dependent on plants for their food.

c. Plants breathe in oxygen and breathe out carbon dioxide.

d. Flowers in a vase are living things.

e. Plants reproduce from seeds.

5. Multiple Choice Questions (MCQs)

Tick (✓) the correct option.

a. Select the series relating to living things.

(i) Man, animal, plant

(ii) Book, pen, pencil

(iii) Rock, mineral, computer

b. Select the series which move and grow.

(i) Ball, notebook, mountain

(ii) Baby, plant, animal

(iii) Roof, wall, floor

6. Give one word for each one of the following.

a. The origin of a plant .....

b. Things laid by hens .....

c. The gas released by animals .....

7. Match the columns.

Column A		Column B
a. Man	(i)	Caterpillar
b. Lion	(ii)	A young boy
c. Cat	(iii)	Tadpole
d. Butterfly	(iv)	Cub
e. Frog	(v)	Kitten

Take three glass jars. Put a stone in the first, a frog in the second and some seedlings of plant in the third. Notice the difference between the three. Write the conclusion too.

Trees provide us wood to make our furniture articles. Trees are living but the furniture like the table is a non-living and man-made thing. Can you write three differences between the non-living table and the living tree?

Write at least three things that you see :

- At home 1. ..... 2. ..... 3. .....
- In a zoo 1. ..... 2. ..... 3. .....
- At school 1. ..... 2. ..... 3. .....
- In market 1. ..... 2. ..... 3. .....
- In a park 1. ..... 2. ..... 3. .....

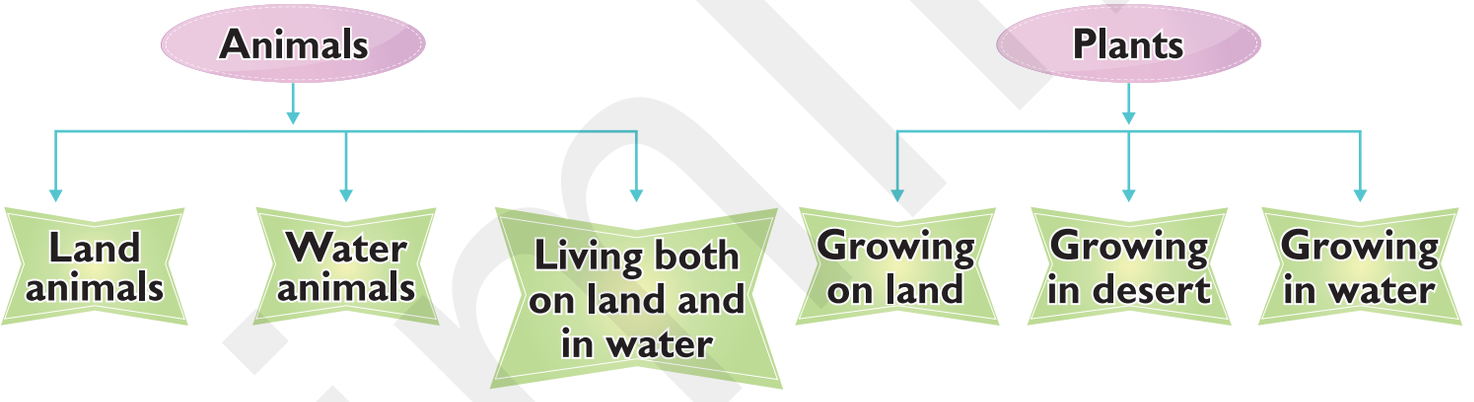
2 Animals Differ from Plants

Learning Objectives

1. Differences in plants and animals
2. Inter-dependence of plants and animals
3. Balance in nature

Let Me Answer

- Animals live by eating other organisms plants, animals, bacteria, or even bits are called?
- What are pet animals?



DIFFERENCES IN PLANTS AND ANIMALS

Plants and animals both are living things. They possess almost all the characteristics of living things. But animals differ from plants in many ways.

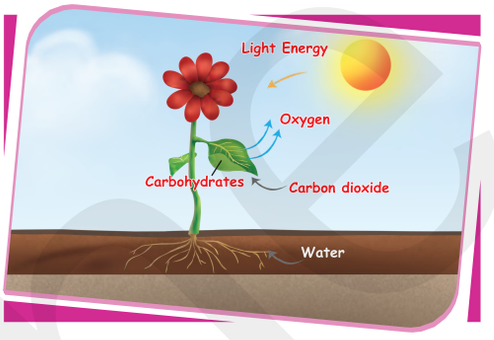
Movement

- Animals can move from one place to another. They move here and there in search of food, water and shelter. This movement of animals is called locomotion.

- Plants do not show locomotion. They remain fixed to the ground. Only some parts of the plants show movements along wall, ground, direction of the Sun etc.

Procurement of Food

- Plants make their own food at their own. They use sunlight, water and carbon dioxide from air to make their food. This process is known as photosynthesis.
- Animals depend upon plants and other animals for their food.



Breathing

- Plants breathe in carbon dioxide from air and breathe out oxygen in air through stomata in leaves.
- Animals have different ways of breathing. Humans breathe in through nose, some animals breathe through nostrils, insects breathe through tiny holes and fish breathe through gills. Animals breathe in oxygen from the air and breathe out carbon dioxide back into the air.

Reproduction

- Animals either give birth to their young ones or lay eggs from which babies come out.
- Plants produce seeds, which are sown to give rise to new plants. Some plants also grow from a part of plant like stem or root, e.g. : potato, rose etc.

Response to Environment

- Animals have sense organs like skin, ears, eyes, nose and tongue to feel and respond to changing environment.
- Plants also respond to environment but they do not have sense organs.

Organ Systems

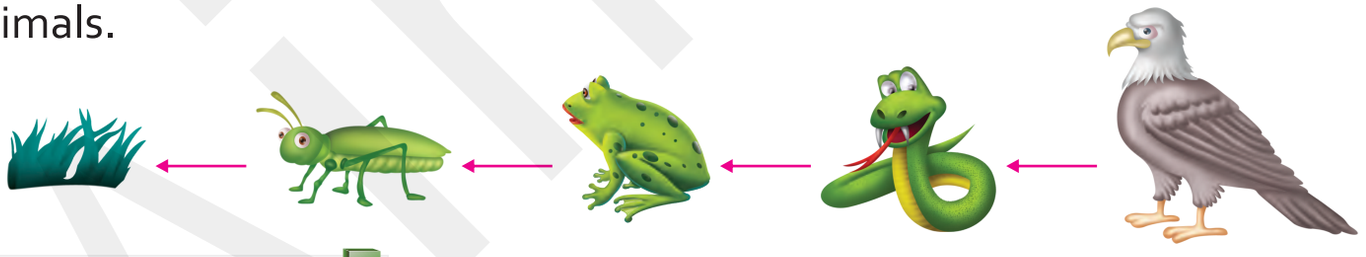
- Animals have many organ systems in their bodies, like digestive system, respiratory system etc.
- Plants do not have any such organ systems.

INTERDEPENDENCE OF PLANTS AND ANIMALS

We know that animals depend upon plants for their food and oxygen. But plants also depend upon animals. The gas taken by plants from air (i.e. carbon dioxide) is given out by animals when they exhale. Animals help plants by spreading their seeds and also give them manure.

BALANCE IN NATURE

The interdependence of plants and animals makes a balance in nature through the exchange of gases. This is called balance in nature. We should not interfere with the balance of nature by cutting down trees or by killing animals.



Facts to know

- Some plants which are not green, cannot make their food. They depend on dead and decaying matter for getting their food.
- Some plants, like Venus flytrap, eat insects.
- Leaves are called the "Food Factories" of the plants.

LET'S RECALL

1. Both animals and plants are living things. But they differ from each other in several ways.
2. Movement is the main difference between animals and plants.
3. Plants can make their own food but animals cannot make their own food.
4. Plants cannot move from one place to other but animals can walk and move for food.
5. Plants cannot reproduce as human beings or animals. They reproduce in the form of seeds. When seeds are sown, they grow into new plants, while animals reproduce directly by copulation.

Word Power

inter-dependence	: dependence on each other
manure	: animal dung used as fertilizer for plants
organ-system	: a set of connected organs to work together
photosynthesis	: the process by which green plants use sunlight, water and carbon dioxide to produce their food
procurement	: to obtain by effort or care, acquire
shelter	: protection against wind, rain, danger, enemy etc.

Train Your Brain

Cross Curriculum Connect

1. Answer the following questions in short.

a. Name the sense organs of man.

b. What is the movement of animals called?

c. What is the interdependence of plants and animals called?

d. What do plants breathe in and breathe out?

2. Fill up the blanks with suitable words.

stomata Plants Movement food breathing

a. ..... is the most important difference between animals and plants.

b. Plants breathe in and breathe out through the tiny pores on their leaves called ..... .

c. Both plants and animals need ..... .

d. ..... have no sense organs.

e. Animals have different ways of ..... .

3. Answer the following questions.

a. In what ways, do animals and plants differ from each other?

b. Why do animals move from place to place?

c. Define photosynthesis.

d. How do animals reproduce?

4. Tick (✓) the right and cross (×) the wrong statements.

a. Plants cannot produce their own food. ☐

b. Humans breathe in through nostrils. ☐

c. Leaves are the source of energy for a plant. ☐

d. Plants give birth to new plants. ☐

e. Birds and snakes give birth to their young ones. ☐

5. Multiple Choice Questions (MCQs)

Tick (✓) the correct option.

a. Plants produce them to grow into big plants.

(i) Seeds ☐ (ii) Roots ☐

(iii) Leaves ☐ (iv) Stem ☐

b. Leaves have tiny pores in them. These pores are called ..... .

(i) chlorophyll ☐ (ii) stomata ☐

(iii) shoot system ☐ (iv) roots ☐

c. These can prepare their own food.

(i) Plants ☐ (ii) Animals ☐

(iii) Human beings ☐ (iv) All ☐

6. Give one word for each one of the following.

a. The process of making food by the plants .....
b. The gas breathed out by animals .....
c. The gas breathed in by plants from air .....
d. Living things having sense organs .....
e. Insect-eating plant .....
f. Breathing part of a fish .....

7. Match the columns.

Column A	Column B
a. Egg	(i) Food factories of a plant
b. Leaves	(ii) The movement of animals
c. Locomotion	(iii) The babies come out of them

Put some soaked beans in a zip lock bag.

Observe what happens when they do not get :

1. Light 2. Water 3. Air

Observe what happens when they get air, water and sunlight.

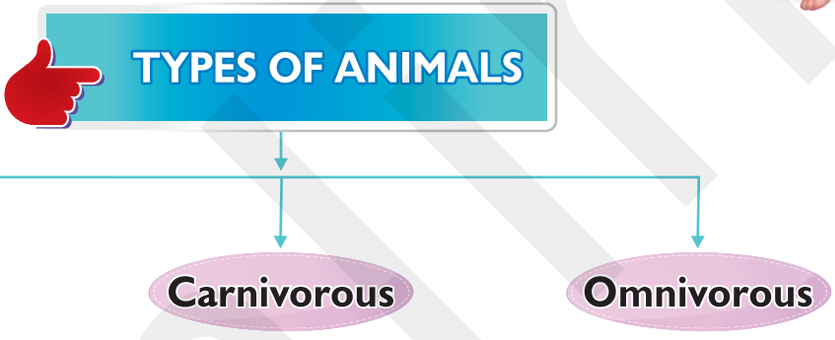
1. If we take out a fish from water, after some time, it dies. Why ?
2. A rabbit eats the nuts and throws some of the nuts in the near by soil. After some days, a plant grows there. How will you justify this statement ?

1. Visit a nursery and ask the gardener to show you the seed of a plant that bears fruit. Then, ask the gardener how much time it takes for the seed to grow into : a. a sapling and b. a fully grown tree. Make a note of it.
2. Visit a zoo to see how the animals, which live in water are different from land animals in their breathing and food habits.

3 Feeding and Eating Habits of Animals

Learning Objectives

1. Animals' need for food
2. Classification of animals on the basis of feeding habits
3. Various eating habits in animals
4. Care of domestic animals



(on the basis of feeding habits)

NEEDS OF ANIMALS

We have already learnt in the previous chapters that living things need food to live. Thus, all animals need food. The animals need food to live, to grow and to get energy.

