

According to National Education Policy 2020

My EVS World 4

(A Textbook of Environment Studies and Life Skills)



Essential Learning

Critical Thinking

Experiential Learning

Arts-Integrated Activities

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With the blessings of :
Our Parents

My EVS World 4



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- National Education Policy 2020
- Activity Based
- Innovative Approach
- Learning with fun
- Uses Eco-Friendly Paper





Environmental studies have assumed great significance in the education of a child in recent times. The subject covers every aspect of the world in which the child lives, himself, how he should care for his health and the way he should behave in society. It is very important for a child to be aware of his/her surroundings.

The book “**My EVS World**” is a series of 1 to 5 which is strictly based on the guidelines of NEP 2020 pattern to facilitate the teaching and learning of My EVS World.

The contents presented in these books have been selected keeping in view the physical and mental growth of the child. There will be active participation of the students through regular exercises and activities within the text.

Key Features of the Series

- ★ Covers the latest syllabus of various boards.
- ★ All the exercises in the books can be used as tasks for **Revision Test Papers** and **Model Test Papers**.
- ★ Interactive study approach is considered.
- ★ An **activity** is provided in each chapter to facilitate hands-on learning and consolidation of environmental concepts.
- ★ **Summary** is given at the end of each chapter to highlight some important points of the topics.
- ★ **Exercises** are carefully graded and contain a wide variety of problems. They help the children to connect what they are learning to everyday situations.
- ★ **Let Me Answer** is given in each chapter to enhance learning.
- ★ **Infobits** are also given in each chapter.
- ★ **Teacher** Notes are given in each chapter wherever required.



We hope that the series will fulfil the needs of teachers and students by its virtue of its plus points. Still, there is always room for improvement. Any suggestions from the teachers as well as the parents would be highly appreciated and truly appreciated.



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Our Internal Organs



LEARNING OBJECTIVE

★ Internal organs and their uses

★ Sensing the world

Each one of us looks different in some way or the other. We have **external organs** and **internal organs**. We can see and touch some parts such as feet, hair, hands, nose, etc. These are external organs. Internal Organs and Their Uses Some parts of the body are inside the body. We cannot see them such as brain, lungs, kidneys, stomach, etc. These are called **internal organs**.



Let Me Answer

How many times does a heart beat in a minute?



Brain

Our brain helps us to think. It controls all our sense organs and the way we think. It is located inside our head.



Heart

Heart is located inside our chest (on the left side). The heart pumps blood to the whole body.



Lungs

Our lungs help us to breathe. There is a pair of lungs located inside our chest.



Stomach

The food that we swallow goes to the stomach. It churns the food and helps in digestion.



TEACHER'S NOTES

Tell the students about the various types of internal organs. Use the models and pictures of these organs to explain their functioning and importance in the body.



Besides these, we have liver, kidneys and many other organs inside our body.



My **eyes** help me to see different things.



Sensing the world

Eyes, ears, nose, tongue, and skin are our **sense organs**.



My **nose** helps me to smell things.



infobits



- Every person in the world has unique and unmatched **fingerprints**, **toe prints** and **tongue-prints**.



My **ears** help me to hear different sounds.



My **tongue** helps me to taste sweet, sour, salty and bitter things.



I feel hard, soft, cold, hot, smooth and rough things using my **skin**.



Kid IQ

Which is the largest internal organ in the human body?

Fact Finder



The human **liver** can regenerate lost tissue, often restoring itself to its original size and function.



Summary

- Brain controls our sense organs.
- The heart pumps blood to the whole body.
- Lungs help us to breathe.



EXERCISE



A. Tick (✓) the correct option.

- a. Which of these is an internal organ?
Skin ☐ Eyes ☐ Lungs ☐
- b. Which of these is an external organ?
Stomach ☐ Kidneys ☐ Ears ☐
- c. Our tongue helps us to
See ☐ Taste ☐ Smell ☐
- d. Which one of these is located on the left side of our chest?
Nose ☐ Tongue ☐ Heart ☐

B. Fill in the blanks.

- a. Our _____ helps us to think .
- b. Our _____ helps us to breathe.
- c. The food that we swallow goes to the _____ .
- d. Our lungs help us to _____ .
- e. Liver and kidneys are _____ organs.

C. Match the columns.

- | | |
|----------------|----------------------------|
| a. The heart | (i) help us to breathe. |
| b. The lungs | (ii) is an internal organ. |
| c. The stomach | (iii) helps us to think. |
| d. The brain | (iv) pumps blood. |
| e. Liver | (v) helps to digest food. |

D. Answer the following questions.

a. What do you know about internal organs?

b. What do you know about external organs?

c. What is the function of the brain?

d. What is the function of lungs?



A. Drawing an outline of the body.

Perform this activity in pairs. One of the partners must lie down on the centre of a big sheet. Ask your partner to draw the outline of your body with a black crayon. Draw the different organs of your body in the outline and label them. Draw the face and fingers too. You can dress up the figure too and hang it on the wall.



B. Regular exercise is good for our body. Do these two simple yogasanas to stay fit and healthy.



2

Living and Non-living Things



LEARNING OBJECTIVE

- ★ Living things and non-living things
- ★ Features of living things

Living and Non-Living things

In this world, there are many types of living and non-living things. For example, human beings, animals, insects, plants and trees are all living things, which have some special features. All living things need air, water and food to survive. There are few similarities among various kinds of living things. Things that do not have life are called non-living things. Chairs, tables, and books non-living things.



Human beings breathe through their nose



Leaves breathe from stomata



Earthworms breathe through their skin

Features of Living Things

Living Things Need Air to Live

Air is a mixture of many gases. One of them is **oxygen**. Oxygen is required to breathe for all living things. All living things breathe in various ways.

Human beings and animals breathe through the nose. Some animals like the earthworms breathe through their skin. These earthworms make the soil fertile. Some aquatic animals like fish, tadpole etc. breathe through their gills. They use oxygen dissolved in water. Plants breathe through, tiny openings called stomata. Stomata are found on leaves.



Fish breathe through their gills



TEACHER'S NOTES

They should emphasize on the differences between living and non-living things.



Bathing



Washing hands



Drinking



Watering plants



Cleaning



Animal drinking

Some plants also have stomata on their stems and roots.

Living Things Need Water for Different Purposes

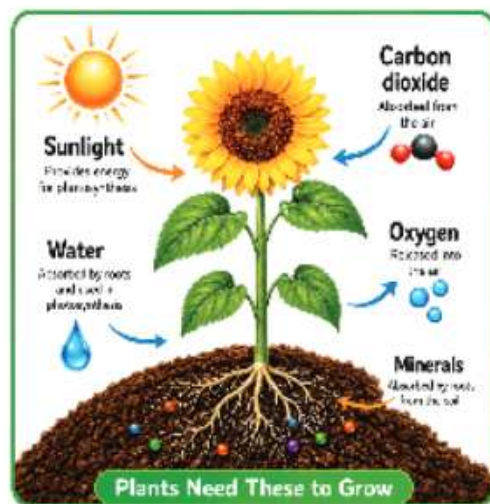
All living things need water for different purposes. Human beings need water to drink, bathe, wash etc. Animals require water to drink and bathe. Plants require water to make food. They also require water for transpiration.



Living Things Need Food

All living things take food to get energy.

Plants are the only things that can prepare food with the help of sunlight, water, carbon-dioxide, minerals etc. Leaves prepare food for plants and process of preparing food is called photosynthesis. Plants also need food to grow. Sunflower turns towards sunlight and prepare food from sunlight. All human beings and animals depend on plants for their food directly or indirectly.



Let Me Answer

1. Can plants move from one place to another?
2. Which type of movement do plants show?



Human



Cow



Dog



Plant

Living Things have Movement

All living things have different types of movements. Human beings can move from one place to another place for many purposes. Animals move from place to place in search of food and shelter. Birds have wings to fly and feet to walk. Plants cannot move directly from one place to another, but show various types of movements.

infobits

- Plants also breathe and prepare food. The plants prepare food from water, carbon - dioxide and sunlight.

Horse



Bird



Child



All Living Things Grow

All living things are born, grow, become adults, then old and die. You can note down many changes during the period of growth. Seeds become plants and plants grow further and become trees.



All Living Things have Young Ones

All living things reproduce their young ones to maintain their race. All human beings and animals like dog, cat, horse, elephant, giraffe, cow etc., give birth to young ones. Living things that give birth to young ones are called mammals. Birds, insects, fish, turtles etc., lay eggs. After some time (hatching), their young ones come out of the eggs.

Most of the plants grow from seeds but some plants also grow from stems, roots or branches.



Cow



Human



Lion



Cat



Summary



- All living things need air, water and food to survive.
- Plants require water to make food.
- All living things have different types of movements.
- Living things that give birth to young ones are called mammals.



Fact Finder



Living things can grow, reproduce, and respond to stimuli, while nonliving things lack these characteristics and do not exhibit life processes.



EXERCISE



A. Tick (✓) the correct option.

a. Plants breathe through

Nose ☐ Mouth ☐ Stomata ☐

b. All living things breathe through

Same organ ☐ Different organs ☐

Nose ☐ Mouth ☐

c. Earthworms breathe through

Nose ☐ Skin ☐ Gills ☐

d. Living things that give birth to young ones are called

Mammals ☐ Reptiles ☐ Birds ☐



B. Fill in the blanks.

1. Human beings breathe through their _____.
2. Food is the source of _____.
3. Plants breathe through _____.
4. Plants need _____ to make food.



C. Write true and false.

- a. All living things change with their growth. _____
- b. Stems and roots of some plants also have stomata. _____
- c. Some animals reproduce by laying eggs. _____
- d. All living things have nose to breathe. _____



D. Match the columns.

- | | |
|-----------------|---------------|
| a. Leaves | (i) Nose |
| b. Human beings | (ii) Gills |
| c. Fish | (iii) Stomata |
| d. Earthworm | (iv) Skin |



E. Answer the following questions.

- a. What is photosynthesis?

- b. What happens when living things are born?

- c. How do fish breathe?

- d. How do plants prepare their food?



- A. Collect different types of leaves. Dry them and paste them in your scrapbook.
- B. Play with a dog and observe what are the similarities between dog and you.



Our Food



LEARNING OBJECTIVE

- ★ Need of food
- ★ Food from plants
- ★ The journey of food
- ★ Food of different regions



Need of Food

Food is one of our most basic needs. We need food to get energy to work and play. We need food to grow strong. Food helps us to stay healthy and free of diseases.

Food from Plants

Most of the food that we eat comes from plants. Cereals, pulses, fruits and vegetables, spices, oil, etc. are all obtained from plants. We also get beverages like tea and coffee from the plants.

Cereals and Pulses

Foodgrains like rice, wheat, oats, maize and millets are called cereals. Urad, gram, arhar, kidney beans, etc. are pulses. Cereals and pulses together are called **foodgrains**. Rice is a staple food in many parts of the country. Wheat flour is used to make chapattis, bread, etc.



TEACHER'S NOTES

Tell the students about healthy food habits. Tell them about the foods that we need for our growth. Also, tell them about how we get the food from farms to our plate

infobits



- Tell the students about healthy food habits. Tell them about the foods that we need for our growth.
- Also, tell them about how we get the food from farms to our plate.

Fruits and Vegetables

Fruits and vegetables are also obtained from plants. They are full of vitamins and minerals and good for health. They protect us from diseases and keep us healthy.

Mango, banana, cherry, orange, pineapple, papaya, and grapes are some popular fruits.



Fruits are eaten raw. We also drink the juices of different fruits.

Peas, carrot, gourd, potato, turnip and radish are some common vegetables. They are eaten raw or after cooking.



infobits

Rasins, almonds, cashewnuts, pistachio and walnuts are dry fruits that are good for health.

Oil Seeds

Different kinds of oils are used in different parts of India for cooking. Oil is extracted from special seeds called oilseeds.

Oilseeds are crushed to get oil. Groundnut, sesame, mustard, olive, sunflower and soyabean are some of the most commonly used oilseeds.



Let Me Answer

Can plants move from one place to another? No.
Then which types of movement do plants show?

Spices

Spices are added to the food to give it flavour, taste and colour. We get spices from flowers, stem, fruits, bark, seeds and roots of the plants



Beverages

Leaves of some plants are used to make drinks. These drinks are called beverages. Tea and coffee are popular beverages obtained from plants.