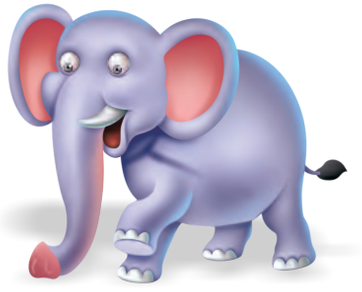
ANIMALS NEED FOOD TO GROW.

All animals need food to grow. You might have seen little puppies when these puppies are fed with food (say milk, bread, bones etc.). They grow into healthy dogs. Animals also need food to stay healthy.

ANIMALS NEED FOOD FOR ENERGY.

Some animals like horse, elephant, donkey, camel etc., help us. For doing work for us, they need energy. They get this energy from food. The people who keep domestic animals, feed them in the morning and evening. Food gives them energy to work.

Horse



Elephant

Camel

DIFFERENT FOOD HABITATS OF ANIMALS

Animals show differences in their food habits. Based on the food they eat, animals have been divided into :

- Herbivores
- Carnivores
- Omnivores

Let Me Answer

- Carnivores: The organisms that depend on the flesh of other organisms for their nutrients are called carnivores.

Herbivores

Animals which only eat grass, small plants, twigs, branches of trees, fruits and vegetables, are called herbivores or herbivorous animals. These animals have strong, and flat grinding teeth in the rear part of their jaws. These teeth help herbivores to chew their food easily. The front teeth help them to bite leaves and grasses.

Goat

Cow

Carnivores

Animals which feed on the flesh of other animals, are called carnivores or carnivorous animals. These animals have long pointed teeth to tear the flesh and strong grinding teeth to chew the bones and flesh.

Lion

Vulture

Those carnivores who do not catch their prey and feed on the flesh of dead animals are called scavengers. For example : hyenas and jackals are the scavengers.

Omnivores

Some animals eat both plants as well as animals as their food, such animals are called omnivorous animals. They have sharp front teeth and flat grinding teeth. Man is also an omnivorous animal.

Bear

Kingfisher

Crow

DIFFERENT WAYS OF EATING OF ANIMALS

Animals have different ways of eating. Different animals eat different types of food. Eating ways depend on the shape of mouth and jaws of animals and the kind of food they eat.

Rabbit

Rat

Squirrel

Gnawing

"Gnawing at" means to bite something repeatedly or to chew it hardly. Animals like rabbit, squirrel, rat etc., have sharp front teeth to cut and gnaw at their food.

Cow

Buffalo

Chewing the cud

Some animals swallow their food without chewing it. After some time, they bring it back into their mouth and then chew it well. This is called chewing the cud. Animals like cow, buffalo, goat etc., which are herbivores, chew their cud.

Swallowing

Swallow means to take something down your throat when taken from mouth. Animals like snakes and frogs swallow their food in one piece . They do not bite or chew their food. So, they do not have biting or chewing teeth.


Frog


Snake

Tearing and then Chewing

Tear means to pull forcibly into pieces. Animals like lion, tiger, fox, dog etc., tear their fleshy food. They have strong grinding teeth to chew the flesh.


Dog


Fox


Lion

Sucking

Suck means to draw liquid or air into mouth. Insects such as mosquito, butterfly, honey bee etc., suck their food. These insects have long and pointed sucking tubes.


Honey bee


Butterfly


Mosquito

Other ways of Eating

The trunk of an elephant helps it to suck up water, uproot the grass and tear off branches from the trees. It also uses its trunk to have shower.

An earthworm digs the soil and turns it upside down in search of bits of dead plants and animals as its food.

Some animals, like cats and dogs, lap milk or water with their tongue.

Lizards and frogs have long and sticky tongues to catch their prey.


Elephant


Cat


Lizard

DOMESTIC ANIMALS NEED CARE.

Camel

Ox

Animals like cow, oxen, camels, dogs etc., which serve us by doing work for us are called domestic animals. We should take good care of them and look after them.

- We should give them healthy food and water at proper time and in clean vessels.
- Their shelters must be cleaned regularly.
- Proper treatment should be given to sick animals.
- We should always be kind to domestic animals.

Facts to know

- Elephants have a very sensitive trunk. It has 40,000 muscles and is flexible like rubber.
- The sense of smell in dogs is higher than human beings. That's why, police uses dogs to find the suspects.
- Animals which carry loads for us are called the "Beast of Burden".

LET'S RECALL

1. Different animals have different feeding habits.
2. Cats and dogs lap milk or water with their tongues.
3. Butterfly, bees etc., suck their food with sucking tubes.
4. Animals like cows, buffalos and goats chew the cuds.
5. Elephant have a very sensitive trunk. It has 40,000 muscles and is flexible like rubber.
6. Animals which carry loads for us are called beast of burden.
7. Lizards and frogs have long and sticky tongue to catch their prey.

Word Power

chew	:	to grind between teeth
energy	:	the strength/power to do work
flesh	:	the soft pulpy part of animal's body
habits	:	regular ways of behaving
lap	:	taking liquid up by tongue
shower	:	spraying water over body

Train Your Brain

Cross Curriculum Connect

1. Answer the following questions in short.

a. What are omnivores?

b. Who is called a scavenger animal?

c. Name two animals who chew the cud.

d. Name two animals who swallow their food as a whole.

2. Fill up the blanks with suitable words.

carnivore food swallow leech Scavengers Tear

a. Lion, a flesh-eating animal, is called a ..... .

b. Snakes ..... their food.

c. The ..... sucks the blood of animals.

d. All the animals need ..... to grow.

e. ..... feed on dead animals.

f. ..... means to pull forcibly into pieces.

3. Answer the following questions.

a. How many type of eating habits do animals have? Name them.

b. What do herbivorous animals eat?

c. What kind of teeth do grass-eating animals have?

d. What do you mean by "Chewing the cud"?

4. Tick (✓) the right and cross (×) the wrong statements.

a. Bear eats both plants and other animals. ☐

b. Leech sucks blood. ☐

c.. Cows gnaw their food. ☐

d. Cows chew the cud. ☐

e. Wolf is a carnivorous animal. ☐

f. Snakes suck blood. ☐

5. Multiple Choice Questions (MCQs)

Tick (✓) the correct option.

a. Which series of animals is a carnivore series?

(i) Lion, wolf, fox, snake etc. ☐

(ii) Cow, buffalo, goat, horse etc. ☐

(iii) Man, bear, crow, peacock etc. ☐

b. Which series of animals is a herbivore series?

(i) Man, bear, crow, peacock etc. ☐

(ii) Cow, buffalo, goat, horse etc. ☐

(iii) Lion, wolf, fox, snake etc. ☐

c. Which series of animals is an omnivore series?

(i) Cow, buffalo, goat, horse etc. ☐

(ii) Lion, wolf, fox, snake etc. ☐

(iii) Man, bear, crow, peacock etc. ☐

6. Give one word for each one of the following.

a. Reason for need of food by animals .....

b. A scavenger animal .....

c. A name given to plant and flesh-eating animals .....

d. The sensitive part of an elephant .....

e. An animal with higher sense of smell than humans .....

7. Match the columns.

Column A		Column B	
a.	Gnawing teeth	(i)	Tiger
b.	Grinding teeth	(ii)	Squirrel
c.	Tearing teeth	(iii)	Cow
d.	Sucking tubes	(iv)	Elephant
e.	Trunk	(v)	Giraffe
f.	Long neck	(vi)	Mosquito

Act as an elephant. Show your friends how elephants get food from trees. Spread out your arm as if it is an elephant's trunk and pretend plucking a leafy branch from a tall tree.

1. Why do all food chains start from plants ?
2. Can you differentiate between domestic animals and pet animals ?

1. Make cards. Paste various types of animals on one side. Write their behaviour (i.e. food habits and ways of eating) on the reverse. You can also play a game with these cards, giving clues to your friends. Give him/her a point if he/she guesses correctly.
2. Collect the pictures of some animals. Sort them out according to their eating habits as herbivores, carnivores and omnivores. Paste them in your scrapbook on separate pages.
3. Visit a vet or find information about the things which we should not give to our pet and domestic animals. Also find out the ill effects of giving these things on the health of the animals.

4

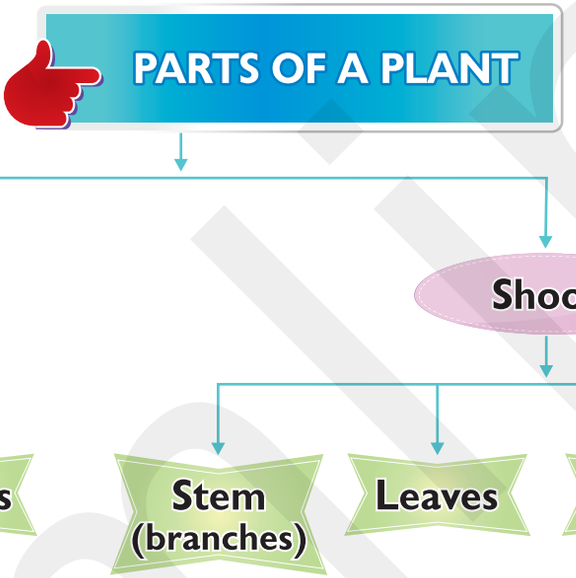
Parts of a Plant

Learning Objectives

1. Different parts of a plant
2. Functions of different parts of a plant

Let Me Answer

- What are the 5 main plant parts?
- How do you define Roots, Stems, and Leaves?



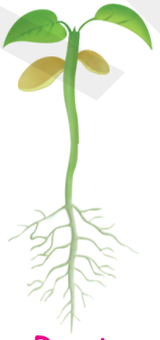
PARTS OF A PLANT

There is an important role of plants in our lives. We depend on plants for our food, clothes, shelter, medicines and many more things. Life cannot be possible without plants.

Just like our body has different parts, the body of a plant has also different parts.

These are :

- Roots
- Stem
- Leaves
- Flowers
- Fruits (seeds)


Root


Stem


Leaves


Flowers


Fruit (seeds)

The stem, leaves, flowers and fruits together make the shoot of a plant. The shoot is the part which grows above the ground.

The Root

The roots of most of the plants grow below the ground. There can be two types of roots :

- Tap roots
- Fibrous roots

Tap roots

Fibrous roots

When a main root grows from the end of stem roots, it is a tap root. It can be seen in plants like bean, mustard, balsam etc.

When a large number of roots grow from the end of stem, it is fibrous root. Plants like grass, wheat, rice etc., have fibrous roots.

Functions of the Roots

1. Roots fix the plant in the soil.
2. Roots absorb water and minerals from the soil.
3. Some roots store food in them. This food is prepared by the plant and we eat the roots of such plants. E.g. : carrot, raddish, turnip etc.

The Stem

The stem is the main part of the shoot which grows above the ground. It bears other parts of the plant like branches, leaves, flowers and fruits. Different types of plants have different stems.

- Trees have hard and woody stem called trunk.
- Shrubs have thick stem.
- Herbs have soft stem.
- Climbers and creepers have weak stems.

Functions of the Stem

1. It holds the plant upright and supports its branches.
2. It bears other parts of a plant like branches, leaves etc.
3. It carries water and minerals absorbed by the roots to different part of the plants.
4. It carries food prepared by leaves to different parts of the plants.
5. Stems of some plants also carry stored food. E.g. : sugarcane. Ginger grows underground and stores extra food.

The Leaf

The leaf is also called the kitchen of the plant. Leaves are also present on the stem and its branches. Most of the leaves are green in colour because of a green-coloured substance present in them. This is called chlorophyll. With the help of chlorophyll, water from soil, carbon dioxide from air and sunlight, leaves prepare food for the plant and release oxygen to air. This process is called photosynthesis.

The leaf also has many parts. The flat and broad part is called leaf blade or lamina. The line running in the middle of leaf is called main vein and a number of side veins branch out from the main vein. A number of small openings called stomata are present on the surface of leaves.

Lotus leaf

Neem leaf

Banyan leaf

Banana leaf

Coconut leaf

Papaya leaf

Functions of the Leaf

1. It prepares food for the plant.
2. It gives out extra water from the plant.
3. It helps in breathing of a plant through stomata.
4. Some leaves have stored food in them, e.g. : cabbage, lettuce, spinach etc.