Tea



Coffee



Tea plantation

The Journey of Food

The journey of food starts in the fields of the farmers. Farmers grow crop plants on large areas of land called farms. The farmer first prepares the field by ploughing it. Small farmers use oxen to plough their fields whereas big farmers use tractors for the same. Then he adds manures and fertilizers to the soil to increase the yield of his crop. The second step is sowing the seeds. After a few days the seeds germinate and small plants appear.

infobits

- Spices like ginger, cloves and turmeric can be used as medicines.



Farmer grows crops



Ploughing the fields



Sowing the seeds



Irrigating the field



Irrigating the Crops



Harvesting the crop



Threshing the crop



Winnowing the crop



Packed and sent to the market

The third step is irrigating the crops. The young plants are watered regularly and sprayed with pesticides and insecticides to keep them safe from insects. The crops grow in about six months. They are then ready to be cut. The fourth step is harvesting i.e. cutting the crops.

After the crops have been harvested, grains are separated from the plants. This is called threshing. Removing the husk further cleans grains. This is called winnowing. Now the crops are ready to be packed and sent to the market on the tractor, truck or bullock cart.

The crop is transported to the wholesale market or mandi. From the wholesale market this food stuff is bought by the retailers. We buy the food stuff from the retailers.

FOOD OF DIFFERENT REGIONS



Farmers grow crops in their fields.



Wholesalers buy and transport food items from the fields to the wholesale markets.



Retailers and vendors buy food items from mandis and sell them in local markets.



The food items are washed, cleaned and cooked at home.



We eat and enjoy this food together.

Let Me Answer

Here the farming processes are given below. Can you arrange them in the correct order?

Adding fertilisers, sowing the seeds, ploughing.

Name of any three dishes you like to eat



Dal-Bati Choorma
from Rajasthan.



Makki ki Roti,
Sarson Ka Saag from
Punjab.



Fish curry, rice and
rasgulla from Bengal.



Dhokla, Thepla and
Khandvi from Gujarat.



Summary



- Food is one of our most basic needs.
- Plants are the main source of food.
- Cereals and pulses together are called **foodgrains**.
- Oil is extracted from special seeds called oilseeds.
- Fruits and vegetables are also obtained from plants.
- Spices are added to the food to give it flavour, taste and colour.
- The journey of food has these steps.
- Ploughing the field *Sowing the seeds*Irrigating the field
- Harvesting the crops *Threshing the crop *Winnowing the crop.
- Different regions have their own special food items.



Fact Finder



Bananas are berries, while strawberries are not actually berries but aggregate fruits.





EXERCISE



A. Tick (✓) the correct option.

a. Which of these is a dry fruit?

Apple

☐

Almond

☐

Cake

☐

b. Which of these is not a spice?

Bay leaf

☐

Cinnamon

☐

Coffee

☐

c. Cardamom is a

Fruit

☐

Oilseed

☐

Spice

☐

d. Wholesalers sell food to the

Retailers

☐

Shopkeepers

☐

Both of them

☐

B. Give two examples of each.

a. Spices

b. Oilseeds

c. Cereals

C. Answer the following questions in short.

a. Which is the staple food in many parts of the country?

b. What is the famous food of Rajasthan?

c. What are cereals?

d. What is used to make chapattis, bread etc. ?

e. What is winnowing?



D. Answer the following questions.

a. Why do we need food?

b. What are foodgrains? Explain.

c. What are beverages?

d. Describe the journey of food.



Activity Time



Collect the samples of different spices in small plastic packets. Attach them to your EVS notebook and label them.



Water



LEARNING OBJECTIVE

- ★ Uses of water
- ★ Storing Water
- ★ Evaporation
- ★ Sources of water
- ★ Condensation



Uses of Water

All living things need water to survive. We need water for drinking, bathing, washing, cooking and for many other activities. Plants need water to live and grow. Animals also need water to drink and bathe.



About three-fourths of our planet Earth is covered with water. Therefore, Earth is also known as **blue planet**. Most of the water on the blue planet Earth is present in seas and oceans which is salty. Some part of water is frozen in the form of ice or snow. Only one percent of Earth's water is fresh drinking water which is available in rivers, lakes and wells.



Sources of Water

Let us study about various sources of water :

Rain

Rain is the main source of water on Earth. It fills rivers, lakes and ponds during the monsoon season. Some rain water seeps into the ground and fills wells and raise ground water level.



TEACHER'S NOTES

Tell the students about water and its various sources. Also, tell them about the things in which we use water. Encourage them to save water and use it efficiently.

Underground Water

The rainwater that seeps into the ground, gets collected as underground water. This water is safe and clean for drinking. Wells, handpumps and tubewells are used to take out underground water. Sometimes, underground water appears on the surface in the form of **springs**.



Lake



Pond



Lakes and Ponds

A large area of water surrounded by land is called a lake. An area of water smaller than a lake is called a pond. A pond may be natural or man-made.

Rivers

The rivers which get their water from rain are called rainfed rivers. They do not flow throughout the year. They dry up during the summer season but have plenty of water in the rainy season.



Summer (Dry Season)



Rainy Season

For example: Krishna, Kaveri, Godavari, Narmada and Mahanadi river.



Krishna



Kaveri



Godavari



Narmada



Mahanadi



Snowfed Rivers

The rivers which get water from the melting ice and snow from high mountains are called Snowfed rivers. They do not dry up in any season. For example Ganga, Yamuna and Brahmaputra river.



Oceans and Seas

An ocean is a huge body of water. There are five oceans in the world. They are the Pacific, Atlantic, Indian, Arctic and Antarctic. A sea is also a large waterbody, but smaller than an ocean. There are many seas in the world. The water present in the sea and ocean is salty and not fit for drinking. Name the oceans and seas that surround the Indian subcontinent.



Storing Water

Though rain is the major source of water, but it does not rain throughout the year. So we need to store and conserve water. This is done by building dams, canals and reservoirs.

Dam

A dam is a wall built across a river to hold back or block the flow of river water. This water is stored and used to generate electricity, irrigate fields and even for domestic purposes.

Canal

A canal is a channel of water originating from a river and it is used to irrigate the fields.

Reservoir

A reservoir is an artificial or man-made lake built behind a dam to store the blocked water of the river. Later this stored water is used for various activities.



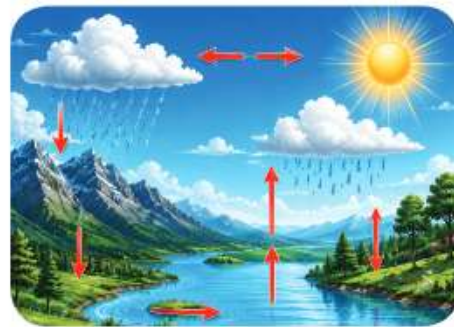
Condensation

When water vapour cools down, it changes back into drops of water. This process is called condensation.



Have you ever observed drops of water on the surface of glass filled with cold drink? These drops are actually condensed water vapours. The process of evaporation and condensation are two very important factors which maintain the balance of water on the Earth. They regulate the water cycle or rain cycle. They cause the continuous movement of water from water bodies to air and then back to water bodies.

Water is a very precious natural resource. We must use water judiciously and prevent its wastage.



infobits



- Plants give off water vapour through tiny pores present on the surface of the leaves. This is called transpiration.



Let Me Answer

Name the source that contains the maximum amount of water but we cannot use it. Can you tell the reason?



Evaporation

There is a large amount of water found in the air in the form of water vapour. When water gets heated, it changes into steam or water vapour and goes into the air. This change of water into water vapour on heating is called evaporation. There are many conditions in which the water evaporates faster. For example

- 1. Water evaporates faster when it is left in the open.**
- 2. Water evaporates faster when the air is dry.**

You must have seen that a clothes take a long time to dry in the monsoon season because the air is full of moisture. In summer season, the air is dry so clothes dry quickly. The evaporation becomes faster on sunny days.

- 3. Water evaporates faster when the surface is large.**

The water evaporates faster when it is spread on a large area. Therefore we spread our clothes to dry them. If not spread properly, they will take longer time to dry.



4. Water evaporates faster when it is windy.

Pour water into two small containers. Keep one under the moving fan and the other in a room with no wind. We will see that water evaporates faster under the fan. The water evaporates faster because wind helps in fast evaporation. So, your mother keeps wet clothes under the fan during rainy days.



5. Water evaporates faster in high temperature.

High temperature makes the air hot and helps in faster evaporation of water.



Summary



- All living things need water to survive.
- The different sources of water are rain, lakes, ponds, rivers, seas and oceans.
- Water is stored in dams, canals and reservoirs.
- Water evaporates when it is left in open.
- Water evaporates faster in high temperature.
- Evaporation and condensation are the two processes by which water changes its form.



Fact Finder



Bananas are berries, while strawberries are not actually berries but aggregate fruits.





EXERCISE



A. Tick (✓) the correct option.

a. Which is the main source of water?

River ☐ Lake ☐ Rain ☐

b. Underground water can be taken out by _____.

well ☐ tubewell ☐ both ☐

c. Which is a channel of water originating from a river?

Dam ☐ Canal ☐ Reservoir ☐

B. Fill in the blanks.

a. All living things need _____ to survive.

b. Water _____ when it is left in open.

c. Water evaporates faster in high _____.

d. Earth is known as _____.

C. Answer the following questions in short.

a. Sea and ocean water is salty. _____

b. Atlantic ocean is the biggest ocean. _____

c. There are six oceans in the world. _____

d. Dam is the main source of water on earth. _____

D. Answer the following questions.

a. What are the different sources of water?

b. What is the difference between a lake and a pond?

c. What is an ocean?

d. What is evaporation?



Activity Time



Make a poster using different colours on A-3 size sheet, on the topic "Save Water". Add a slogan to it as well as.



Revision Test Paper - I

(Based on Chapter 1 to 4)



A. Tick (✓) the correct option.

a. Which of these is an internal organ?

Skin

☐

Eyes

☐

Lungs

☐

b. All living things breathe through?

Same organ

☐

Nose

☐

Different organs

☐

c. Cardamom is a?

Fruit

☐

Oilseed

☐

Spice

☐

B. Fill in the blanks.

a. All living things need _____ to survive.

b. Food is the source of _____.

c. Plants need _____ to make food.

d. Our lungs help us to _____.

C. Write true or false.

a. Some animals reproduce by laying eggs.

b. There are six oceans in the world.

c. Animals also need water to drink and bathe.

D. Answer the following questions in short.

a. What are cereals?

b. What is winnowing?

E. Answer the following questions.

a. What is the function of lungs?

b. What are beverages?

5

Shelter



LEARNING OBJECTIVE

- ★ Do animals also have homes?
- ★ Shelter of land animals
- ★ Nests of birds
- ★ Shelter of water animals

Do animals also have homes?

Animals also need a safe place to live. They need shelter to protect themselves from enemies, bad weather and to raise their young ones. Animals live in different kind of homes. Let us read about some types of animal homes.



Nest of a weaver bird



Nest of a woodpecker



Nest of a penguin

Nests of Birds

Birds live on trees. They make a nest to lay their eggs, keep them safe and warm. Birds use dry grass, leaves, twigs, cotton and thread to make their nest.

- A crow makes a nest with dried sticks.
- Flightless birds, such as ostrich, dig holes in the ground to hatch and protect their young ones.



TEACHER'S NOTES

Help the students to understand the various types of shelters for animals. Tell them the names of these shelters. Use pictures to make understanding easy.



- Weaver bird uses its beak to weave the nest using dry strips of palm leaves.
- The nest hangs down from the tree and bird makes its entrance from the lower end.
- A woodpecker makes holes in tree trunks to make its nest.
- A tailor bird stitches leaves together to make its nest.
- A penguin makes nest with stones.

infobits

A cuckoo does not make its nest. It lays eggs in the nests of other birds.

Shelter of Land Animals

Animals that live on land are called terrestrial animals.

Let Me Answer

Which animals are called arboreal? Can you give examples?

Wild Animals



Monkey on tree



Cave



Burrow



Ant-hill

Wild animals are those that live in forests. They usually find natural shelters for themselves. Animals like monkeys and chimpanzees live on trees. They are known as . Lions arboreal animals and bears live in caves or dens. Some animals live under the ground like rabbits and mongoose make burrows. Snakes live in holes. Ants make ant-hills with tunnels of mud.



Homes of Domestic Animals



Shed



Kennel



Farms



Stable

Domestic Animals

We build shelters for domestic animals to protect them from heat, cold, rain and other animals.



Dogs

are kept in kennels



Horses

are kept in a stable.



Pigs

are kept in a sty.



Goat

are kept in farms.

Shelter of Water Animals



Animals that live in water are called aquatic animals. Water is a home for many animals on the Earth. Some of the aquatic animals are fish, shark, dolphin, crab, seal, walrus, sea lions, etc.



infobits

Whales and dolphins though live in water but come out of the surface of water to breathe.

Some of these like star fish and sea anemones live in shallow water while some animals like shrimp live on the sea bed. Water provides them with the oxygen and the food they need to live.

Shelter of Animals that live both on Land and Water

Animals that can live both on land and in water are called amphibians. Some of the amphibians are frogs, toads, newts and salamanders. They have lungs to breathe on land, while in water they breathe through their skin.



Fact Finder

The world's oldest known shelters are believed to be caves used by early humans over 2 million years ago.



Bees

live in hives
made of wax



Wasps

make their nest
out of paper.

Crocodiles and alligators

Crocodiles and alligators also live both on land and in water. They are however. They breathe through reptiles their nose. They lay eggs onland. Social insects like honeybees and wasps live in large groups called colonies.



Nocturnal Animals

Animals that are active at night are called nocturnal animals. They sleep during the day. Nocturnal animals like cockroach and kangaroo rats stay in cool underground places. They come out at night when the weather is cool. Nocturnal animals like owls, lemurs and cats have special eyes that see well in the dark.



A Spider's Web

A spider spins its web to trap its prey. The web is made up of a type of silk that comes out as liquid from the spider's stomach. It solidifies once it comes in contact with the air.



Summary



- Animals need a safe place to live.
- Birds make nests to lay their eggs.
- Animals that live on land are called terrestrial animals.
- Monkeys and chimpanzees live on trees. They are known as arboreal animals.
- Social animals live in colonies.
- Animals that live in water are called aquatic animals.
- Animals that live both on land and in water are called amphibians.
- Nocturnal animals are active at night.
- A spider spins its web to trap its prey.





A. Tick (✓) the correct option.

a. A snake lives in a?

Hole

☐

Cave

☐

Den

☐

b. A cow is kept in a?

Shed

☐

Sty

☐

Stable

☐

c. Ants live in a?

Ant hill

☐

Hive

☐

Cave

☐

d. Animals that live both on land and in water are called?

Amphibians

☐

Reptiles

☐

Mammals

☐

e. Which bird uses its beak to weave the nest using dry strips of palm leaves?

Tailor bird

☐

Kingfisher

☐

Weaver bird

☐

B. Fill in the blanks.

a. Animals that live on land are called _____.

b. Monkeys and _____ live on _____.

c. Animals that live both on land and in water are called _____.

d. A spider spins its _____ to trap its prey.

e. Social insects like _____ and _____ live in large groups called _____.



C. Give two examples of each of the following .

a. Terrestrial animals : _____

b. Arboreal animals : _____

c. Aquatic animals : _____

d. Nocturnal animals : _____

E. Answer the following questions.

- a. Do animals also have homes?

- b. Where does a lion live?

- c. What do you mean by colonies?

- d. Which bird makes a nest with dried sticks?



F. Answer the following questions.

- a. Why do animals need shelter?

- b. What material do birds use to make a nest?

- c. What are terrestrial animals?

- d. What are nocturnal animals?

- e. What are arboreal animals?



- A.  **Make a chart on houses of animals and hang it in the class.**
- B.  **Go to your school library and collect information about the habitats of different animals.**
- C.  **Make a “bird bath” and a “bird feeder” and hang it outside your home. Observe the birds that come there.**



Our Clothes



LEARNING OBJECTIVE

- ★ Making of cloth
- ★ Clothes we wear
- ★ Dresses of women
- ★ Dresses of men
- ★ Modern dresses



We all wear clothes to protect our bodies from heat, cold, rain and insects. Good and clean clothes make us look smart.

infobits

Early man covered himself with leaves and bark of trees. He also used animal skins to cover himself.



Making of Cloth



Clothes are made by different processes. The process by which cloth is made on handlooms or powerlooms is called weaving.

Knitting



Knitting is done on a knitting machine. At home, knitting needles are used for the same to knit woollens.

Textiles



A textile is a material that has been woven from yarn. Textiles are woven, printed and embroidered with different designs.

Dyeing



The fabrics can be dyed using natural or synthetic dyes. Tie and dye is a method used in Rajasthan to tie clothes and dye them. This method produces beautiful patterns. It is also called bandhani.



TEACHER'S NOTES

Tell the students about the various types of clothes that we wear in different seasons. Also, tell them the different wearing trends in the different parts of our country.

1

KALAMKARI

Kalam means pen. It involves painting of design on fabrics with a special pen. Bihar is famous for this work.

**Let Me Answer**

What kinds of clothes are popular in Punjab and Maharashtra?

2

BLOCK PRINTING

This kind of printing is done by wooden blocks. Blocks are dipped into paint and pressed on the cloth to make beautiful patterns. Many bed sheets are decorated by block printing.



3

PHULKARI

Phulkari is a kind of embroidery done on cloth using colourful silk threads. This work is done in Punjab.

4

KANTHA WORK

Kantha work is an embroidery done on cloth using fine colourful threads and sometimes beads. West Bengal is famous for this work.



5

IKAT

Ikat is a beautiful way of dyeing the yarn into different colours and using them to weave a cloth. Odisha is well known for this work.

**Kids IQ**

A person is wearing a shirt and mundu. Do you know which state that person belongs to?

CLOTHES WE WEAR

We all wear clothes to protect our bodies from heat, cold, rain and insects. Good and clean clothes make us look smart.



Cotton clothes in summer



Woollen clothes in winter



Raincoat and gumboots in rainy season

DRESSES OF WOMEN

We wear clothes to look attractive. We wear special clothes on special occasions. The most common dress for women in our country is a saree. But it is worn differently in different states.

DIFFERENT WAYS OF WEARING A SAREE



Fact Finder

- Denim fabric used in jeans was originally created for durable work pants, not as a fashion statement.



DRESSES OF WOMEN IN DIFFERENT STATES



Women wear salwar-kameez in Punjab.



Himachali women wear phiran.



In Assam, women wear mekhla-chadar.



In Rajasthan, women wear lehenga-choli.

infobits

DRESSES OF MEN

Washing and ironing are the main factors of caring clothes.



In Kashmir, men wear phiran-salwar with a cap.



In Uttar Pradesh, men wear dhoti-kurta.



In Rajasthan, men wear angrakha and a turban.



In Kerala, men wear a lungi called a mundu and shirt.

MODERN DRESSES

Modern dresses for men and women include, skirt-top, jeans-shirt, pant-shirt, short-shorts, leggings-kurta and many more. These dresses are generally worn by people in big cities.



MODERN DRESSES



Summary

- We all wear clothes to protect our bodies from heat, cold, rain and insects.
- We wear clothes to look attractive.
- Kalamkari, Block printing, Phulkari, Ikat, Kantha work, etc. are different ways of making clothes beautiful.



EXERCISE



A. Tick (✓) the correct option.

a. Kalamkari is famous in?

Bengal

☐

Bihar

☐

Andhra Pradesh

☐

b. Knitting is done on a?

Knitting machine

☐

Sewing machine

☐

Weaving machine

☐

c. In Rajasthan, women wear _____ with odhni.

Phiran

☐

Kameez

☐

Lehenga-choli

☐

B. Fill in the blanks.

a. _____ is a method used in Rajasthan to tie and dye clothes.

b. Clothes are worn according to the _____ of a place.

- c. Clothes make us look smart and _____.
- d. In Uttar Pradesh, men wear _____.

C. Write true or false.

- a. Knitting is done on a weaving machine. _____
- b. All clothes are made by the same process. _____
- c. Kalamkari—Kalam means pen. _____
- d. Ikat is famous in Bihar. _____
- e. Clothes are worn according to the climate. _____

D. Answer the following questions.

- a. What is Kantha work?

- b. What is Ikat?

- c. Why do we need clothes?

- d. What do men and women in India wear?

- e. What is knitting?



Identify the state these people belong to by looking at their clothes.



Plant World



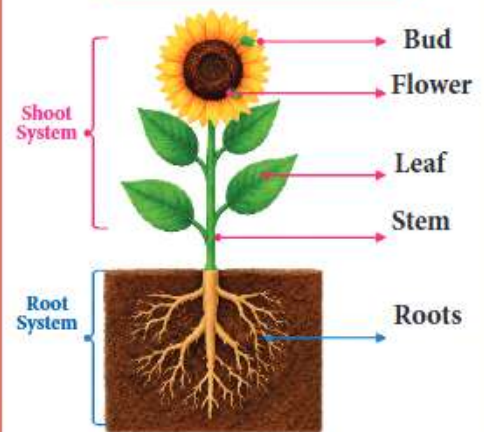
LEARNING OBJECTIVE

- ★ The root system
- ★ Importance of roots
- ★ Types of roots
- ★ The shoot system



Just like our body has many parts, in the same way plants have many parts. Stem, leaves, buds, flowers and fruits grow above the soil and form the **shoot system**. The part of the plant under the soil forms the **root system**.

Parts of a Plant



THE ROOT SYSTEM

The roots look like long ropes spread out under the soil. They hold the plant firmly to the soil and help the plant to stand straight. They also help the plant to absorb water and minerals from the soil. Some roots store extra food and are eaten by us. For example, carrot, radish, beetroot etc. There are two types of roots—taproot and fibrous root.

TAPROOT

A taproot has a thick centre and grows down straight. Small hair like roots grow from the sides of a taproot. Most tall trees have an extremely well developed taproot system. Mustard, carrot, pea, radish, sunflower and bean plants have a taproot.

infobits

The roots of mangrove trees, grow upwards and come out of the soil to breathe.



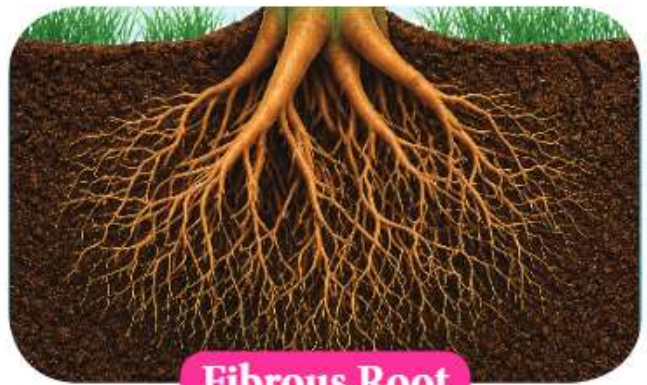
TAPROOT

TEACHER'S NOTES

Tell the students about the different types of plants and their various parts. Explain to the students about the root and shoot systems of plants and their functions.

FIBROUS ROOT

A fibrous root consists of many small roots which branch out from the base of the stem. It does not go very deep into the soil. Fibrous roots branch sideways holding soil particles together. Grass, wheat and rice plants have fibrous roots.



Fibrous Root

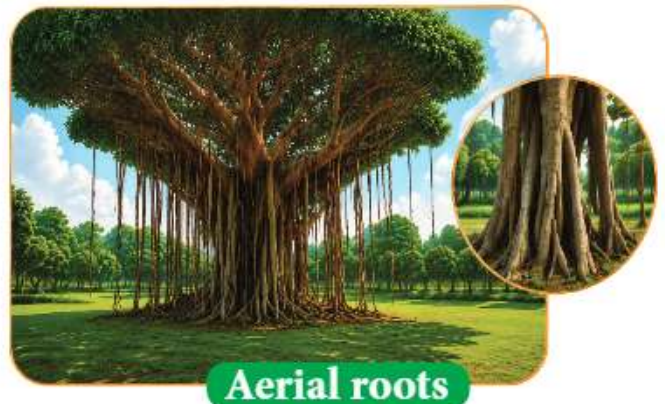
Let Me Answer

Which part of a plant absorbs water from the soil?