The Flower

The flower is the most beautiful part of the plant. A plant does not bear flower all the time. Flowers grow only at the time of reproduction. Flowers differ greatly in their colour, shape and size. The bright coloured part of a flower is called petal and the green part that encloses a flower is called sepal. The sepal provides protection to the flower.

Lotus

Rose

Sunflower

Marigold

Dahlia

Tulip

Functions of the Flower

1. In most of the plants, the flower grows into fruit.
2. It makes the plant look beautiful.
3. It helps the plant to reproduce.

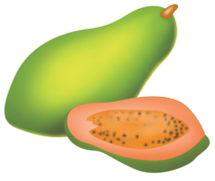
The Fruit

A fruit is formed from the flower. The fruit contains seed in it. The number of seeds differs in different fruits.

Orange

Apple

Mango



Papaya

Watermelon

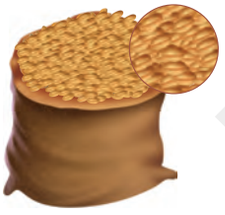
Banana

Functions of the Fruit

1. It protects seed inside it.
2. Most of the fruits store food in them. E.g. : apple, papaya, orange etc. Hence, they are edible and eaten by us.

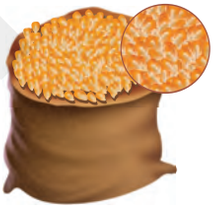
The Seed

Seeds are present inside the fruits. Seeds grow into new plants. Seeds of different plants differ in their size, shape and colour.



Wheat

Rice



Corn

Moong

Functions of the Seed

1. It has a major function to give rise to a new plant.
2. We eat seeds of some plants like wheat, rice, corn etc. These seeds are called grains, which provide us energy.

Facts to know

- The 'peepal' tree gives out oxygen in night time also.

LET'S RECALL

1. A plant has different parts like roots, stem, leaves, flowers and fruits.
2. The stem is the main part of the shoot which grows above the ground.
3. The shoot bears other parts of the plant like branches, leaves, flowers and fruits.
4. The leaf is very important part of the plant which is called the kitchen of the plant.
5. The flower is the most beautiful part of a plant and it changes into the fruit.

climbers : the plants that climb up trees or other support
creepers : the plants that grow along the ground
minerals : natural substances such as coal, salt, oil etc.
upright : standing upwards in a vertical/straight position

Cross Curriculum Connect

1. Answer the following questions in short.

a. Which part of a plant grows below the ground?
b. What does the seed get converted into?
c. What is hard stem of a tree called?
d. Where does the turnip store its food?
e. Give an example of tap root.
f. Which part of the plant is converted into fruit?
g. How many seeds does a mango have?

2. Fill up the blanks with suitable words.

fibrous kitchen flower woody parts

a. A plant has different ..... .
b. Tap roots and ..... roots are two types of roots.

c. A tree has hard and ..... stem.
d. Leaf is also called the ..... of plant.
e. The ..... is the most beautiful part of the a plant.

3. Answer the following questions.

a. How many main parts of the plant are there, name them?
b. Write two functions of the roots?
c. Write two functions of the leaf?

4. Tick (✓) the right and cross (×) the wrong statements.

a. Roots fix the plant in the soil. ☐
b. There are five types of roots. ☐
c. Roots absorb water and minerals from the soil. ☐
d. Climbers and creepers have strong stems. ☐
e. The stem holds the plant upright and supports its branches. ☐
f. The fruit is not formed from flower. ☐

5. Multiple Choice Questions (MCQs)
Tick (✓) the correct option.

a. Flowers are the most ..... part of the plant .
(i) rude ☐ (ii) up and down ☐ (iii) beautiful ☐
b. Leaf also helps in ..... of a plant.
(i) breathing ☐ (ii) sleeping ☐ (iii) protecting ☐
c. The bright coloured part of a flower is called ..... .
(i) sepal ☐ (ii) petal ☐ (iii) leaf ☐
d. Flower helps the plant to ..... .
(i) stand ☐ (ii) reproduce ☐ (iii) send minerals ☐
e. Seeds grow into new ..... .
(i) fruit ☐ (ii) leaf ☐ (iii) plant ☐

6. Give one word for each one of the following.

a. The upper part of a plant .....
b. The kitchen of a plant .....
c. The lower part of a plant .....
d. The part of a plant which sends minerals to different parts of the plants .....
e. A part of fruit present inside it .....

7. Match the columns.

Column A		Column B
a. Roots	(i)	protect seed inside them.
b. Stem	(ii)	are called the kitchen of the plant.
c. Fruits	(iii)	grow below the ground.
d. Leaves	(iv)	are the beautiful parts of the plant.
e. Flowers	(v)	is the woody part of the plant.

Visit your school garden with your class teacher. Take the gardener's help to pull out some small plants from the soil. Observe the type of roots of these plants.

1. When the flowers grow on plants (say a mustard plant or a mango tree) the farmer feels happy. Why ?
2. Fruits protect seeds inside them. Do you know what is protected inside the seed ?

Bring any five plants from the garden. Carefully look at each plant. See the roots. Feel the stem. Is it hard or soft? What is its colour? Does it stand erect? Observe leaves and flowers also. Note down your observations.

5

Types of Birds

Learning Objectives

1. Body structure of a bird
2. Beaks of birds
3. Feet and claws of birds

Let Me Answer

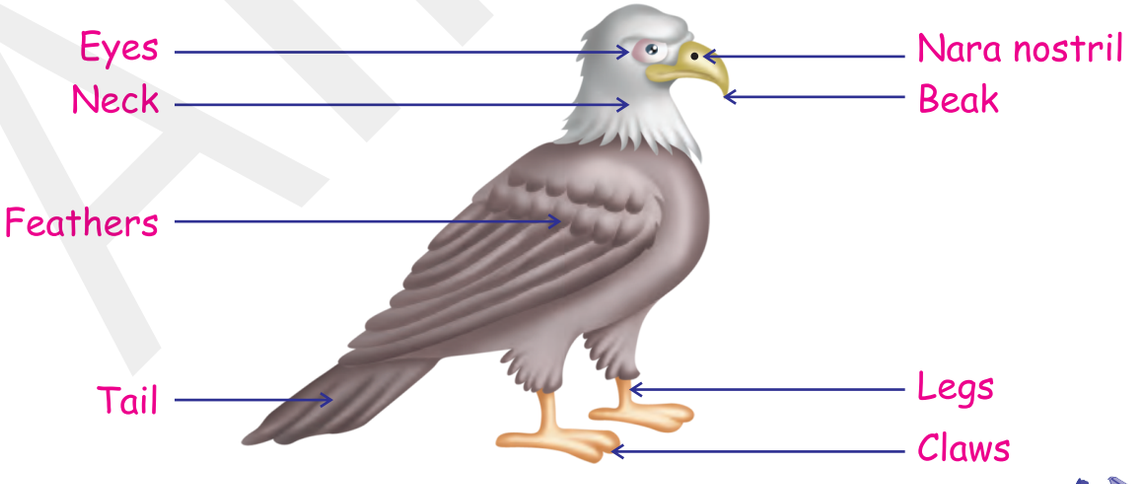
- Is Peacock a bird?
- Is Kiwi a bird? Where do you find Kiwi?

BIRDS

- Perching birds
- Scratching birds
- Swimming birds
- Wading birds
- Flesh-eating birds
- Climbing birds

BIRDS

Birds are the beautiful animals, found all around the world. Like other living things, birds also need food. Some birds eat grains while some others eat flesh. Birds use their beaks and claws to hold and eat their food. A bird posses a streamlined body with head, wings, tail and legs.



The head has a beak with no teeth. There are two holes called nara which act as nostrils. The birds have hollow and light bones, filled with air. This makes the body of a bird light in weight. So, birds can fly easily. The wings are attached to the body of the bird with strong muscles called flight muscles. These help the wings move up and down.

Feathers of a Bird

Most of the birds have feathers all over their body. These feathers differ in size, shape, colour and design. The feathers are of two types :

Penguin

Owl

Parrot

- Down feathers
- Flight feathers

Down feathers are fluffy and cover the full body of bird, keeping it warm.

Flight feathers are long and sturdy attached to wings and help them in flying.

Beaks of Birds

The shape of a bird's beak is suited to the type of food it eats.

1. Sharp, Strong and Hooked Beaks

The birds of prey like eagles, vultures etc., have sharp strong and hooked beaks. Such beaks help to tear flesh.

Eagle

Vulture

2. Hard, Strong and Short Beaks

The grain eating birds like pigeon, sparrows etc., have hard, strong and short beaks. Such beaks help to pick up and crush the food they eat.

Pigeon

Sparrow

Parrot

3. Curved Beaks

The birds, like parrots, have curved beaks. Such beaks help to crack seed, nuts and fruits. Parrots also climb up the tree using their curved beaks.

Woodpecker

Hoopoe

4. Strong and Chisel-shaped Beaks

The birds like woodpecker and hoopoe have strong and chisel-shaped beaks. These beaks help in making holes in the bark of trees and pulling out insects to eat.

Crow

Robin

5. Broad and Short Beaks

The birds like swallows have broad and short beaks, which are sticky from inside. Swallows keep their beaks open to catch the flying insects. Small flies and insects stick to the beak and the bird swallows them up.

Humming bird

6. Long and Pointed Beaks

The birds like sunbirds and humming birds have long and pointed beaks. These beaks help them to pull out insects from holes to the ground.

Duck

7. Broad and Flat Beaks

The birds like ducks have broad and flat beaks. These beaks have tiny holes on the sides. When duck takes in muddy water with insects, worms and water-plants, the mud and water flow out through these tiny holes. The food for the duck is left inside the beak.

Feet and Claws

Birds have two legs and two feet. The claws can be seen at the tips of the toes of the birds. They use their feet to move, catch food and to protect themselves from enemies. The claws of the birds tell us about their living habits. According to the types of feet and claws, birds can be categorised as :

Different types of claws

1. Perching Birds

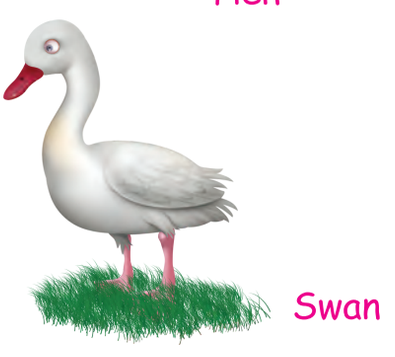
They have three toes in front and one at the back. Front toes are like fingers and back toes are like thumbs. Such toes assist perching birds to hold on to the branch. They can even sleep while perching.

2. Scratching Birds

A hen has three toes in front and one short toe at the back. It also has a small fifth toe, a little higher up at the back of the leg. Each toe has a horny claw. These toes assist the hen to scratch the Earth and catch insects and buried seeds.

3. Swimming Birds

Water birds possess webbed feet. The three toes in front are joined by skin webs which assist to push back the water while swimming. There is one toe at the back.



4. Wading Birds

Birds like crane, heron etc., walk through mud and water. They have long legs with spread out toes that assist them wade through muddy water. Their toes keep them from sinking into the mud.

Hawk

5. Flesh-eating Birds

They possess sharp and curved claws called talons which are used to grip small animals like rat, toad etc.

Woodpecker

6. Climbing Birds

Birds like woodpecker and parakeet have two toes which point upwards and two toes which point downwards. These help them to climb and cling to trees.

Facts to know

- When a duck swims in water, its feathers do not get wet.
- Birds do not lie down during sleep. They stand upright while sleeping.
- Beak is also called bill or restrum.
- The humming bird is the smallest bird and the ostrich is the biggest bird in the world.

LET'S RECALL

1. A bird possesses a streamlined body with head, wings, tail and legs.
2. The birds have hollow and light bones filled with air.
3. Birds have different kind of beaks, many of them have sharp, strong and hooked beaks.
4. Birds like swallows have broad and short beaks, which are sticky from inside.
5. Sunbirds and humming birds have long and pointed beaks.
6. Ducks and swans have broad and flat beaks.
7. Perching birds have three toes in front and one at the back.
8. Flesh-eating birds possess sharp and curved claws called talons, which are used to grip small animals like rat, toad etc.