TYPES OF ROOTS

1. Aerial Roots

Big trees like banyan have numerous roots that grow downwards from the branches. They are called aerial roots. They enter the soil and form secondary root or prop roots. These roots give support to the heavy branches of the banyan tree.



Aerial roots

2. Water-storing Roots

Water-storing roots store water, making it easier for plants to survive long and in dry summer months. e.g. Gourd and pumpkin.



3. Food-storage Roots

Plants like carrot, radish, beetroot and turnip store food for the plant in their roots. We eat these roots as vegetables.



Carrot



Beetroot



Radish

4. Propagating Roots

Such roots have buds close to the surface of the ground. These buds can grow into new independent plants as in the case of cherry and strawberry plants.

infobits

During drought and famine, when there is scarcity of food, people dig out roots from the dry soil and eat them.



Propagating roots in strawberry

IMPORTANCE OF ROOTS

- ★ Roots play a very important role in the growth of a plant. Roots hold the plant firmly to the soil. Thus, even when a strong wind blows, the plants do not get uprooted.
- ★ Roots absorb water and minerals from the soil and send them to different parts of the plants.
- ★ Heavy rain and a strong wind wash or blow away the topsoil. This is called soil erosion. Roots bind the soil and prevent **soil erosion**.
- Many human activities adversely affect the roots of plants. Activities like construction cause lot of damage to the roots of the trees planted on the roadsides.



Kids IQ

• What else do we call a banyan tree?

The Stem

The stem transports water, minerals and food to different parts of a plant. The stem keeps the plant straight and bear leaves, flowers and fruits.

Leaves

Leaves are called the food factories of plants. They prepare the food for the plant in the presence of sunlight, air, water and chlorophyll. This process is called **photosynthesis**.

- We eat leaves of many plants such as the spinach, lettuce, cabbage etc. Green leafy vegetables are good for our health.



THE SHOOT SYSTEM

The shoot system includes all those parts of a plant that grow above the ground. Stem, leaves and flowers form the shoot system of a plant. All these parts carry out different functions and help the plants in different ways.





Summary



- A plant has many parts.
- Stem, leaves, buds, flowers and fruits grow above the soil and form the shoot system.
- Roots grow below the soil and form the root system.
- There are two types of roots—taproot and fibrous root.
- Roots play a very important role in the growth of the plant.



EXERCISE



Fact Finder

- Bamboo is one of the fastest-growing plants, capable of growing up to 3 feet in a single day.

A. Tick (✓) the correct option.

a. Which of these has aerial roots?

Beetroot

☐

Pumpkin

☐

Banyan

☐

b. Which of these has a fibrous root?

Bean

☐

Grass

☐

Turnip

☐

c. Which of these has a tap root system?

Pea

☐

Carrot

☐

Both

☐

d. It stores food as a root.

Carrot

☐

Tomato

☐

Leaves

☐

B. Fill in the blanks.

a. The _____ look like long ropes spread out under the soil.

b. _____ are called the food factories of plants.

c. A _____ has a thick centre and grows down straight.

d. Roots bind the soil and prevent _____.

C. Answer the following question in short.

a. What is root system?



b. Who prepares the food for the plants?

c. What is soil erosion?

d. What is photosynthesis?

D. Answer the following question in short.

a. What is shoot system?

b. What is a taproot?

c. What is a fibrous root?

d. What are aerial roots?



Fact Finder

- Bamboo is one of the fastest-growing plants, capable of growing up to 3 feet in a single day.



Activity Time



Keep potted plants in the class. Water them when the soil dries up. Talk about the varying amount of water that different plants need.

Name four plants that need more water.

1. _____

2. _____

3. _____

4. _____



LEARNING OBJECTIVE

- ★ Group of animals
- ★ Friendly animals
- ★ Give and take relationship
- ★ Ears of animals
- ★ Shy animals
- ★ Hair and fur

Animals also have families. They are social in nature and move around in groups. They do so to find food and water, protect themselves from enemies and bring up their young ones. They feel safe when they are together.

GROUPS OF ANIMALS

Animals that move in groups or herds have a leader who guides the other group members. The leader warns the other members about danger. Cows, zebras, horses, elephants, buffaloes and deer live in groups. Their group is called a **herd**.



A herd of buffaloes



A herd of deer



A herd of elephants

A group of chimpanzees, gorillas or monkeys is called a band.



A group of lions is called a pride.



Let Me Answer

Name any three animals from which we obtain food items.



TEACHER'S NOTES

Tell the students about the various types of animals and their features. Also, tell how these animals are important to us. Give them various examples and make learning easy.

A **pride** consists of two or more adult lions, several lionesses and their cubs. Insects such as ants, honey bees and termites live together in groups called **colonies**. The colony of a honey bee has one queen bee, about a hundred **drones** (males) and more than thousand **worker** bees. The dog family that includes wolves, foxes, jackals and coyotes move in **packs**.

Colony of ants



Pack of wolves



infobits

A band of chimpanzees has around 15 to 80 members.



FRIENDLY ANIMALS

Some animals are friendly and allow us to go near them or feed them. If we give them food, they will immediately come forward to eat. Cats, cows and dogs are generally friendly by nature. Humans have tamed many friendly animals. Most of the farm animals like goats, hens and ducks are friendly with us.



A group of birds



Tamed dog



Tamed cow



Farm animals



Dolphins are friendly sea creatures. They live in groups. They learn to play tricks easily and entertain people. Shows of dolphin performing tricks are very famous.



★ Talk about any animal which you have made friends with.



A dolphin



Playful kittens

SHY ANIMALS

Some animals are very shy by nature. They hide or run away when they see people coming near them. These animals are not familiar with human beings and may sometimes harm them too. Rabbits, lizards, squirrels, rats, deer, most of the birds and insects are shy.

- Babies of animals enjoy playing. Kittens love to have a friendly fight.
- Sometimes they roll over or pull each other.



Kids IQ

- Lion is associated with pride then how chimpanzees associated?

- Tortoise and snails go into their shells if we touch them.

GIVE-AND-TAKE RELATIONSHIP

Some species of animals share special relationship with animals of other species. They help each other.

- ★ **Birds** and **monkeys** make noise to alert other animals, if lions, tigers and leopards are coming near.
- ★ **Penguins** huddle together to keep themselves and their babies warm.



- ★ White birds called **cattle egrets** live near large animals such as cows and buffaloes, elephants and deer. They do so because they eat the insects that surround these animals.
- ★ **Egyptian Plover**, a bird that feeds on bits of decaying meat stuck in the teeth of crocodile. The plover gets its food and crocodile gets its teeth cleaned.

Cattle-egret



A crocodile and Egyptian plover



- ★ **Oxpeckers** are small birds that ride on large animals such as oxen, rhinos and giraffes and peck the insects off their bodies.
- ★ A **remora** is a small fish which sticks to a shark. It eats small creatures that live on the shark's body.



Oxpeckers and giraffe



Remora fish and shark

EARS OF ANIMALS

All animals use their ears to hear sound. They may differ in shapes and sizes. Among the animals that have ears, there are some with ears that are visible, called external ears and some whose ears are not visible.

- Humans, including human beings, have external ears, one on each side of the head.

infobits

Although hippopotamus is a big animal, it has small ears.



- ★ An elephant has big external ears. It uses them to hear and to fan itself.
- ★ Donkeys, rabbits and giraffes also have big ears.
- ★ We cannot see the ears of some animals. These animals have internal ears.
- ★ Birds have tiny holes on both sides of their head. These are covered with feathers.
- ★ Snakes and lizards do not have ears. They feel vibrations on the ground to know about the presence of other animals.

Big ears of elephant



Donkey



Rabbit



Giraffe



Fact Finder

- The blue whale is the largest animal on Earth, even larger than the largest dinosaurs that ever existed.

infobits

It seems that the snake is dancing to the tune of the snake charmer. Actually, it just follows the movement of snake charmer's been!



HAIR AND FUR

Just as we have skin covering our body, in the same way, animals have skin. There are hair on the skin. Some animals have long hair on their skin and some animals have small. Animals like yak, musk oxen and bears that live in very cold areas have long hairs which keep them warm. Animals like cows and buffaloes have short hair. You will observe that the animals which have external ears also have body hair. Such animals are called **mammals**.



Yak



Musk oxen



Bear



Cows and Buffaloes



Yak

Animals like porcupine and hedgehog have needle like hair on their body. It helps them to protect themselves from their enemies.

AMAZING ANIMALS!

The different design on an animal's skin are due to the presence of different coloured hair.



Porcupine



Hedgehog



Leopard



Tiger



Summary



- Animals that live in groups or herds have a leader who guides the other group members.
- Some animals are shy and some are friendly.
- Many animals help each other.
- Animals like elephants, donkeys, rabbits and giraffes have external ears. Birds have internal ears.
- Mammals are animals that have external ears and body hair.



EXERCISE



A. Tick (✓) the correct option.

a. A group of deer is called a?

Pride

☐

Herd

Pack

b. Which of these is a shy animal?

Tiger

☐

Cat

Rabbit

c. Which of these sticks to a shark?

Remora

☐

Oxpecker

Egyptian plover

d. An animal that lives in a colony is?

Ant

☐

Dolphin

Cow

B. Fill in the blanks.

- _____ often perch on the backs of large animals.
- The colony of a honey bee has _____ queen.
- An _____ has big external ears.
- Birds have tiny _____ on both sides of their head.

DID YOU KNOW!

★ Honey bees live in colonies. They work together to build honeycombs and collect honey.

C. Answer the following questions in short.

- What do you mean by herd?

- Write the names of those animals that are friendly by nature.

- Write the names of animals that have big ears.

- What are mammals?

D. Answer the following questions.

- Why do animals live in groups?

- What are friendly animals?

- What are shy animals?

- What relationship does a crocodile and an Egyptian plover have?



Revision Test Paper - II

(Based on Chapter 6 to 8)

A. Tick (✓) the correct option.

a. A snake lives in a?

Hole

☐

Cave

☐

Den

☐

b. Which of these has aerial roots?

Beetroot

☐

Pumpkin

☐

Banyan

☐

c. An animal that lives in a colony is?

Ant

☐

Dolphin

☐

Cow

☐

B. Fill in the blanks.

a. Birds have tiny _____ on both sides of their head.

b. Roots bind the soil and prevent _____.

c. Clothes are worn according to the _____ of a place.

d. Animals that live on land are called _____.

C. Answer in Brief.

a. What do you mean by colonies?

b. What is soil erosion?

D. Answer the following questions.

a. What are nocturnal animals?

b. What do men and women in India wear?

c. Why do animals live in groups?



Model Test Paper-I

(Based on Chapter 6 to 8)



A. Tick (✓) the correct option.

a. Which of these is an internal organ?

Skin

☐

Eyes

☐

Lungs

☐

b. Which of these is a dry fruit?

Apple

☐

Almond

☐

Cake

☐

c. Which of these is not a spice?

Bay leaf

☐

Cinnamon

☐

Coffee

☐

d. A snake lives in a?

Hole

☐

Cave

☐

Den

☐

e. A cow is kept in a?

Shed

☐

Sty

☐

Stable

☐

B. Fill in the blanks.

a. Our helps us to think..

b. Animals that live on land are called

c. Monkeys and live on

d. Animals that live both on land and in water are called

e. A spider spins its to trap its prey.

C. Match the columns.

Column A

1. The heart

2. Plants

3. Dry Fruits

4. Cow

5. Squirrels

Column B

i. Almond

ii. Shy animal

iii. Stomata

iv. Pumps blood

v. Shed

D. Write true or false.

- a. Stems and roots of some plants also have stomata.
- b. Oil is extracted from special seeds called oil seeds.
- c. Sea and ocean water is salty.
- d. Rabbits lives in colonies.
- e. Knitting is done on weaving machine.

E. Answer the following questions.

- a. What do you know about internal organs?

- b. Why do we need food?

- c. Why do animals need shelter?

- d. What material do birds use to make a nest?

F. Go to your school library and collect information about the habits of different animals.

G. Identify the state these people belong to by looking at their clothes.



Our Festivals



LEARNING OBJECTIVE

- ★ Religious festivals
- ★ National festivals
- ★ Harvest festivals

India is a country of festivals. We all celebrate a number of festivals. We buy new clothes, or enjoy at fairs and fetes. We eat ice-cream and other special dishes made for the occasion. We can categorise festivals in the following groups:

- 1 Religious festivals
- 2 National festivals
- 3 Harvest festivals

Let Me Answer

Do you know about the National festivals? Give examples.



Fact Finder

- “Halloween” originated from the Celtic festival of Samhain, marking the end of the harvest season and the beginning of winter.



1 RELIGIOUS FESTIVALS

Festivals which are celebrated according to religion are called religious festivals. India is a land of various religions. People of various communities celebrate their festivals. A few important religious festivals are Dussehra, Deepawali, Holi, Eid-Ul-Fitr, Christmas and Gurupurab.

Deepawali and Dussehra

Dussehra or Vijayadashmi is celebrated on the dashami tithi of Ashwini Shukla Paksha. On this day lord Rama returned to Ayodhya after killing Rawan. On this day, effigies of Rawan are burnt. This festival reminds us of victory of truth over evil.



TEACHER'S NOTES

Tell the students about the various types of festivals celebrated in our society. Tell them about the importance of these festivals.



Deepawali is the festival of lights. It is the biggest festival of Hindus. Children celebrate this festival by playing with fireworks and crackers. People worship Lakshmi, the goddess of wealth and lord Ganesha. This day comes twenty days after Dussehra. Houses are decorated with earthen lamps, candles and electric bulbs.



Eid-Ul-Fitr

Ramzan is the very important month for the Muslims. They keep fast during this month. Eid-Ul-Fitr comes after the month of Ramzan. They wear new clothes, after Namaaz and say Eid Mubarak by embracing one another. They also prepare a sweet dish called Sewaian.

Christmas

Christmas is the biggest festival of Christians. Christmas is the birthday of Jesus Christ. It is celebrated on 25th December. Christians make and decorate Christmas tree.



Gurpurab

Gurpurab is celebrated on the birthday of Guru Nanak Dev. The Sikhs decorate Gurudwaras and listen to Gurubani.



Durga Puja



Durga is the goddess of Shakti, that is power. This festival is mainly celebrated in West Bengal during Navratra. They make beautiful earthen statues of the Goddess Durga and worship them. Hindus keep fast during Navratra.

National Festivals

National festivals are celebrated all over the country. National festivals are Independence Day, Republic Day and Gandhi Jayanti.



Kids IQ

Name the festival that is celebrated during the rainy season.

Independence Day

India became free on 15th August, 1947. Before this, Indians were ruled by the Britishers. From this date India became independent. Every year on this day the Prime Minister hoists the Tricolour flag on the Red Fort in Delhi.



Republic Day

India became a Republic on 26th January, 1950. The word Republic means country governed by its own laws.



On this day, various Jhankie (tableaux) are displayed, cultural programmes and parade are held at India gate. Main function is held at Kartavya Path in New Delhi. The President takes the salute of the parade.



Gandhi Jayanti

Mahatma Gandhi, the Father of our nation, was born on 2nd October, 1869. So, on 2nd October Gandhi Jayanti is celebrated every year. The main function is held at Rajghat, the Samadhi of Bapu.



Harvest Festival

Festivals which are celebrated at the time of harvesting of crops are known as harvest festivals. Few harvest festivals which are important are as follows :

Holi

Holi is mainly celebrated in North India. This is also one of the big festivals of India. People gather at a place, they sing and dance and beat the drums. People throw coloured water at each other and rub Gulal.



Pongal

Pongal is celebrated in the month of January, at the time of rice harvesting in Tamil Nadu. On this festival, cows are decorated and worshipped. This festival is celebrated for three days.



Onam

In the month of August or September, this harvest festival is celebrated in Kerala. A special game of snake boat racing is held. Elephants are decorated on this day.



Baisakhi

This festival is celebrated in Punjab. It is celebrated in the month of April. Men perform Bhangra and girls perform Gidda.





Summary



- People of various communities celebrate their festivals.
- India is a country of festivals.
- National festivals are celebrated all over the country.
- Harvest festivals are celebrated at the time of harvesting of crops.



EXERCISE



A. Tick (✓) the correct option.

- a. _____ is celebrated in Punjab.
Baisakhi ☐ Onam ☐ Pongal ☐
- b. _____ is the festival of Christians.
Gurpurab ☐ Christmas ☐ Holi ☐
- c. _____ is celebrated on the birthday of Guru Nanak.
Gurpurab ☐ Holi ☐ Dussehra ☐
- d. Independence Day is celebrated on?
15th August ☐ 26th January ☐ None of these ☐

B. Fill in the blanks.

- a. Deepawali is a _____ festival.
- b. Republic Day is a _____ festival.
- c. Durga Puja is celebrated in _____.
- d. Onam is celebrated in _____.



C. Write true or false.

- a. Ramzan is very important month for the Muslims. _____
- b. Guru Granth Sahib is the holy book of the Sikhs. _____

c. Onam is celebrated in Tamil Nadu.

d. Baisakhi is celebrated in April.

E. Answer the following questions.

a. Which national festival is celebrated on 26th January?

b. Which festival is known as festival of colours?

c. Which festival is known as festival of lights?

d. On which date Christmas is celebrated?



A. Paste the pictures of different festivals in your scrap file.

B. Make a list of religious festivals here.



Transport System



LEARNING OBJECTIVE

- ★ Different means of transport

Transport or transportation is the movement of people, animals and goods from one location to another. Transport has played an important role in all most everyone's lives. Travelling and carrying goods from one place to another is called transportation. There are various means of transport. If we want to go to a nearby place, then we use cycle, rickshaw, motorcycle, scooter etc. Suppose we want to go to a far away place, we use car, bus, train etc. Suppose we want to go far away to another country, in a short period of time, we use aeroplane.



DIFFERENT MEANS OF TRANSPORT

Different means of transport are broadly classified into three main groups:

1. Land Transport

2. Water Transport

3. Air Transport

Land transport refers to vehicles that are move on land. Land transport can be further divided into three groups:

(a) Transport on Kutchra Roads : Animals like ox and the carts driven by the camel, bullock, buffalo, mule, ass etc., and cycles are the means of transport on kutchra roads. Bicycle and bullock carts are the common types of vehicles in the villages.



(b) Transport on Pucca Roads : The cycle, cyclickshaw, scooter, auto-rickshaw, car, jeep, bus and truck are the means of transport on pucca or metalled roads. These means are very common in towns and cities. India has the largest network of roadways.

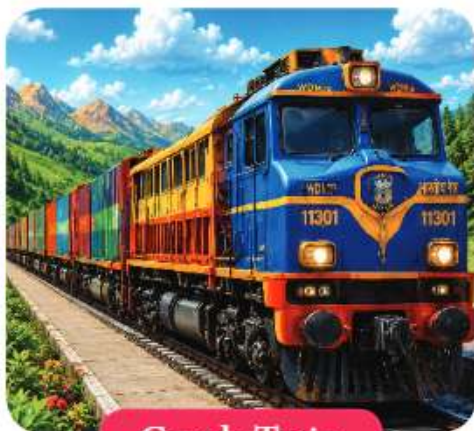


TEACHER'S NOTES

Tell the students about the various types of transport systems. Use the pictures and examples and explain to them the benefits of the transport system.



Train



Goods Train



Metro Train

(c) Transport on Rail-tracks : Trains run on rail-tracks. There are separate trains for carrying passengers and goods. The trains for carrying various types of goods are called goods trains. Metro trains are popular means of transport in Metropolitan cities.



Water transport



Let Me Answer

Give any two examples of means of air transport.

A boat or a ship carries men and goods across a river, lake, sea or ocean. Boats are rowed with oars or moved by sails. They carry people across a lake or a river. A ship is a very large water transport that carries people or goods by the sea. A cruise is a ship with all facilities like hotel, swimming pool, club, etc. Ships are used to transport huge quantities of grains and oil to other countries. A liner is a very large ship that can carry thousands of passengers at a time.



A yacht carries a few people for pleasure trips.



A sailboat is used for pleasure trip or racing.



A ferry carries people, vehicles and goods as a regular service.

Air Transport

Vehicles that fly in air are called air transport. It is the fastest means of transport.

Aeroplanes and helicopters are the fastest means of air transport. A helicopter can carry only 4 to 6 people at one time. An aeroplane can carry four to five hundred people at a time. These means of transport are used when we have to go to far away places in less time or to another country. It is an expensive means of transport. Rocket or spacecraft is used to go into the space.



Fact Finder



- The world's first commercial steam-powered locomotive was built in 1804 by Richard Trevithick.

infobits



1. In India, there are six international airports.

Aeroplane



Helicopter



Rocket



Summary



- Travelling and carrying goods from one place to another is called transportation.
- Boats are rowed with oars or moved by sails.
- A liner is a very large ship that can carry thousands of passengers at a time..



EXERCISE



A. Tick (✓) the correct option.

- a. A is a very large water transport _____ that carries people or goods by the sea.

Boat

☐

Ship

☐

Yacht

☐

b. _____ is used to go into space.

Rocket

☐

Aeroplane

☐

Helicopter

☐

c. India has the largest network of _____
airways

☐

roadways

☐

railways

☐

B. Fill in the blanks.

a. Metro trains are used in _____.

b. _____ is the fastest mode of transport.

c. A _____ carries a few people for pleasure trips.

d. Bullock cart is a common means of transport in the _____.



C. Write true or false.

a. It is difficult to run railway lines on hills or mountains. _____

b. Metro trains run in small towns also. _____

c. Air transport is a cheap means of transport. _____

d. There are three means of transport. _____

D. Match the columns.

a. Train

(i) Air transport

b. Aeroplane

(ii) Water transport

c. Ship

(iii) Go into space

d. Rockets

(iv) Moves on railway track

E. Answer the following questions.

a. Which are the main means of water transport ?

b. In how many groups can transport be categorised ?

c. Distinguish between water transport and land transport .

d. What are the means of air transport?



Activity Time



a. Collect pictures of water, rail and air transport and paste them in your work book.



Safety Rules



LEARNING OBJECTIVE

- ★ Safety on the road
- ★ Safety while travelling in a vehicle
- ★ Safety while swimming
- ★ First-Aid

Stop, look and listen

Before you cross the street.
First use your **eyes** and **ears**,
Then use your **feet!!!**



Let Me Answer

What is the use of zebra crossing on the road?



Safety habits keep us safe from accidents.

To be careful, we need to follow some safety rules:



1



Never touch electric wires with wet hands.

2



Do not play with match-sticks.

3



Do not leave your toys and other things on the floor.

4



Do not go close to the gas stove.

5



Do not take any medicine without asking your elders.

6



Do not play with sharp objects like knife, blade and scissors.



TEACHER'S NOTES

Guide the students to be sensitive towards plants. Motivate them to water the plants daily. Elucidate that plants are important for our survival.



SAFETY ON THE ROAD

Always walk on the footpath.

Never play on the road.

- ✿ Cross the road at zebra-crossing.
- ✿ Follow the traffic signals on the road. Look for the red signal before crossing. If there is no zebra-crossing on signal, look carefully on both sides before crossing.



infobits

1. Traffic lights and traffic police ensure smooth traffic on the roads.



Fact Finder

- “Wearing seat belts reduces the risk of death in a car crash by about 45% and cuts the risk of serious injury by about 50%.”

SAFETY WHILE TRAVELLING IN A VEHICLE



Do not get in or off a moving bus.



Do not take any part of your body out of the window.



Do not talk to the driver. He might get disturbed.



Make a queue to wait for the bus.

SAFETY WHILE SWIMMING

Do not go alone for swimming.

Use a swimming tube, if you are a learner.



FIRST-AID

The immediate treatment given to an injured person before a doctor's arrival is called first-aid.



Kids IQ

What are the things that we should keep in the first aid box? Give their names and uses.



Summary



- Safety habits keep us safe from accidents.
- To be careful, we need to follow some safety rules.
- The immediate treatment given to an injured person before a doctor's arrival is called first-aid



EXERCISE



A. Tick (✓) the correct option.



a. We should not touch electrical fittings with?

Wet hands

☐

Dry hands

☐

Both

☐

b. We should cross the road at?

Cow crossing

☐

Zebra crossing

☐

Horse crossing

☐

c. What is the immediate treatment given to a person called?