Word Power

birds of prey : birds which hunt and eat other animals
chisel : a carpenter's tool
hollow : empty within (from inside)
streamlined : made with a smooth shape offering little resistance or making more efficient movement in water or air

Cross Curriculum Connect

1. Answer the following questions in short.

a. How many toes does a hen have?
b. Which feathers of the bird keep it warm?
c. Which bird has a curved beak?
d. Which type of beak does a parrot possess?

2. Fill up the blanks with suitable words.

webbed water chisel scratching beak

a. Water birds possess ..... feet.
b. A crane walks through ..... .
c. A woodpecker has a ..... shaped beak.
d. Hen is a ..... bird.
e. The ..... indicates the food habit of a bird.

3. Answer the following questions.

a. Mention four special features which help the birds fly.
b. What are the two types of feathers that birds have?
c. What are birds of prey?
d. Describe broad and flat beaks.

4. Tick (✓) the right and cross (×) the wrong statements.

a. Birds are the only animals that can fly. ☐

b. Water birds do not have webbed feet. ☐

c. Wading birds do not have long legs. ☐

d. The woodpecker taps the bark of a tree with its beak. ☐

e. Grain-eating birds have curved beaks. ☐

5. Multiple Choice Questions (MCQs)

Tick (✓) the correct option.

a. The birds fly with the help of their ..... .

(i) body ☐ (ii) claws ☐

(iii) feathers ☐ (iv) wings ☐

b. Birds have a body which is ..... .

(i) hard ☐ (ii) heavy ☐

(iii) long ☐ (iv) streamlined ☐

c. A woodpecker has a beak which looks like a ..... .

(i) hammers ☐ (ii) hook ☐

(iii) horn ☐ (iv) Chisel ☐

d. Sparrow and pigeon are ..... .

(i) swimming birds ☐ (ii) flesh-eating birds ☐

(iii) Scratching birds ☐ (iv) perching birds ☐

6. Match the columns.

Column A		Column B
a. Duck	(i)	Scratching feet
b. Hen	(ii)	Wading bird
c. Crane	(iii)	Climbing bird
d. Woodpecker	(iv)	Webbed feet
e. Sparrow	(v)	Perching bird

7. Give one word for each one of the following.

a. Reason for sticky beaks in swallows .....

b. Function of holes in the beak of a duck .....

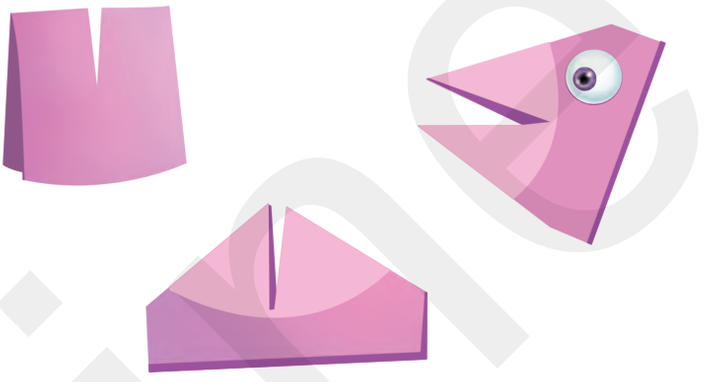
c. Information given by different claws of birds .....

Activity Time

Make a bird's beak.

Fold a card in half and cut a slit in the middle. Fold back corners. Push folds inside out.

Glue to a piece of card. Do not glue the beak. Draw a bird's face around the beak. Open and close the card to move the beak.



HOTS

1. Can you guess, why ostrich can not fly ?
2. If wings, tail and feathers grow on your body (as you are at present), would you be able to fly like a bird ? If yes, why ? If no, why not ?

project Time

1. Draw the picture of a bird in your notebook and write all its body parts.
2. Collect at least ten pictures of birds and paste them in your scrapbook. Observe their beaks and claws. Write a few lines about each one of them.
3. Become a bird watcher !

   You could become a bird watcher. Birds are early risers. You can see and hear birds happily chirping near lakes, ponds and trees early in the morning. Take a notebook with you when you go for bird watching. Note down interesting information like size, colour and shape of the beak, the kind of sound birds make, how they move (walk fast or slowly) etc.

6

Birds and Their Nests

Learning Objectives

1. Need of the nest for birds
2. Time of building nests
3. Location for nests
4. Different types of nests
5. Birds caring their young ones

Let Me Answer

- What are the different types of bird nests?
- Which bird makes the most beautiful nest in India?

NEED FOR HOME

As we need a home to live in, birds also need homes. A nest is a bird's home. Many birds build nests. Birds use different things to build their nests like dry twigs, grass, feathers, wool, cotton, mud, pebbles etc. The nests also differ in size, shape, location and in materials used to build them.

Need of nests for birds

Birds make nests to lay eggs and to hatch them into young ones. They make nests to save themselves and also their young ones from heat, cold, rain, enemy and wind.

Birds build new nests when they have to lay eggs again.

Time of Building Nest

Birds make their nests just before the start of summer and rainy season. This occurs usually in the months of February and March.

Location for Nests

Birds make their nests at various places. Most of the birds build their nests on the branches of trees, in the broken walls, old building and ventilators. Let us now learn about the different types of nests built by different birds.

Different types of Nests

1. Nests of Sparrow and Pigeons

Sparrow and pigeon make their nests in houses and old buildings. They use grass, feathers and leaves to make their nests. Their nests are cosy and comfortable.

2. Nest of a Weaver Bird

The name weaver bird itself suggests that it behaves like a weaver in making its nest. A weaver bird builds its nest with fine strips of palm and banana leaves, grass etc. The nest hangs down from the branch of a tree. It has an entrance at the bottom through which the bird enters and goes out of the nest. The weaver bird lays its eggs on a soft platform made inside the nest. Its nest is in retort shape.

3. Nest of a Tailor Bird

A tailor bird takes large leaves to build its nest. It sews up and joins two or three large leaves with its sharp beak. It sews the nest with cotton thread or wool. The nest is filled with cotton, grass, wool and dried grass to keep it warm. This kind of sewing helps to keep the nest cosy and comfortable.

4. Cuckoos do not build nests !

Some birds like cuckoo (koel) and honey guide do not make nests at all. They lay eggs in a crow's nest. The mother crow hatches them as her own eggs.

She also feeds the cuckoo's babies along with her own babies because they look quite similar.

5. Nest of a Woodpecker

A woodpecker builds its nest in the trunk of a tree. It makes a hole in the trunk of a tree with its beak. It lines the hole with chips of wood to make it cosy and warm.

6. Nest of Bulbul

A bulbul builds its nest in hedges and bushes with dry grass. Its nest is like a deep cup. The eggs and chicks do not fall out of it.

7. Nest of Vulture

A vulture makes its nest on the trees. It is made of long thin sticks, dirty clothes and small twigs.

8. Nest of a Penguin

Penguins build their nests with pebbles and bones because trees do not grow where they live.

9. Nest of Partridges and Ducks

Birds such as partridges and ducks build their nests in the ground. They dig holes in the ground with their beaks and feet to build their nests. They then put some grass and leaves to make the nest cosy.

10. Nests of Some Other Birds

Parrots, owls and hornbills build their nests in hollows of mango and jamun tree trunks.

Birds take care for their young ones.

When the nest is made, the mother bird lays eggs in it. Both the parent birds take care for the eggs. They also sit on the eggs to provide warmth to them. The chicks are hatched out which are blind and do not have feathers. They cannot stand. The parent birds feed them with the food containing a lot of moisture. The young birds are ready to fly out on their own within a few weeks. Till that time, the parent birds protect their young ones from their enemies.

Facts to know

- Birds do not lie down while sleeping. They stand upright perching on the branch of the tree.
- The ostrich is the largest and the heaviest living bird.

LET'S RECALL

1. Birds build nests to lay eggs and provide protection to them.
2. Different birds build different types of nests.
3. Birds use twigs, leaves, dry grass, feathers, sticks and pebbles to build their nests.
4. Cuckoo does not build a nest at all. It lays eggs in the nest of a crow.
5. Birds build their nests on trees, old buildings, on the top of roofs etc.
6. Birds take care for their young ones. They feed the young ones, keep them warm and protect them from their enemies.

Word Power

cosy	:	warm
feed	:	to give food
hatch	:	to emerge from an egg
hollow	:	empty within
retort	:	a long necked container
shallow	:	not deep
trunk	:	The woody stem of a tree

Train Your Brain

Cross Curriculum Connect

1. Answer the following questions in short.

a. When do birds make their nests?

b. What do birds use to make their nests?

c. Which birds do not make their nests?

2. Fill up the blanks with suitable words.

hole crow's Ducks hollows

a. A cuckoo lays its eggs in ..... nest.

b. Parrots and owls build their nests in the ..... of tree trunks.

c. ..... dig ground with their beak and feel to build their nests.

d. A woodpecker builds its nest by making a ..... in the tree trunk.

3. Answer the following questions.

a. Describe how vultures build their nests?

b. How do birds take care of their young ones?

c. Why do birds build their nests?

d. Where do birds usually build their nests?

e. How does a weaver bird build its nest?

4. Tick (✓) the right and cross (×) the wrong statements.

a. Most of the birds build their nests on trees. ☐

b. A weaver bird builds its nest with feathers. ☐

c. A tailor bird sews its nest with cotton thread or wool. ☐

d. Birds do not take care for their young ones. ☐

5. Multiple Choice Questions (MCQs)

Tick (✓) the correct option.

a. Birds build their nest before ..... .

(i) summer season ☐ (ii) rainy season ☐

(iii) winter season ☐ (iv) both (i) and (ii) ☐

b. Sparrows build their nests in ..... .

(i) hollow of a tree ☐ (ii) houses ☐

(iii) the branches of a tree ☐ (iv) none of these ☐

c. One of the following birds does not build a nest at all.

(i) Woodpecker ☐ (ii) Owl ☐

(iii) Cuckoo ☐ (iv) Pigeon ☐

d. Penguins build their nests with ..... .

(i) cotton ☐ (ii) pebbles ☐

(iii) dry grass ☐ (iv) none of these ☐

e. This bird sews its nest with its beak.

(i) Tailor bird ☐ (ii) Parrot ☐

(iii) Crow ☐ (iv) Kingfisher ☐

6. Give one word for each one of the following.

a. Egg laying place of a bird .....

b. A bird which do not make its nest .....

c. The woody stem of a tree .....

7. Match the columns.

Column A		Column B
a. Cuckoo	(i)	Hollow of the trunk
b. Penguin's nest	(ii)	Does not build a nest
c. Bulbul's nest	(iii)	Houses and old buildings
d. Sparrow	(iv)	Hedges and bushes
e. Parrot	(v)	Pebbles and bones

Try making a nest using a pair of tweezers for a beak and some twigs, cotton, wood, thread etc. Can you do it easily?

1. Why the birds build new nests every time, when they have to lay eggs?
2. What is the difference between nests of a weaver bird and a tailor bird?

Using a cardboard and a string, make a birds' table. Hang it on the branch of a tree or on a roof top. Enjoy seeing the birds visiting on the bird table daily. Click some pictures and have fun!

7

Our Body

Learning Objectives

1. Building blocks of our body
2. Sense organs
3. Organ systems :
   - Skeletal system
   - Digestive system
   - Nervous system
   - Reproductive system
   - Muscular system
   - Respiratory system
   - Excretory system
5. Need for regular exercise

Let Me Answer

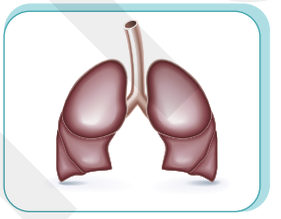
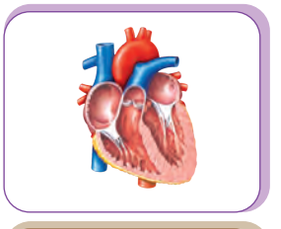
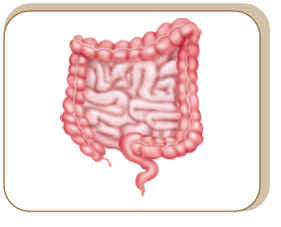
- What are the 12 body parts?
- What is the smallest organ?