First-aid

☐

Second-aid

☐

Third-aid

☐

B. Fill in the blanks.

- a. Safety habits keep us safe from _____ .
- b. We should cross the road at _____ .
- c. We should follow the _____ on the road.
- d. We should make a _____ to wait for the bus.

C. Answer the following questions in short.

- a. What are safety rules?



- b. Which safety rules should be followed at home?

- c. Which safety rules should be followed on the road?



a. Make a first-aid box. Keep these things in it.

Scissors

Dettol

Band-aid

Cotton

Bandage

Antiseptic cream



Means of Communication



LEARNING OBJECTIVE

- ★ Personal or Postal Communication
- ★ Electronic communication
- ★ Journey of a letter
- ★ Mass Communication



The sending and receiving of message and information is called communication. Most people communicate orally (by talking), by listening and writing. In olden days, people used to broadcast any message or information by beating drums and sending smoke signals. Later, pigeons were used to send and receive

messages. Messengers were sent on foot or on horses to deliver messages which took a long time. Soon faster means of communication developed. Let us read about some common means of communication.



PERSONAL OR POSTAL COMMUNICATION



An inland letter

When one person communicates with another person, it is called personal communication. The postal system is one of the oldest, cheapest and most widely used system of communication. Postcards, inland letters and letters in stamped envelopes are means of postal communication. All these are available at the post-office. We need to write the address and Postal Index Number (PIN) of the person to whom we are going to send letter on the cover. By correct address the letter reaches its destination. To send a letter to someone who lives outside India, we use an aerogramme or an airmail. Urgent letters could be sent through speed post or courier.



Letter box



An Aerogramme



TEACHER'S NOTES

Tell the students about the various means and the importance of communication. Also, tell them about the old methods of communication that people use in past.

Parcels and money orders can also be sent by post.

JOURNEY OF A LETTER

Letters take two or more days to reach their destination depending upon the distance they have to be sent. Steps to send a letter are as follows :

- We write the letter on plain paper and put it in a stamped envelope.
- Then, we write the address of the person to whom we want to send the letter.
- Now drop the letter in a letter box.
- The postman collects letters from the letter-box.
- He takes the letters to the post-office where they are sorted according to the states and cities.
- Letters are put in various bags and sent to specific states and places by trains and aeroplanes.
- Letters are again sorted in the city post office according to the areas. They are sent to the various area post offices in the city by a mail van.
- The postman delivers the letters to the address mentioned.



Kids IQ

Which type of connection do you need in your device to send an e-mail?



Let Me Answer

What is the difference between a telephone and a mobile phone?



ELECTRONIC COMMUNICATION



A is the quickest and most convenient telephone means of communication. Today telephone has become an important part of every home, office and school.





Telephone

We can speak to the person just by dialling the number sitting at any place. Telephone networks are spread all over the world. Now-a-days, mobile phones have become very popular. We can carry them wherever we go. An e-mail is the fastest way of sending written e-mail messages and photographs. A computer is used to send an e-mail.



Mobile Phone

Computers all over the world are linked through the Internet. The e-mail stands for electronic mail. The messages by e-mail can be received within a few seconds.



E-mail



Internet

infobits

1. You can communicate to a person who is sitting in foreign face-to-face by video-chatting or video-conferencing.



MASS COMMUNICATION

When we communicate or broadcast a message to a large number of people at a time, then it is called mass communication. For example, Newspaper, Radio, Television, Magazine and Internet are the means of mass communication.



Fact Finder

- The first successful transatlantic telegraph cable was completed in 1866, revolutionising long-distance communication.



Radio is an audio means of mass communication.



Television is an audio visual means of mass communication.



We can get information about anything in the world on the **Internet**.



Newspapers and magazines are a written way of mass communication.

Summary

- The sending and receiving of message and information is called communication.
- When one person communicates with another person it is called personal communication .
- To send a letter to someone who lives outside India, we use an aerogramme.
- A telephone is the quickest and most convenient means of communication.
- An e-mail is the fastest way of sending written messages and photographs.



EXERCISE



A. Tick (✓) the correct option.

a. In olden days, which bird was used to send and receive message?

Sparrow

☐

Parrot

☐

Pigeon

☐

b. Which of these is an audio-visual means of mass-communication?

Radio

☐

Television

☐

Newspaper

☐

c. Which is the fastest way to send written messages ?

Letter

☐

Courier

☐

E-mail

☐

d. Which means of communication are being used mostly ?

Telephone

☐

Mobile phone

☐

Internet

☐

B. Fill in the blanks.

a. _____ is the act of sending or receiving messages.

b. The _____ system is the oldest and cheapest system of communication.

c. _____ is the fastest way to send written messages.

d. _____ is the most convenient means of communication.

C. Write true or false.

- a. In olden days, pigeons were used to send messages. _____
- b. Sending messages by post takes more than one month time. _____
- c. To send a letter no need to write PIN code with address. _____
- d. E-mail stands for electronic mail. _____

D. Answer the following questions in short.

- a. What do you understand by the word communication?

- b. Write the steps involved in the journey of a letter.

- c. What is internet used for?

- d. What is mass communication?



- a. Here is a postcard. Write your complete address on it.





Model Test Paper-III

(Based on Chapter 9 to 12)



A. Tick (✓) the correct option.

- a. _____ is celebrated in Punjab.
Baisakhi ☐ Onam ☐ Pongal ☐
- b. _____ is used to go into the space.
Rocket ☐ Aeroplane ☐ Helicopter ☐
- c. We should not touch electrical fittings with?
Wet hands ☐ Dry hands ☐ Both ☐

B. Fill in the blanks.

- a. We should cross the road at _____.
- b. _____ is the fastest mode of transport.
- c. Metro trains are used in _____.
- d. _____ is the most convenient means of communication.



C. Write true or false.

- a. E-mail stands for electronic mail. _____
- b. Air transport is a cheap means of transport. _____

E. Answer the following questions.

- a. What is mass communication?

- b. What are safety rules?

- c. Which are the main means of water transport?

- d. Which festival is known as festival of lights?



Natural Resources



LEARNING OBJECTIVE

- ★ Types of natural resources
- ★ Types of soil
- ★ Rocks
- ★ Minerals

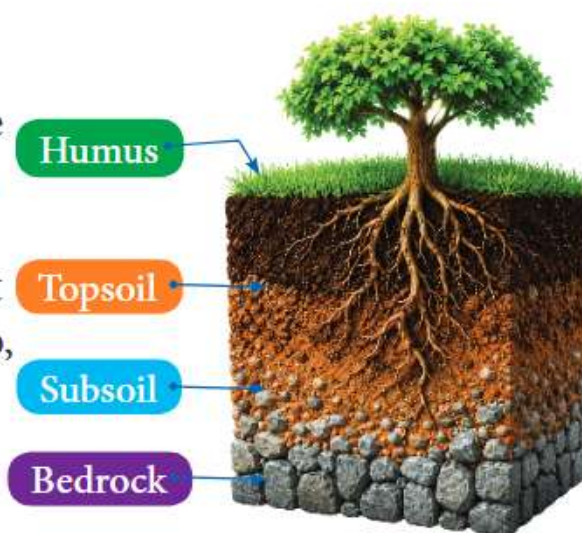
Types of Natural Resources

Water, air, soil, forest, wildlife and minerals are natural resources. Natural resources are valuable gifts of nature for us. They support life on Earth. Plants grow in soil with the help of air, water, sunlight and minerals. Without plants, life is not possible because we get our food from plants. So, all these natural resources are valuable for us.

Soil

Soil is the loose top layer of Earth on which the plants grow. Soil is formed when rocks break up, plants and animals start decaying. This process takes millions of years by the action of water, wind and sunlight on the surface of the Earth. Soil contains tiny particles of gravel, sand, clay, moisture and humus. Humus is made up of rotten leaves and decayed bodies of animals and plants. Humus is necessary for growth of plants. Soil is found in layers. Nothing on Earth can be grown without soil.

All our agricultural crops like wheat, rice, cotton, sugarcane, coffee, tea are grown in different types of soils. There are number of micro-organisms like fungi and bacteria live in soil. Ants, beetles, millipedes, scorpions, earthworms, etc. live in soil. Trees and other plants also grow in soil.



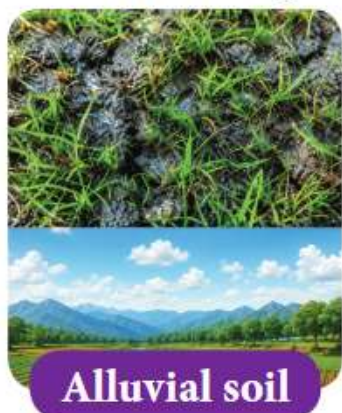
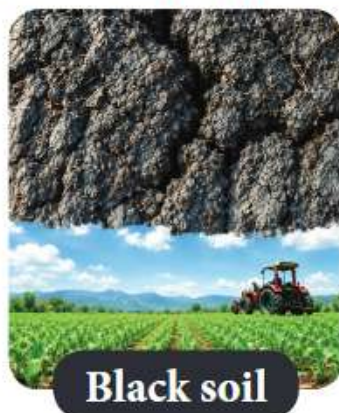
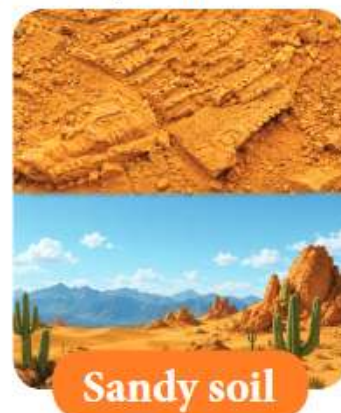
TEACHER'S NOTES

Tell the students about natural resources like soil, rocks, and minerals. Tell them about the uses of these things in our daily life.

Types of Soil

Types of soil depend upon a combination of three particles : sand, silt and clay. Sand is the largest particle in the soil. It does not hold much water and nutrients. Silt is very smooth and powdery. Clay is the smallest particle. Clay is smooth when dry and sticky when wet. Clay can hold a lot of nutrients but it does not let air and water pass through it.

There are mainly four types of soils – **alluvial soil**, **black soil**, **red soil** and **sandy soil**. Soil contains sand, silt and clay in different proportions. Some kind of soils have high sand content while some other kind has more clay content.



Rocks

The Earth's crust is made up of rocks. Coal comes from certain rocks. Rocks contain metals such as gold and silver. Granite is a hard rock used to build roads and buildings. Clay is a soft rock which is used for making bricks and pottery. Glass is also made from rocks. Sand and limestone are melted together to make glass when the glass is hot, it is very soft and can be stretched and shaped into different objects. There are mainly three kinds of rocks– Igneous rocks, Sedimentary rocks and Metamorphic rocks.



Igneous Rocks

Igneous rocks are formed by the cooling and solidification of molten rocks. When a volcano erupts, molten rock called magma is ejected onto the Earth's surface. Crystallization, a process in which the magma cools and solidifies forming mineral crystals are called igneous rocks. Granite, Quartz and Basalt are igneous rocks.



Granite



Quartz



Basalt

Sedimentary Rocks

Sedimentary rocks are formed by compaction of sediments. Layers of mud, sand or sea shells are built up over a long time. The



Sandstone



Gypsum



Limestone

layers get squeezed and stick together and make new rocks. Sandstone, Gypsum and Limestone are examples of sedimentary rocks.

Metamorphic Rocks

Rocks that are changed into a different one by great heat or pressure. When rocks are under heat and pressure for a few million years, they turn into a new kind of rock. Marble forms in this way when soft rocks like limestone get squeezed and heated for a long time.



Minerals



Minerals are substances that are found naturally under the earth. They occur along with rocks. Rocks contain different types of minerals. Minerals are found in oceans. Digging out minerals from the Earth is called Mining. Minerals which contain metals are called Ores. Iron, copper, zinc, manganese, silver, gold are metals. Metals are used for making machine parts, utensils, pillars etc. Precious metals like gold, silver are used to make jewellery.



Ores contain several impurities. They are mixed, refined and only then metal is extracted. This process of mining and refining ores is called Metallurgy.



Let Me Answer

How do we obtain gold and silver?



Deep Mining

Fossil Fuels

Millions of years ago, plants and animals died and were buried deep under the soil. Fossils are the hardened remains of plants and animals. Fossils of animals and plants from both land and sea have been found. Dead remains of plants and animals remained lying on the ground, covered with sand, mud or water. Over a long time, minerals seeped into the hard parts and slowly turned them into fossils. Coal, Petroleum and Natural gas are called fossil fuels.



Coal

Coal is actually the fossilised remains of plants. Coal is used as a fuel for heating, generating electricity and running steam engines. Coal gas and coke are produced from coal. Mines of coal in India are in Bihar, Orissa and Madhya Pradesh.

Petroleum

Petroleum is a dark oily liquid found in Earth. Petroleum is called mineral oil. This is formed from the remains of both land and sea creatures. It is also called rock oil as it is trapped between the rocks, deep inside the Earth. Wells are drilled deep into the ground until they hit these rocks. The oil is then pumped to the surface through pipes and taken to refineries to separate various constituents of it.

Petrol, diesel, kerosene, LPG, wax, lubricant oil, etc. are derived from petroleum. Petrol



and diesel are used as fuel in vehicles. Kerosene and LPG are used as fuel for cooking. LPG is also used as fuel in vehicles. In India, there are petroleum refineries in Mumbai , Chennai , Cochin , Vishakhapatnam, Goa and Tuticorin.

Natural Gas

Natural gas is mostly made up of a gas called methane and is lighter than air. It is highly flammable. It is usually found near petroleum reserves. It is pumped from the ground and transported through pipelines to the storage areas.



Solar Energy

Sun is the ultimate source of all types of energy. It can be used repeatedly. We can use solar energy in solar cooker to cook food, solar heater to heat water, solar cells to convert sunlight into electricity.



infobits

Fossil fuels are non-renewable resources. Their stocks are limited. So, we should not waste them.



Fact Finder

Fossil fuels like coal, oil and natural gas, are finite natural resources formed from ancient organic matter.



Kids IQ

What are igneous rocks?
Give some examples.



Summary



- Soil is the top layer of Earth on which the plant grow.
- The Earth's crust is made of rocks.
- Digging out minerals from the Earth is called mining.
- Natural gas is mostly made up of a gas called methane. Sun is the ultimate source of all types of energy.





EXERCISE



A. Tick (✓) the correct option.

a. What are the types of soil?

Eight

☐

Seven

☐

Four

☐

b. Which are fossil fuels?

Coal

☐

Petroleum

☐

Both

☐

c. How many types of rocks are there?

Three

☐

Four

☐

Five

☐

d. Which one of the following is a soft rock?

Glass

☐

Marble

☐

Clay

☐

e. Sandstone and limestone are the examples of ____.

metamorphic rocks

☐

sedimentary rocks

☐

igneous rocks

☐

B. Fill in the blanks.

a. Coal, petroleum and natural gas are ____.

b. Soil is formed from the ____.

c. ____ is a igneous rock.

d. Petroleum is called ____.

e. ____ support life on the Earth.



C. Write true or false.

a. Solar cells are used to convert solar energy to electricity.

b. Fossil fuels are non-renewable resources.

c. Natural gas is lighter than air.

d. Gypsum is a sedimentary rock.

e. Granite is a soft rock.



D. Match the columns.

- a. Organic part
- b. Metamorphic rocks
- c. Natural gas
- d. Petroleum
- e. Clay
- f. Sedimentary rock

- i. Marble
- ii. Underwater
- iii. Methane
- iv. Humus
- v. Rock oil
- vi. Smallest particles



E. Answer the following questions.

- a. What are the various uses of solar energy?

- b. What is natural gas?

- c. What are fossil fuels?

- d. What are natural resources?

- e. What is humus?



- a. Write the various methods of extracting the fossil fuels on a chart paper and hang it in your classroom.



- b. Write down the process of soil formation.



Water in Our Life



LEARNING OBJECTIVE

- ★ Water pollution
- ★ Effects of water pollution
- ★ Causes of water pollution
- ★ Purification of water

Water Pollution

Harmful chemical wastes from homes and factories, fertilizers, pesticides, sewage and dead bodies make the water impure and unfit for drinking. This is called water pollution and the substances which cause pollution are called pollutants.



Causes of Water Pollution

- Washing clothes on the river banks.
- Discharge of domestic wastes in water bodies.
- Throwing dead bodies in water.
- Oil spilled by ships and tanks.
- Discharge of industrial wastes in water.



Effects of Water Pollution

When polluted water is used by animals or human beings directly or, indirectly—

- It can cause diseases like typhoid, cholera, jaundice, diarrhoea etc.



TEACHER'S NOTES

Tell the students about the waste water and the methods of its disposal. Also, tell them about various purification methods and rainwater harvesting.



- Aquatic animals become sick and die in polluted water.
- Polluted water makes soil infertile and crops get damaged.
- Water plants get infected and die.
- When infected aquatic animals are eaten by human beings or other animals. They become sick and unhealthy.



We must check water pollution if we want to improve the quality of water bodies. Water pollution should be controlled because there is limited amount of fresh water on our Earth.



Every Drop Counts

Water is precious. 70% of our Earth, although is covered with water, still cannot be used for daily activities as most of it is salty. Fresh water is available in the form of underground water, water in rivers, ponds and lakes that is not enough for everyone. This is the cause of water shortage. Thus, we need to be a little careful to conserve water. Rainwater harvesting is a very good method to conserve rain water and store it for later use. This is done in open rural areas.

Purification of Water

Water that is fit for drinking is called potable water. Water from rivers, lakes, reservoirs and other water bodies is brought through channels to the water - treatment plant. Here this water is made fit for drinking. At the watertreatment plant, water is first filtered to remove the impurities. It is then treated with chemicals to kill the germs present in it. This purified water is then pumped into the huge water tank. From here the water reaches the taps in our houses through a network of pipelines. The height of the tank gives steady pressure to water

Rainwater harvesting



Let Me Answer

Can you tell the causes of water pollution?



passing through the pipes to our taps. Water can be made safe at home by the following methods.



Boiling : Kills the germs in water. Water should be boiled and cooled before drinking.



Using chemicals : Chlorine tablets are added to water to kill germs in it. This process is called chlorination.



Filtration : Solid impurities like dirt and sand can be removed by filtrating water. Now-a-days modern sophisticated filters are used to remove every type of impurity of water.



Kids IQ

Is it safe to drink rainwater without purifying it?
Why or why not?



infobits

Now-a-days RO systems are used to purify the water.



Fact Finder

Improper disposal of chemicals and pollutants can contaminate water sources, posing serious risks to ecosystems and human health.





Summary



- Harmful chemicals, wastes from homes and factories, fertilizers, pesticides, sewage and dead bodies pollute the water.
- Polluted water disturbs the aquatic life killing fish and water plants.
- Polluted water can cause diseases like jaundice, typhoid, dysentery, diarrhoea and cholera.
- Water which is fit for drinking is called potable water.
- We should be a little careful to conserve water.
- We must make sure that the water we drink is clean.



EXERCISE



A. Tick (✓) the correct option.

a. Which of these is a cause of water pollution?

Bathing animals

☐

Immersion of idols

☐

Both

☐

b. This disease is not caused by drinking impure water.

Malaria

☐

By adding chlorine tablets

☐

Both

☐

c. How can we clean water?

By boiling

☐

Four

☐

Five

☐

B. Fill in the blanks.

a. Harmful chemical wastes from _____ and factories pollute the water.



- b. Water plants become _____ and die.
c. Water is _____.
d. _____ kills the germs in water.



C. Answer the following questions in short.

- a. What are the pollutants?

b. Which tablets are added to water to kill germs in it?

c. What is chlorination?

D. Answer the following questions.

- a. How does water get polluted?

b. What are the effects of water pollution?

c. What is rainwater harvesting?

d. What is potable water?

e. How is water made fit for drinking?



- a.  Write the various methods of extracting the fossil fuels on a chart paper and hang it in your classroom.



- b.  Write down the process of soil formation.



D. Write true or false.

- a. Onam is celebrated in Punjab. _____
- b. Boats are rowed with oars or moved by sails. _____
- c. We should move in and out from a moving bus. _____
- d. An e-mail is the fastest way of sending written messages and photographs. _____
- e. The earth is slightly flattened at both the ends. _____

E. Answer the following questions.

- a. Which national festival is celebrated on 26th January ?

- b. Which festival is known as festival of colours ?

- c. What are safety rules?

- d. Which safety rules should be followed at home?

- e. What is mass communication?

F. Write down the process of soil formation.





Force, Work and Energy



LEARNING OBJECTIVE

★ Understand Force

★ Observe Changes

Squashing, bending, twisting and stretching can affect the shape of objects. Will the following things change (C), not change (NC) or bounce back (BB) in response to the following actions?

Materials	Squashing	Bending	Twisting	Stretching
 Bag of sand				
 Sponge				
 Cotton reel				
 Elastic band				

In our everyday lives, we see a number of actions such as, pull, push, twist or turn.

FORCE

A force is a push or a pull to make something move, turn or bend.

An object that is not moving will stay at rest unless a force is applied to it. For example, a tennis ball will not move unless it is pushed, bounced or thrown.

Once a body is moving, it again requires a force to stop it. Also, the heavier an object, the more force is required.



➤ The total amount of matter in anything is known as its mass.



TEACHER'S NOTES

Encourage children to help students observe how force changes objects.

It is easy to move an empty trolley and to stop it. However, when we place heavy packages in the same trolley, it becomes difficult to get it to start moving or to stop it from moving. In other words, a mass increases, greater force is required to get an object to move or to stop an object that is in motion.

FORCE CAN:



- Move an object.
- Stop a moving object.
- Change the direction of a moving object.
- Change the speed of a moving object.
- Change the shape of an object.



Types of Forces

There are many kinds of forces which perform different types of work. Some of them are: muscular force, gravitational force, frictional force, and magnetic force.



**Muscular
Force**



**Gravitational
Force**



**Magnetic
Force**

EXPLORE

Objective:

To observe movements that cause friction.

Method:

To moving a pile of books along a carpet, a wooden table and a stone worktop. On which surface do the books move most easily?



Observation

1. Carpet _____
2. Wood _____
3. Stone _____

DID YOU KNOW!

★ Friction helps us walk safely and grip objects without slipping.



infobits

Friction is a force that works between two surfaces in contact.

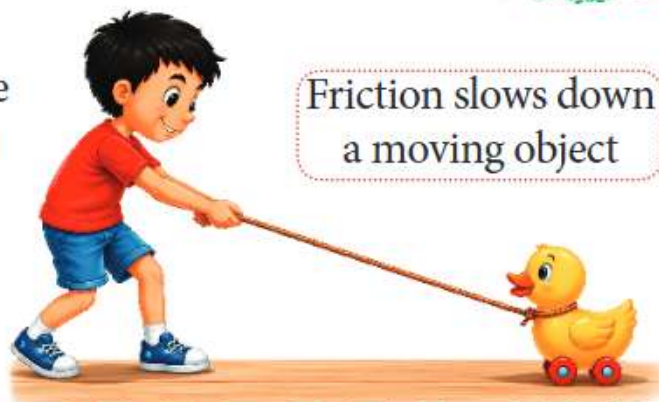


Let Me Answer

Write one example from your daily life.

If there is no friction between the ground and the soles of our shoes, we would not be able to walk—we would keep slipping and falling.

Friction always works in the direction opposite to the direction of motion. As a result, it slows down a moving object.



Friction slows down a moving object

EXPLORE

Rub your palms together and observe the changes. What do you feel?

Friction generates heat. It also causes wear and tear. When we strike a matchstick on the rough surface, the rubbing of the matchstick on the rough surface creates enough heat to set fire to the chemicals at the end of the matchstick.



As a spacecraft re-enters the Earth's atmosphere, there is a lot of friction between the air and the surface of the spacecraft. This produces a great deal of heat.

To overcome this intense heat, special tiles are fitted around the spacecraft to protect the astronauts.

In motor cars, oil is used to lessen the friction between the different moving metal parts. The oil forms a thin film between the metal surfaces, so that they do not rub against each other. This prevents the engine from overheating, and reduces the wear and tear of the parts.



GRAVITY

When we hold a pencil and then drop it, it falls to the ground. For the pencil to fall downwards, there has to be a force pulling it towards the ground. We can feel this force when we hold an object in our hand. This is known as weight.