- Sense organs
  - Skin
  - Eyes
  - Ears
  - Tongue
  - Nose
- Organ Systems
  - Skeletal
  - Muscular
  - Digestive
  - Respiratory
  - Excretory
  - Nervous
  - Reproductive

BUILDING BLOCKS OF OUR BODY

Human body is a living machine. Just as a car has various parts like wheels, engine and doors; our body too has various parts. Each body part does something special; something only it can do. A part of the body that has a special purpose is called an organ and the special action it does is called its function. The body needs all its organs to work smoothly.

Given below are some common organs but they are not at their correct places. Draw arrows to match their functions. Further, also match each organ name to its picture.

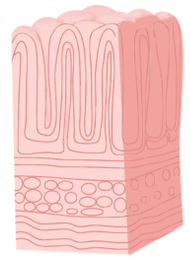
Name of organs	Functions	Pictures
Heart	breathing air	
Lungs	mixes food	
Stomach	absorb food	
Intestines	pumps blood	

WHAT IS OUR BODY MADE UP OF?

Just as a house is made up of many bricks, our body is also made up of many cells. Cells are the building blocks of the body.

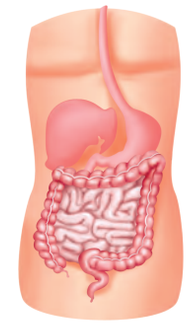
An organ system has many organs and these organs work together to perform one action.

Cells are the smallest unit of our body.



A tissue is made up of many similar cells.

An organ is made up of different tissues.

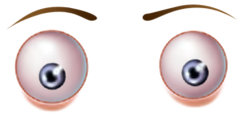


A group of organs forms an organ system.

An organism or a living being is made up of different organ system.

OUR SENSE ORGANS

There are five main sense organs present in our body. These are eyes, ears, nose, tongue and skin. These organs are called sense organs because they help us to know our environment. These sense organs send messages to brain which in turn helps us to see, hear, smell, taste and feel.



Eyes help us see things around us.

Ears help us to hear different sounds.

Nose helps us smell.

Tongue helps us taste different things.

The skin is the largest sense organ.
It helps us feel.

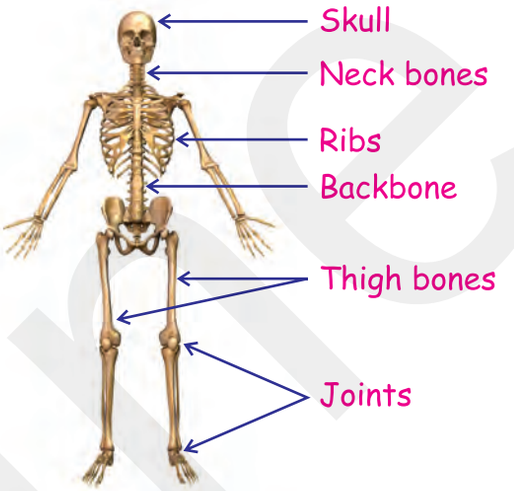
ORGAN SYSTEMS

Different organs work together to perform a particular function for the body and comprise an organ system. For example, organs like mouth, food pipe, stomach etc., help us in eating and digesting. Each organ carries out a different function.

The human body has eight main organ systems. Let us learn about them.

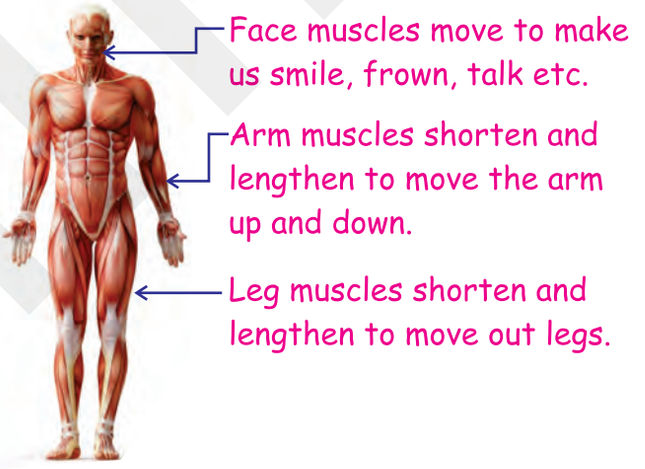
Skeletal System

The skeletal system is made of various bones. This system gives shape and framework to our body. It also protects the inner body parts from getting injured. There are 206 bones in our body.



Muscular System

Muscles are attached to the bones. Muscles help us to move the different parts of our body. All our muscles together form the muscular system. There are more than 600 muscles in our body.

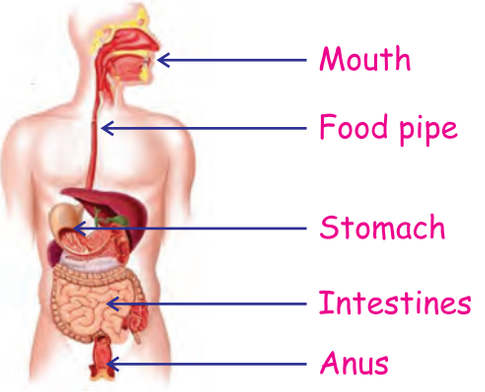


Digestive System

The food we eat is digested by our body. The digestive system is a complicated process. The organs that help us to perform digestion process are :

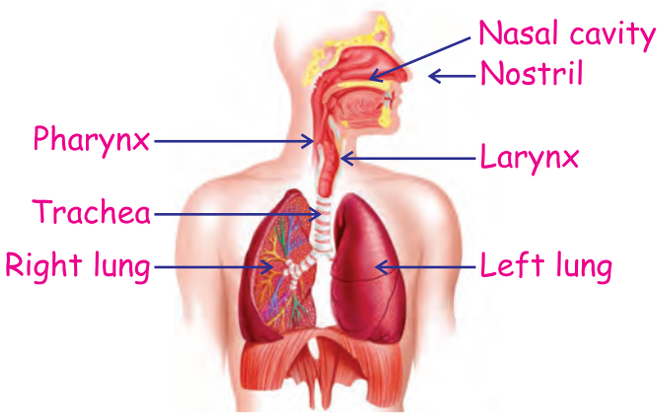
Mouth : We take in food through our mouth.

Food pipe : Food passes down the food pipe.



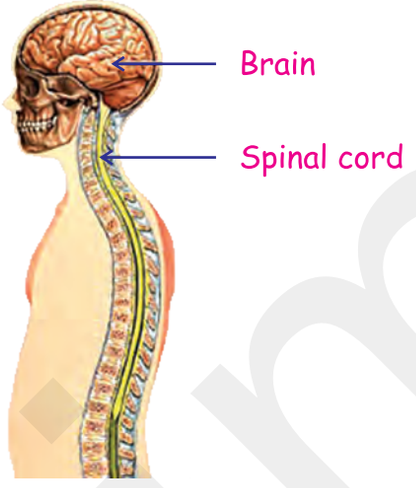
Stomach : It is a sac-like organ where the food gets mixed thoroughly.
Intestines : The intestines take in or absorb what is needed from the food.
Anus : The undigested food is thrown out through the anus.

Breathing (Respiratory) System

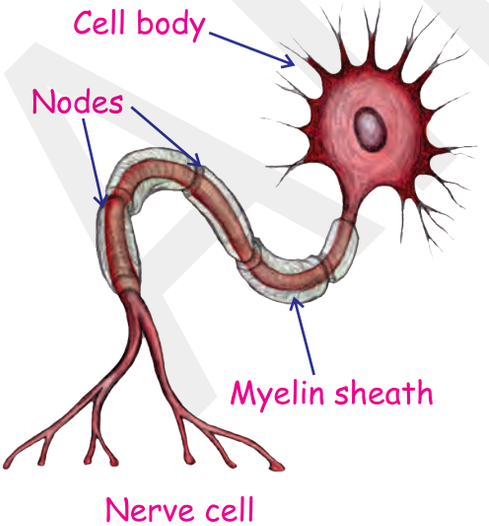


Breathing is very vital to live. We use our nose to breathe. The air we breathe in, is called inhaled air. This air goes down the windpipe and reaches the lungs. The air we breathe out, is called exhaled air. All these together comprise our breathing system. This is also called respiratory system.

Nervous System



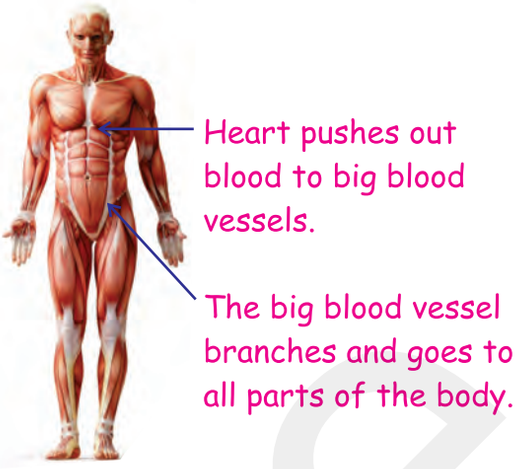
The nervous system is a complicated network in our body. The brain is a very important organ. It has messengers called nerves to send instructions to muscles, bones and other body parts. The spinal cord connects all parts of the body to the brain. Just as the brain is protected by the skull, the spinal cord is protected by the backbone. The brain, the spinal cord and the nerves form our nervous system.



What occurs when we touch a hot kettle?
We pull back our hand immediately. This is because our skin is a sense organ. The nerves in our skin tell the brain that we have touched something hot. The brain understands and sends the message "take hand away". The message reaches the nerves and we take the hand away.

Circulatory System

Just as a motor cannot work without its engine, our body cannot work without the heart. Our heart pumps blood to various organs. This blood is carried by blood vessels (thin tubes through which blood flows) to all parts of our body. The heart, the blood and the blood vessels comprise our circulatory system.



Excretory System

Our excretory system cleans our body by throwing out body wastes like urine, stools, sweat etc.

Reproductive System

The reproductive system helps in producing young ones. Birds lay eggs in their nests. Human beings and animals give birth to their young ones.

REGULAR EXERCISE

Machines which are not used for a long time, do not work properly. Similarly, our body becomes unfit if we don't exercise. Exercise helps us to keep our body fit and healthy.

Yoga is an ancient Indian form of exercise. Yogasanas not only keep our body fit and healthy, but also provide peace to our mind. We should learn 'yoga' in the presence of a yoga teacher.

FOOD FOR US

We eat food when we are hungry. The food gives us energy to do work and helps us grow. The food also keeps us healthy.

The food we eat, comes both form plants (products like cereals, pulses, fruits, vegetables etc.) and animals (flesh of hen, goat, fish etc.).

We can divide our food in three groups :

Rice

Wheat

Maize

Energy-giving Food

Wheat, rice, maize, sugar, potato, honey, sweets etc., are the food which contain carbohydrates. These carbohydrates are the energy-giving food. Besides carbohydrates, oil, ghee, butter etc., also give us energy, this category of food is called fats.

Pulses

Milk

Eggs

Body-building Food

Pulses, milk, cheese, eggs, fish etc., contain protein, needed for growth and maintenance of the body. Such food are body-building food.

Peas

Brinjal

Salad

Protective Food

Food that help us to protect from diseases are protective food. Minerals and vitamins are such food which we get from vegetables and fruits. We get calcium from milk and iron from green vegetables. These two minerals are very important for our body.

Apart from above types, our food should contain fibrous materials also. Green vegetables, carrot, radish etc., contain lots of fibres. This fibrous material is called roughage. It helps in regulating bowel movement of our body.

Facts to know

- A child has 300 bones in his/her body. But as he/she grows up, bones fuse together and there remain 206 bones in an adult.
- We should drink at least eight glasses of water every day.
- We use 200 muscles while walking.
- Milk is a complete food but it does not contain iron.
- The left part of brain controls right side of the body and the right part of brain controls left side of the body.

LET'S RECALL

1. Our body is made up of cells, tissues, organs and bones.
2. There are many organs in our body and they have various functions.
3. The skeleton system consists of bones and muscular system consists of muscles.
4. We eat and digest food with the involvement of mouth, food pipe, stomach, intestines and anus.
5. We have a breathing system, circulatory system, nervous system and excretory system too.
6. The reproductive system helps in producing young ones.

Word Power

brick	:	a block
complicated	:	difficult
comprise	:	made up of
exhale	:	to throw out
function	:	special action
inhale	:	to take in

Train Your Brain

Cross Curriculum Connect

1. Answer the following questions in short.

a. Name five sense organs in our body.

b. How many organ systems does a human body posses?

c. What makes up our circulatory system?

d. Which organ pumps blood in our body?

2. Fill up the blanks with suitable words.

organ Cells heart digestive grow Milk diseases

a. ..... make up our body.

b. Many organs together form an ..... system.

c. The intestine is a part of our ..... system.

d. The ..... pumps blood to various organs of our body.

e. Vitamins protect us against ..... .

f. ..... is a complete food.

g. Proteins help us to ..... .

3. Answer the following questions.

a. What does the excretory system do for our body?

b. Why should we exercise regularly?

c. Why do we eat food?

d. How do minerals and vitamins help us?

4. Tick (✓) the right and cross (×) the wrong statements.

a. Our body works very much like a machine. ☐

b. The various organs of the body do not work together. ☐

c. Muscles are attached to bones in our body. ☐

d. The digestive system does not help us to digest the food. ☐

e. Vitamins and minerals are the roughage. ☐

5. Multiple Choice Questions (MCQs)

Tick (✓) the correct option.

a. We taste with our ..... .

(i) mouth ☐ (ii) tongue ☐ (iii) teeth ☐

b. Meat, fish and eggs are rich sources of ..... .

(i) vitamins ☐ (ii) proteins ☐ (iii) roughage ☐

c. Fibrous food are called ..... .

(i) minerals ☐ (ii) roughage ☐ (iii) vitamins ☐

d. Which organ belongs to the respiratory system?

(i) Heart ☐ (ii) Lungs ☐ (iii) Intestines ☐

6. Give one word for each one of the following.

a. One energy-giving food .....

b. One body-building food .....

7. Match the columns.

Column A		Column B
a. Number of bones	(i)	Regular exercise
b. Fitness	(ii)	Five
c. Number of sense organs	(iii)	206
d. Vitamins	(iv)	Ghee and oil
e. Fats	(v)	Fruits and vegetables

To understand how our lungs expand and contract.

Materials required : A balloon

Method : Take a balloon. Fill it with air with the help of your mouth.

Observation : The balloon swells up (it expands). Now hold the neck of the balloon and release the air slowly. The balloon becomes small (it contracts).

Conclusion : Your lungs also act like balloons while you breathe in or out. They expand when you breathe in the air (inhale). They contract when you breathe out the air (exhale).

1. Human body is also called a machine but if differs from machines in many aspects. Write two similarities and two differences between human body and a machine.
2. In terms of number of bones, why kids are more flexible than adults ?

1. Visit a school laboratory to see life-size models of various organ systems.
2. Visit a Doctor's clinic. Request him/her to let you use his/her stethoscope to listen to your own heart beats.

8

Safety and First-aid

Learning Objectives

1. Safety at home
2. Safety on road
3. Safety at playground
4. First-aid
5. General safely rules

Let Me Answer

- What are safety and first aid?
- What is the importance of safety and first aid?
- What are the first aid rules?

- At home
- At school
- On road
- At playground
- General safety rules

SAFETY RULES

Accidents can occur anywhere and at any time. We can avoid accidents by being careful and alert.

We need to follow and observe safety rules all the time.

Safety rules help us to avoid accidents.

So, to avert accidents and to keep ourselves safe, we must follow some basic safety rules.

Safety at Home

1. In the Kitchen

- Do not enter the kitchen with loose nylon clothes.
- Do not play with the gas stove, fireworks, matchsticks etc.
- Place the forks and sharp knife at proper place.
- Beware of the steaming kettles and hot things.



2. In the Bathroom

- Do not leave the soap, shampoo etc., on the toilet or bathroom's floor. You or someone else may slip over it.

3. In Room

- In your room, never play or jump onto your bed or chair.
- Do not play or work with sharp things. Keep your toys at proper place.
- Do not touch switches or electrical appliances with wet hands. You may get an electric shock.
- Never take medicines without consulting the doctors or elders.



4. On terrace or Balcony

- Do not run at terrace or in balconies.
- Do not play on terrace or in balconies.
- Never fly kite on the terrace.
- Do not sit on the wall of a roof. You may fall down and get hurt.

Safety at Playground

- To play games is a great fun. But be alert while playing. Carelessness can spoil the fun .
- Learn and obey the rules of the game first.
- Do not play near thorny hedges or barbed wires.
- Do not hit others with a bat or ball, that can harm.
- Wait for your turn at the see-saw or swing.
- Never play a rough game.
- Do not quarrel over trifles.
- Always wear sports shoes while playing. Tie your laces properly. You may fall down, if you wear loose sandals or sleepers.
- Never drink cold water just after playing for a long time or when you are sweating.
- Do not try to catch the insects, as they may have poisonous stings.

Safety on the Roads

- Follow the traffic rules thoroughly on roads.
- Always walk on footpath or on the safe side of the road.
- Cross the road only at Zebra crossing.
- Obey the signals. If it is red and the vehicles on both sides are stopped, then only cross the road.
- While riding a cycle, keep to the left. Never cycle on a very busy road with heavy traffic. Never do zigzag or fast cycling.
- Never board on or off a moving bus.
- Do not put your arm or head out of the moving bus.



First-aid

Always remember - "Prevention is better than cure." When an accident happens, face it boldly. Still you must know some basic 'first-aid' rules. First- aid means the proper care for injured person. So, we should know to give first-aid to the injured people. It can help us also.

- If somebody gets badly injured, call the doctor or an elder at once.
- If a person is bleeding, do not let the wound bleed. Tie a clean hanky or bandage.
- Make the wounded person lie down, keep the wounded part high.
- Wash the wound with dettol, any other antiseptic or cold water.
- Do not let others to crowd around the injured person.
- If somebody had a fracture, you can judge it with the swollen part. Do not put the fractured part hang down. Tie it with some long cloth and give support to it.

- Apply Burnol or Silverex on the burn. To cure a burn you can cool it with cold running water or ice. In case of severe burns, consult the doctor.
- If somebody feels giddiness, give him support. Make him sit on a comfortable place. Put the fan on. Give him some water to drink. Loose laces of his shoes and clothes. When he feels recovered, give him some light food to eat.
- If the sick person has high temperature or high fever, lie him on a flat surface. Put the wet cloth on his forehead. Call the doctor at once.



Facts to know

- "Red cross" is a society for relief of human beings and was founded by I.H. Dunant.
- Many lives could be saved if first aid had been provided well in time.
- Prevention is better than cure.

LET'S RECALL

1. Do not touch fire, back side of fridge and knives in the kitchen.
2. Do not leave soap or shampoo on the bathroom floor.
3. Do not touch electrical appliances or switches with wet hands.
4. Do not play on terraces/balconies or near thorny hedges in the park.
5. Cross the road at Zebra crossing .
6. Never board on a moving bus.
7. Do not cycle on very busy road with heavy traffic.
8. Give first-aid to the injured and follow general precautions.

Word Power

accident	:	a mishappening
bandage	:	a cotton dressing
dettol	:	an antiseptic liquid
first-aid	:	the first assistance or help given to an injured person
fracture	:	a crack in a bone
prevention	:	to stop that activity or diet which causes a disease or harm
wound	:	a cut on skin

Cross Curriculum Connect

1. Answer the following questions in short.

a. How do safety rules help us?

b. What can carelessness lead to?

c. What is the first-aid?

2. Fill up the blanks with suitable words.

left electric-shock Zebra crossing safety rules

a. You should cross the road at ..... .

b. While riding a bicycle, always keep to your ..... .

c. We must follow some basic ..... .

d. You may get ..... if you touch the electric appliances with wet hands.

3. Answer the following questions.

a. What will you do if a person gets a fracture in an accident?

b. Why is it said that "Prevention is better than cure"?

c. What will you do before crossing a busy road?

d. What precautions should you take in the kitchen? Write any two.

e. List any five things at your home that can be injurious.

4. Tick (✓) the right and cross (✗) the wrong statements.

a. It is dangerous to play with fire. ☐

b. We should fly kites on the terrace. ☐

c. While riding on cycle, always keep to your right hand side. ☐

d. Nylon clothes catch fire easily. ☐

5. Multiple Choice Questions (MCQs)

Tick (✓) the correct option.

a. Wash the wound with ..... .

(i) milk ☐ (ii) oil ☐

(iii) dettol water ☐ (iv) none ☐

b. Always cross the road at ..... .

(i) middle of the road ☐ (ii) with a running speed ☐

(iii) Zebra crossing ☐ (iv) when yellow light is on ☐

c. First-aid means ..... .

(i) the last thing to do ☐ (ii) the first remedy ☐

(iii) nothing to do ☐ (iv) none of these ☐

d. To cure a burn, put some ..... on it.

(i) hot water ☐ (ii) cold water or ice ☐

(iii) hot milk ☐ (iv) none of the above ☐

e. Never take medicines without consulting a ..... .

(i) lawyer ☐ (ii) farmer ☐

(iii) doctor ☐ (iv) postman ☐

6. Give one word for each one of the following.

a. At this signal, we should stop. .....

b. At this signal, we should cross the road. .....

c. At this place, we should cross the road. .....

d. It is the liquid used to wash the wounds. .....

7. Match the columns.

Column A		Column B
a. Never drink cold water	(i)	with dettol and cold water.
b. You can slip	(ii)	cure.
c. Wash the wound	(iii)	if you leave the soap on bathroom floor.
d. Accidents	(iv)	just after playing or if you are sweating.
e. Prevention is better than	(v)	can occur anywhere.

To learn how to support a fractured arm.

Materials required : Half metre markeen or cotton cloth and a pair of scissors

Method : Fold the cloth. Make a triangle with it. Rest your friend's arm in this triangle and tie a knot at the back of his/ her neck. The hand should make an angle of 90°.

Observation : Your friend will feel relieved after getting the support. This way you can give support to the fractured arm.

1. What precautions should be taken for safety on the road ?
2. How will you provide first-aid to the bleeding and fractured leg of a person ?

1. Prepare a first-aid box containing the following things :
   a. Cotton b. Gloves c. Burnol
   d. Dettol e. Adhesive strip
2. Predict what would happen if you touch a very hot vessel? What first-aid would you give to yourself ?

9

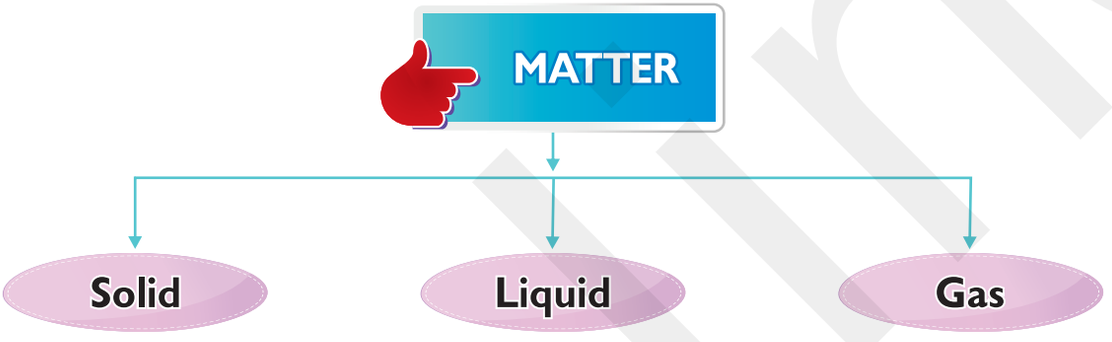
States of Matter

Learning Objectives

1. Matter and its three states
2. Sources of materials
3. Shapes of materials

Let Me Answer

- What are solid, liquid and gas?
- What are matter and its types?



MATTER

We see different things around us. Some are living and some are non-living. Some are big and some are small. But everything occupies space and has weight. So, anything that occupies space and has weight is called matter, e.g. : your cup board, clothes, plants around us and air we breathe, all things are matter.

In nature, matter exists in three forms or states.

1. Solid

2. Liquid

3. Gas

These three forms of matter (water) can be changed from one form to another.

Solid

It is that form of matter which has a fixed shape and size. Solids do not change their shape easily, e.g. : table, chair, pen, floor etc.


Pen


Table

Liquid

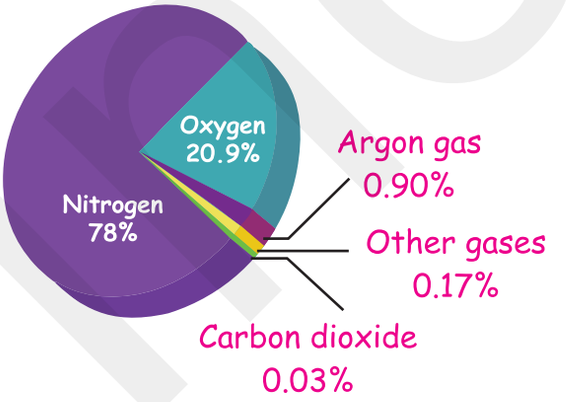
It is that form of matter which does not have a fixed shape and size. Liquids can flow easily and take the shape of the vessel they are kept in, e.g. : milk, water, juice etc.

Milk


Juice

Gas

It is that form of matter which does not have any shape or size. The gas fills the available space. We can only feel a gas but it cannot be seen. Gases easily move from one place to other. Our atmosphere is a mixture of different types of gases.



SOURCES OF MATERIALS

We get different types of materials from the nature. Some materials are man-made, but man gets the raw material from nature.

From Animals

We get wool, fur, silk etc., from animals. These things are used for making different things.


Wool

From Plants

Plants provide jute, cotton, wood, flowers, nuts, leaves, oil, rubber, glue, wax, dyes etc. We use different parts of plants in our food. Coffee, tea, sugar and chocolate powder are also obtained from the plants. We make various things from the materials we get from plants.


Cotton plant

From Soil

We get various types of rocks which are used for making different things.

Coal power plant

For example : we use graphite in our pencils, diamond in ornaments and marble, sandstone, granite etc. for making our houses strong and beautiful. We get different types of metals like iron, copper, aluminium etc. from the Earth's crust in a crude form. We get coal and petroleum from the deep ground.

Coal is used as fuel and helps in producing electricity. Petroleum is used to get petrol, kerosene, diesel etc. Plastic things are also made up of the residue of petroleum.

Man-made Materials

Man has made various types of materials from the raw material, he has got from the nature. For example : man has made glass, stainless steel, cement, plastic, paper, nylon clothes etc. from various raw materials.

SHAPE OF MATERIALS

Three forms of water

The shape of materials can be changed by heating, cooling, pressing and moulding. The common example is of water. You can change liquid form of water by cooling into solid (ice). Solid (ice) can again be changed into liquid by heating. The iron rods can be bent by heating. We can get different things of several shapes by pressing clay or soil.

We can change the shape of paper by folding and pressing it. Plastic can be moulded in various shapes and sizes.

Facts to know

- Water can exist in three forms, i.e. solid, liquid and gas.
- Mercury is the only metal which exists in liquid state of matter.

LET'S RECALL

1. Matter is found in three states in nature : solid, liquid and gas.
2. We get wool, fur, silk etc. from animals.
3. Plants provide cotton, jute, wood, flowers, nuts, leaves, oil, rubber, glue, dyes, wax etc.
4. We get different things from rocks i.e. graphite, diamond, marble, stones, granite etc.
5. We get all the material in the form of solid, liquid and gas.
6. Man has made different things from the raw materials.

Word Power

crude	: in a natural or raw state
hide	: the skin of an animal
material	: things made up of small particles having different properties
residue	: the remainder
soil	: upper crust of the Earth
Earth's crust	: beneath the surface of the ground (underground)

Train Your Brain

Cross Curriculum Connect

1. Answer the following questions in short.

a. How can one change the shape of the materials?

b. What are things made of?

c. Which is the only metal that is liquid?

2. Fill up the blanks with suitable words.

food | coal and petroleum | freezing | properties | Graphite

a. Different materials have different ..... .

b. We use different parts of plants in our ..... .

c. We get ..... from the deep ground.

d. Water can be changed into ice by ..... .

e. ..... is used in pencils to write.

3. Answer the following questions.

a. What is the difference between a solid, liquid and a gas?

b. What are the source of materials?

c. What materials do we get from animals?

4. Tick (✓) the right and cross (×) the wrong statements.

a. A paper burns easily. ☐

b. A rubber band can not be stretched easily. ☐

c. Solid flows when poured out. ☐

d. We get wool from animals. ☐

e. Graphite is used in pencils to write. ☐

f. Liquid (water) can be changed into solid (ice) by cooling. ☐

5. Multiple Choice Questions (MCQs)

Tick (✓) the correct option.

a. Pencil is made of ..... .

(i) graphite ☐ (ii) wood ☐

(iii) metal ☐ (iv) both (i) and (ii) ☐

b Plants provide us ..... .

(i) food ☐ (ii) wood ☐

(iii) medicines ☐ (iv) all of above ☐

c. Soil consists of ..... .

(i) rocks ☐ (ii) minerals ☐

(iii) both (i) and (ii) ☐ (iv) none of these ☐

6. Give one word for each one of the following.

a. A metal existing as liquid at room temperature .....

b. A matter existing excessively in three states .....

c. A matter used in pencils to write .....

d. The source from where we get jute, oil, wax etc. .....

7. Match the columns.

Column A		Column B	
a.	Wood	(i)	Rock
b.	Pencil	(ii)	Plants
c.	Tyre	(iii)	Sheep
d.	Wool	(iv)	Rubber
e.	Vegetables	(v)	Graphite
f.	Sand	(vi)	Tree

Activity Time

To see the flow of water or a liquid.

Method : Take a plastic jar. Make a hole at its side . Insert a straw in the hole. Level this straw in the downward direction. Make another hole little lower than the first one. Insert another straw in it. Level the second straw in the upward direction. Fill up the jar with water.

Observation : You will observe that water flows from a higher level to a lower level.

Conclusion : Water flows from ..... direction.

HOTS

Sonia's mother tells her to keep the juice in refrigerator. By mistake, she keeps it in the freezer. After some time, when she was asked to bring the juice, she finds that the juice has frozen. She has to turn the frozen juice into the juice again otherwise her mother would scold her. How can she do it ?

project Time

Graphite and diamond both are found deep below the soil of the Earth. Both are the carbon products. Why is diamond harder than graphite? Heat both of them and observe the heating effect.


Graphite


Diamond

10

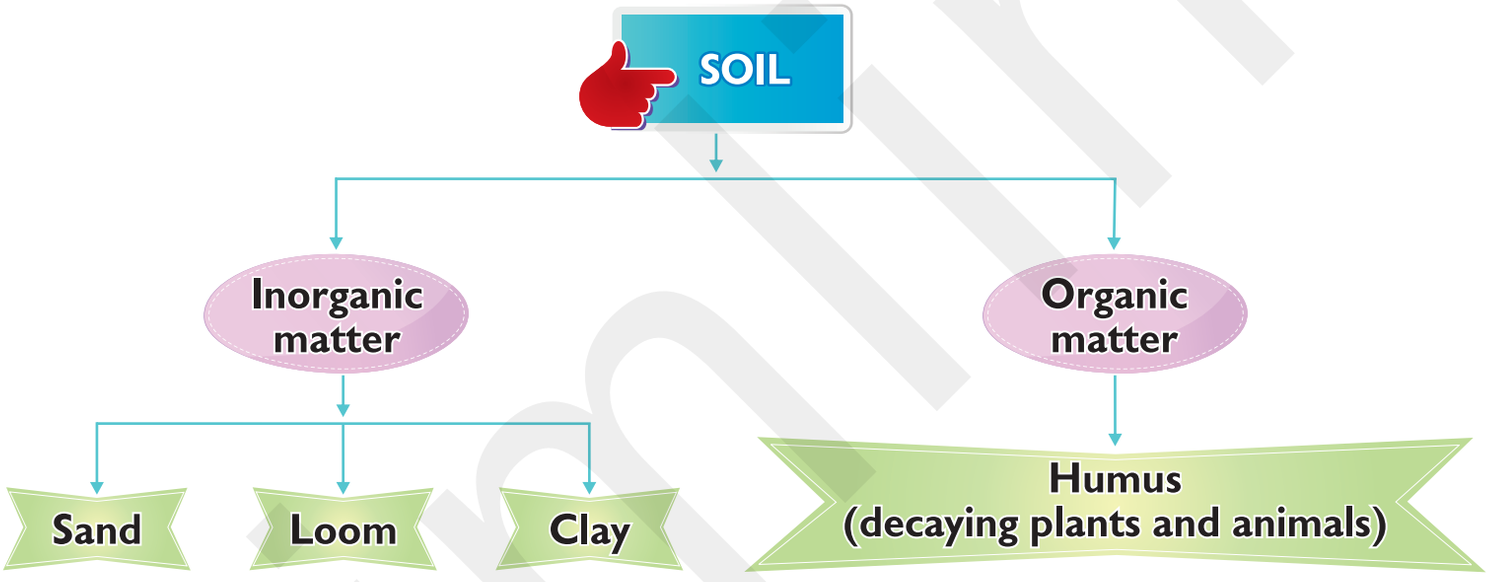
Soil

Learning Objectives

1. Soil Formation
2. Origin of soil
3. Uses of soil
4. Composition and types of soil

Let Me Answer

- What are the 12 major types of soil?
- How many soil types are there?



SOIL

Soil is the upper most layer of the Earth. It is said that it takes about a thousand years to make an inch of soil. In fact, formation of soil took place many many years ago when dinosaurs walked the Earth. The Earth was covered with hard rocks. Heat, cold and wind broke up the rocks into small pieces, which further broke until they become tiny particles of soil. Soil has many diversities.

COMPOSITION OF SOIL

Pick a handful of soil from your playground. Observe the composition of soil. It consists of small stones, gravel, leaves, humus stick, sand and some other very small particles. Different kinds of soil are found at different places. Soil is composed of two parts :

1. Inorganic matter
2. Organic matter

Inorganic Matter

Things made from non-living matter are called inorganic. Rocks are broken down into small particles over millions of years by the action of wind, water and heat. Water and wind hit against the big rocks. The Sun heats up the rock and lets it expand. At night, the rock cools and returns to its normal size. Slowly, huge rocks are broken down into smaller pieces. They are carried by moving water and wind to far away places. There are three types of inorganic matter. They are as follows :

1. Sand

Sand has the largest contribution in forming soil. If you rub it between your hands, it feels rough. It allows almost all the water to drain through it. Sea coasts and deserts have sandy soil. Plants like Opuntia and Cactus grow there.

2. Loam

Loam is a mixture of sand, silt and clay. Loam is made up of organic matter like dead plants and animals. Loam is smooth and powdery. When wet, it becomes smooth but not sticky. Loam holds some water and lets the rest pass through completely. It can hold lots of food material or nutrients for the plants. It contains humus and considered very fertile and best suited for growing plants.

3. Clay

Clay is made of small particles. It has the quality of holding water, therefore it is very useful for paddy.

Clay is smooth when dry and sticky when wet. Clay can also hold a lot of nutrients, but it does not let much air and water to pass through. Bricks, pots, toys or idols are made from clay. Clay is the backbone of ceramic and brick industry.

Organic Matter

Things made from matter that was once alive are called organic. The part of soil that contains organic matter is also called humus. It is made of decaying plants and animals. Earthworms and snails eat the organic matter and their waste matter makes the soil more suitable for plants.

This is why soil is sometimes called living organism. It is not alive but living things are an important part of it. Without soil, many living things would not exist. Without these living things, the soil that supports life would not form.

USES OF SOIL

Soil has many uses.

1. The Habitat for many Organisms

There are many tiny animals that live in the soil. Animals like rabbit and mice make burrows and holes inside the soil. Snake, slug, earthworm, ant, centipede, beetle and snail too give them company.

In winter, soil remains warm compared to the ice-cold surface. Animals like snakes, some types of insects and frogs hibernate (go to sleep) into their holes under the ground. Similarly, when it is very hot during day time, animals go under the soil to keep themselves moist (slightly wet) and cool.

2. Base of Agriculture

Soil is used in agriculture where it serves as the primary nutrient base for the plants. Soil provides water, air and nutrients that a plant needs to grow. Plants have roots deep into the soil or spread out wide. This helps to hold soil and prevents it from being blown away. Soil supports plant life and they support the other forms of life.

3. The Useful Products

Glass is made from sand. Soil is also used to make materials for building houses and containers like clay ovens, pots, vases and so on. Some soils have medicinal value and are used to get relief from pain and also for some beauty treatments.

Facts to know

- A few medicines contain tiny amounts of clay.
- Soil is a composition of various inorganic and organic matters.

LET'S RECALL

1. Soil forms the topmost layer of the Earth's surface and is made when wind, water and heat break down the rocks.
2. Soil is made of organic matter, inorganic matter, water and air.
3. Inorganic soil particles are a mixture of sand, loam and clay.
4. Organic matter consists of dead and decaying plants and animals.
5. Soil has many uses. It is a home to many animals, supports plant life and is used to make many things.

Word Power

composition : a mixture of many substances
particle : a minute quantity or fragment
rocks : hard and soft substances

Train Your Brain

Cross Curriculum Connect

1. Answer the following questions in short.

a. Name five animals that live in soil.

b. Why does soil have different colours?

c. Name the three types of inorganic matter.

2. Fill up the blanks with suitable words.

Inorganic plants and animals sandy heat; cold; wind Clay

a. ..... matter gives soil its texture.

b. Humus is made of dead and decaying ..... .

c. The action of ....., ... and ..... breaks rocks into small particles.

d. ..... is a backbone of ceramic and brick industry.

e. Sea coasts and deserts have ..... soil.

3. Answer the following questions.

a. What is soil? Where does it come from?

b. How do soil and plants help each other?

c. Name three useful things made from soil.

4. Tick (✓) the right and cross (×) the wrong statements.

a. Soil is formed from rocks and minerals. ☐

b. Humus is not made of decaying plants and animals. ☐

c. Sand is the smallest particle in soil. ☐

d. Soil has no living things in it. ☐

e. Soil does not have organic matter, inorganic matter, water and air. ☐

5. Multiple Choice Questions (MCQs)

Tick (✓) the correct option.

a. What are the ingredients of soil?

(i) Sand ☐ (ii) Clay and loam ☐

(iii) Silt ☐ (iv) All of these ☐

b. Soil is composed of two parts, that are ..... .

(i) inorganic matter ☐ (ii) organic matter ☐

(iii) both (i) and (ii) ☐ (iv) none of these ☐

c. Organic matter is called ..... .

(i) sand ☐ (ii) humus ☐

(iii) loom ☐ (iv) none of these ☐

d. Soil consists of ..... .

(i) sand ☐ (ii) leaves ☐

(iii) gravel ☐ (iv) all of these ☐

6. Give one word for each one of the following.

a. Mixture of sand, salt and clay .....

b. The type of soil having organic matter .....

c. Raw material for glass .....

7. Match the columns.

Column A		Column B
a. Clay	(i)	Make burrows in soil
b. Snails	(ii)	Rocks
c. Rat and rabbit	(iii)	Enter deep into the soil and supports the plant
d. Roots	(iv)	Fertile the soil
e. Origin of soil	(v)	Bricks, pots and toys

Activity Time

Take three pots. Put some sand in pot A, some clay in pot B and some loam in pot C. Sow a few seeds in all these pots. Water the pots everyday. After some days, observe in which pot the seeds are growing better? Can you tell why?

HOTS

1. Justify the statement : "The soil is home to millions."
2. A potter uses which kind of soil for making pots ? Why ?

project Time

1. Go to the school garden. Take a handful of soil and collect it in a bowl. Now go to a playground and collect some soil from there. Compare the two samples. Note down the differences between the two.
2. Have you seen an earthen pot? Go to a potter and see him working. Try to make some of your own pots with clay there and enjoy.

Revision Test Paper-I
(Based on Chapters 1 to 4)

Max. Marks : 10

1. Multiple Choice Questions (MCQs) (2)
Tick (✓) the correct option.

a. The toy-car does not come to us because it has ..... .

(i) no life ☐ (ii) life ☐
(iii) small life ☐ (iv) none of these ☐

b. The movement of animals is called ..... .

(i) linear motion ☐ (ii) motion ☐
(iii) circular motion ☐ (iv) locomotion ☐

2. Give one word for each one of the following. (2)

a. Moving from one area and settling in another.....

b. A set of connected organs to work together .....

3. Tick (✓) the right and cross (×) the wrong statements. (3)

a. All the living things, provided by nature are called natural things. ☐

b. Plants can reproduce as human beings. ☐

c. Different animals have same feeding habits. ☐

4. Match the columns. (3)

Column A	Column B
a. Cow	(i) Lion
b. Tiny pores on leaves	(ii) Calf
c. Tearing teeth	(iii) Stomata

Revision Test Paper-II
(Based on Chapters 5 to 8)

1. Multiple Choice Questions (MCQs) (2)
Tick (✓) the correct option.

a. Birds have ..... body.

(i) hard ☐ (ii) heavy ☐
(iii) long ☐ (iv) streamlined ☐

b. ..... build their nests in hollows of mango and jamun tree trunks.

(i) Parrots ☐ (ii) Owl ☐

(iii) Horn bills ☐ (iv) All of these ☐

2. Give one word for each one of the following. (2)

a. The wings attached to the body of the bird with strong muscles .....

b. To emerge from an egg .....

3. Tick (✓) the right and cross (×) the wrong statements. (3)

a. Prevention is better than cure. ☐

b. Woodpecker has chisel-shaped beak. ☐

c. Birds make their nests during summer. ☐

4. Match the columns. (3)

Column A	Column B
a. Red cross	(i) On trees
b. Protective food	(ii) I.H. Dunant
c. Vulture's nest	(iii) Vitamins and minerals

Revision Test Paper- III

(Based on Chapters 9 to 12)

Max. Marks : 10

1. Multiple Choice Questions (MCQs) (2)

Tick (✓) the correct option.

a. Anything that occupies space and has weight is called ..... .

(i) matter ☐ (ii) material ☐

(iii) both (a) and (b) ☐ (iv) none of these ☐

b. ..... is the upper most layer of the Earth.

(i) Rock ☐ (ii) Mineral ☐

(iii) Soil ☐ (iv) None of these ☐

2. Give one word for each one of the following. (2)

a. Beneath the surface of the ground .....

b. A mixture of many substances .....

3. Tick (✓) the right and cross (×) the wrong statements. (3)

a. Revolution causes change in seasons. ☐

b. Water has fixed shape. ☐

c. Soil is made of only organic matter. ☐

4. Match the columns. (3)

Column A	Column B
a. Coal	(i) Hard and soft substances
b. Rocks	(ii) Plant life
c. Flora	(iii) Electricity

Model Test Paper

(Based on Chapters 1 to 8)

Max. Marks : 25

1. Answer the following questions in short. (5)

a. Name two man-made things.

b. Name one plant which eats insects.

c. What are carnivores?

d. Write one function of a flower.

e. Which type of beak does an eagle possess?

2. Fill up the blanks. (5)

a. ..... do not build their nests.

b. A part of the body that has a special purpose is called ..... .

c. Brain has messengers called..... to send instructions.

d. Cow breathes through..... .

e. Plants do not have ..... system.

3. Answer the following questions. (15)

a. How do the plants move? Explain.

b. Name the organ systems present in the animals.

c. Explain gnawing.

d. Write three functions of a flower.

e. Ducks' beaks have tiny holes on the sides. Why?

ACTIVITY-1

To identify the things that can harm children or cause accidents.

Materials required : You have to go through your home, school and neighbourhood park. Besides, you need a classmate (or a neighbourhood friend), one pencil and one notebook.

Procedure:

1. Have a look at the kitchen of your home. What items can harm you if they are misused? Make a list.

2. Similarly, study the premises of your school. What things can harm children?

3. Do the same in your neighbourhood park. You can go along with your friends. You can even ask them what things of the park can harm the children.

4. Now make a table as follows :

Things that can harm children :		
In School	At Home	In Park
1.		
2.		
3.		
4.		
5.		
1.		
2.		
3.		
4.		
5.		
1.		
2.		
3.		
4.		
5.		

Conclusion : Many things can harm children at home, in school and in neighbourhood park. Children should keep away from them or use them carefully.

ACTIVITY-2

To convert a solid into a liquid and a liquid into a gas.

Materials required : 15 cubes of ice, a pan and a stove

Procedure :

1. Put the cubes of ice into the pan.
2. Hold the pan carefully and put it on the stove.
3. Let the lab assistant light up the stove.
4. Ice cubes will get heat. They will start melting to form water.
5. Then, the cubes will get converted into water.
6. Keep on heating water. Bubbles will be produced in water.
7. Water will start boiling. Steam will be formed. You can see steam vapours.

Conclusion : A solid can be melted to form liquid. A liquid can be boiled to form gas or vapours.

ACTIVITY-3

To find out the form of stored energy.

Materials required : Rubber band, plastic straw and scissors

Procedure :

1. Tie a thin rubber band in half.
2. Cut a 12 cm section from the plastic straw and anchor the whole rubber band over the edges.

3. Now slip the scissors around the rubber band at one side of the knot. Cut. The straw shoots away.

Conclusion : The tension in the stretched rubber band is actually a form of stored energy. You release this energy when you cut the rubber and it causes the straw to fly off in one direction. If you watch closely, you will notice that the rubber band moves away in the opposite direction. For every action, there is an equal and opposite

ACTIVITY-4

To produce the conditions for day and night in school lab.

Materials required : One rubber ball, one powerful torch and one assistant for holding the ball

Procedure :

1. The assistant (or your classmate) can hold the ball in the middle of lab.
2. You hold a torch in your hand. All other students are standing behind you. Tell the classmate to hold the ball close to his chest.
3. Tell the lab assistant to switch off the lights of the lab. Now, you switch on the torch and throw its light on the ball.
4. The lit up portion of the ball has day; the other half night.
5. Now, tell your assistant to rotate the ball. The other half portion of the ball will be lit up that way. The part that was lit up would go back and night would fall there.

Conclusion : The Earth has days and nights because it revolves around its axis and the Sun's rays fall on it.

ACTIVITY-5

To measure the length of some objects and compare them.

Materials required : One handkerchief, one table, one computer monitor, one mouse pad, one tiffin box, one scale, a pen and a notebook

Procedure :

1. Put the handkerchief on the table of lab. Measure its length and breadth.
2. Note this data in the notebook. Three classmates can do the experiment together.
3. Repeat the same procedure for all other items.
4. Make a table, as follows :

S No.	Item	Length (cm)	Breadth (cm)
1.	Handkerchief		
2.	Table		
3.	Computer monitor		
4.	Mouse pad		
5.	Tiffin box		

Conclusion : The length and breadth of simple objects can be measured with the help of a scale.

ACTIVITY-6

Make a traffic signal.

Materials required : Cardboard, poster colours (red, yellow and green), pencil, scissors and paint brush

Procedure :

1. Cut the cardboard in a rectangular shape so as to look like a traffic signal pole.
2. Draw three equal circles in a vertical line to make traffic lights.
3. Colour the top most circle red, middle one yellow and the third one green.

Colour the traffic signal.

Conclusion : Your traffic signal is ready.

Protect Your Environment

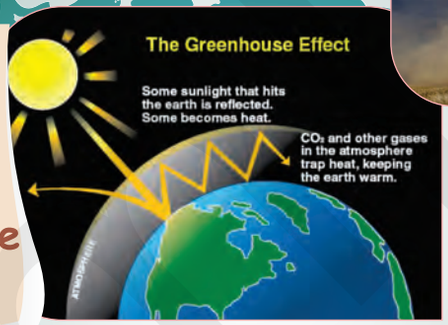
GLOBAL WARMING : PROBLEMS

Melting of Arctic ice cap

Deforestation

Tornado

Increase in Green House gases



Rising of sea level

Earthquake

Use of CFCs

GLOBAL WARMING : SOLUTIONS