Kids IQ

- What force keeps us from floating away from Earth?

DID YOU KNOW!

- ★ Ice skaters reduce friction by using smooth ice and sharp skate blades.

Sir Isaac Newton, an English scientist, was the first person to discover why things have weight and fall to the ground. It is said that after seeing an apple fall from a tree, he began thinking about why this should happen. His explanation was that the Earth and the apple attract each other. The Earth, being so large, is not affected by the pull of the apple. However, the apple, being smaller, is pulled towards the Earth.

The force attracting these things through space is known as gravity. Gravity is an attractive force that acts between all objects. It is this force that holds everything to the Earth's surface and causes them to have weight. If there had been no gravity, all of us would have been floating in space.



The further we move away from the Earth, the pull of gravity reduces.
The more mass something has, the more it is pulled towards the Earth by gravity and, therefore, the greater is its **weight**.

FACTASTIC!

Since the force of gravity on the moon is one-sixth of the force of gravity on the Earth, your weight on the moon will be one-sixth of your weight on the Earth. However, your mass will be the same on the Earth and on the moon.



Fact Finder

- Objects fall to Earth because gravity pulls them with constant force.

LEARN MORE

Find the force of gravity on Mars as compared to that on the Earth. Mars has about 38% of Earth's gravity, so your weight on Mars will be about 38% of your weight on Earth.

WORK AND SIMPLE MACHINES

List the names of a few machines you use in your day to day life.

Work is said to be done whenever a force moves something. A machine is a device that makes work easier for us. Machines can be simple or complex. Complex machines usually contain combinations of simple machines.



The five simple machines are:



Inclined Plane



Pulley



Lever



Screw



Wheel and Axle

An **inclined plane** is a flat, supporting surface tilted at an angle, with one end higher than the other. It is used to aid in raising or lowering a load.



A **pulley** is a machine consisting of a wheel, which is designed to have a rope passing around it. A pulley enables us to lift heavy weights by pulling the rope downwards. It is much easier to lift something heavy, such as a car engine, by pulling it downwards because the force of gravity also acts downwards and helps add the body weight to the pulling force.



Fact Finder

- Simple machines make work easier by changing the direction or size of the force needed to do work.

A **lever** is a simple machine consisting of a beam or rigid rod balanced at a fixed point, or fulcrum. A claw hammer, used to pull out nails, is an example of a lever.



A **screw** is an inclined plane wrapped around a pole. Some simple examples include wood and metal screws and the screws on jars and bottles and their tops.

The **wheel and axle** make it possible to move heavy loads easily. This is because friction is less between a wheel and the ground.



Use of wheel and axle



Energy means the capacity to do work. For example, to use our arms to lift things, we need to have energy in the muscles.



Our muscles need energy to do work.

There are many **forms of energy** such as light energy, electrical energy and sound energy. However, all forms of energy can either kinetic or potential.



Light Energy



Electrical Energy



Sound Energy

Kinetic energy is the energy due to moving objects.

Potential energy is the energy stored in a stationary object due to its position.

Kinetic and Potential Energy

For example, water stored at a height has potential energy. When it falls, the energy becomes kinetic energy.



Potential Energy

Water stored at a height has potential energy.



Kinetic Energy

The falling water has kinetic energy.

DID YOU KNOW!

★ A simple machine changes the size or direction of a force to make work easier.

SOLAR ENERGY

The energy that we receive from the Sun is known as **solar energy**. The Sun's energy reaches us in the form of heat and light.



CHEMICAL ENERGY

Chemical energy is stored in the particles of substances like food and fuels.

The chemical energy in the food we eat, allows us to move. When fuels, such as petrol and gas, are burned, they provide energy in the form of heat.



SOUND ENERGY

Sound is another form of energy that is transferred from a vibrating object and carried through the air to our ears. We can make sounds by making things vibrate. Vibration means moving up and down or backwards and forwards very fast.



There are different kinds of sounds. They can be high or low. High sounds are made by fast vibrations and low sounds are made by slow vibrations.

WIND ENERGY

The air that moves is known as wind. Wind can take the form of a gentle breeze or a destructive gale. We can use wind to transport us from place to place, for example, by using hang gliders or yachts. We also use wind energy to turn windmills to pump water and to generate electricity.



ELECTRICAL ENERGY

Electrical energy can come from batteries and power plants. Power plants burn fuel to make electricity for homes and factories.



- Fans, computers, machines, refrigerators and other machines use **electrical energy**.

HYDRO ENERGY

Moving water has a lot of energy to **hydro energy**.

This energy is harvested by building dams on rivers. Dams allow the water to fall from a great height and with great force onto turbines, creating energy. This energy from the water is used to generate electricity.

- Energy can never be created or destroyed. It can only be transferred from one thing to another or transformed from one form to another.

LEARN MORE

Discuss the advantages of using hydro energy over conventional forms of energy.



Summary



- Force is a push or pull that moves stops or changes objects and their shape.
- Friction acts between surfaces opposing motion producing heat and helping us walk safely every day.
- Gravity pulls objects toward Earth giving them weight and keeping everything grounded securely always naturally.
- Simple machines like levers pulleys screws wheels and inclined planes make work easier efficiently daily.
- Energy is the capacity to do work and exists in many useful forms everywhere naturally.
- Electrical solar wind hydro chemical sound kinetic and potential energies power everyday life efficiently together.





EXERCISE



A. Tick (✓) the correct option.

- a. The energy present in moving objects is called _____ energy.
potential ☐ solar ☐ kinetic ☐
- b. A _____ is an inclined plane wrapped around a pole.
lever ☐ screw ☐ fulcrum ☐
- c. _____ energy is stored in food?
physical ☐ solar ☐ chemical ☐
- d. A _____ is an example of a simple machine.
pulley ☐ gravity ☐ friction ☐
- e. When we rub our hands together, _____ is produced.
wind heat gravity
- f. A see-saw is a kind of _____.
lever fork wheel
- g. A _____ helps us lift things _____.
screw pulley wheel
- h. We can make _____ by making things vibrate.
light sound colour

B. Write T for true and F for false.

- a. A force is needed to make a stationary object move. _____
- b. A stone falls to the ground more quickly than a feather. _____
- c. Pushing and pulling are known as forces. _____
- d. As we go further away from the Earth, gravity gets stronger. _____
- e. The force of gravity on the moon is weaker than the force of gravity on the Earth. _____

C. Answer the following questions.

a. What is friction?

b. What is a pulley and what can it be used for?

c. What is meant by energy? What are the different forms of energy?

d. What kind of vibration causes low sounds?

e. Imagine that you live on a planet that has no gravity. Explain how life would be on such a planet.

f. Where is the friction created when a cycle stops suddenly?

g. We need to save sources of energy like coal and petrol. Discuss.



Talking Care of Our Earth



LEARNING OBJECTIVE

- ★ Understand pollution
- ★ Types of pollution
- ★ Causes of air pollution

- While coming back from school, observe the quality of air in different places. What makes the air dirty? Discuss in class.

The Earth is a wonderful place which we share with the plants, animals and birds. We must preserve the land we live on.

A pollutant is any substance which makes the air, water or land dirty.

Pollution is the introduction of harmful substances or products into the environment. As these harmful substances, gases, chemicals and garbage are added to the environment, they affect the quality of all living beings. Pollution is very dangerous for our health and environment. It can cause sickness and death in living beings, unnatural weather conditions and damage to crops. There are different kinds of pollution, the most common being air, water, soil and noise pollution.

AIR POLLUTION

All living beings depend on clean air to survive. Air pollution is the addition of harmful substances to the atmosphere. It can cause danger to human health and to other living matter who breathe this polluted air.

The burning of fossil fuels (coal and oil) to generate heat and power for human consumption is the main source of air pollution.



TEACHER'S NOTES

Discuss real-life examples of pollution and encourage students to share ideas on keeping air, water and land clean.

Transportation and burning of industrial waste and other solid waste also causes air pollution. Air has no colour or smell, except when it is polluted. Bits of dust, metal, soot, gases and other materials are released from construction sites, factories and cars. These small particles reduce the quality of the air that we breathe, causing respiratory diseases such as lung cancer, asthma and bronchitis.



infobits

Clean air keeps lungs healthy and strong.



Kids IQ

- Do you drink water directly from the tap? Discuss.?

WATER POLLUTION

Plants and animals need fresh water to survive. The addition of harmful substances, such as oil and other wastes, to water bodies, such as lakes, rivers, oceans and groundwater, contaminate or pollute the water, making it toxic. This causes diseases such as cholera, jaundice and diarrhoea. Stagnant water also becomes a breeding ground for mosquitoes. Mosquitoes spread diseases such as malaria, filaria and dengue.



Examples of water pollution:

The water that we use for household chores, such as washing, bathing and cleaning, usually goes to sewage treatment plants to be purified. This water is treated to remove dirt, food waste and a number of other pollutants from it before it reaches the rivers or other water bodies.



- Water is life, save it.
- Polluted water harms all.

- ★ However, most detergents and other chemical cleaning agents remain in the water and pass through the treatment plant untreated.
- ★ Dirt and litter from the streets are washed into storm drains. This uncleaned and untreated water reaches the rivers, lakes and sea.
- ★ The oil that spills from tankers and ships causes destruction to wildlife, as it pollutes the water and makes it poisonous for them.



LEARN MORE

Use the Internet to find out about hazardous wastes.



SOIL POLLUTION

We use soil for a variety of purposes. However, when humans over-use or exploit soil, it gets polluted. The main reasons for soil pollution are:

- Overuse of fertilisers, pesticides and insecticides by farmers for growing crops, which poisons the soil after a few years.
- Dumping industrial and household wastes in the soil.
- Construction activities which also cause soil pollution.



Let Me Answer

Name one activity that causes water pollution. How does it harm living things?

NOISE POLLUTION

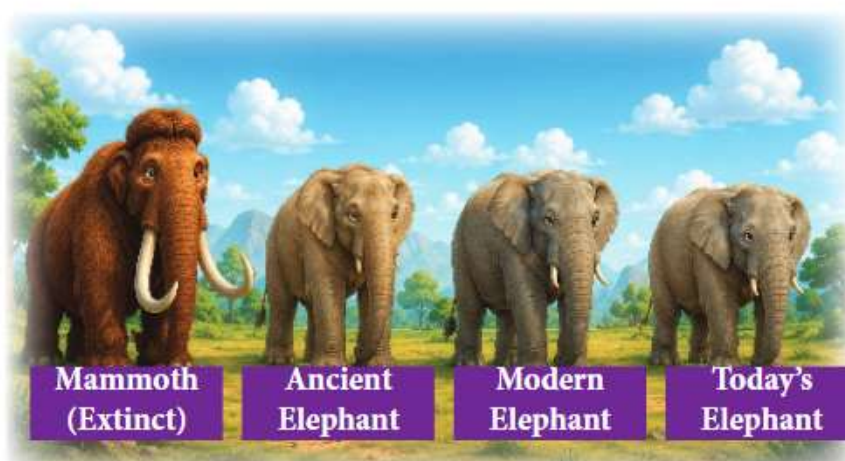
Big towns and cities are crowded with cars, trucks, buses, machines, alarms and sirens. When vehicles, horns and machines make loud, blaring sounds, they cause noise pollution. Some people live in noisy areas, near airports or railway stations, and are exposed to noise pollution all day. Exposure to these loud sounds over a long period of time may damage our hearing. Noise pollution can cause other serious health problems as well.



Ways to prevent pollution and conserve resources

Use electricity and petrol judiciously. Switch to using CNG as a fuel for vehicles.	Don't pour chemicals down the storm drain.
Discourage people from smoking in public places.	Fix taps, faucets and pipes that are leaking to save water.
Plant more trees all around to enrich the environment.	Use safer alternatives to pesticides.
Walk, cycle or use public transportation whenever possible.	Reduce, reuse, recycle.
Turn off lights, TV, radio and other electrical items when not in use.	Keep the volume of music and the television down at home so that you don't disturb others.

When a plant or an animal no longer exists on Earth, that animal or plant is said to be extinct. Extinction can take place in a number of ways and for a number of reasons. It could happen when a species is dependent on a particular type of food, which becomes unavailable, or the Earth becomes too hot or too cold for its survival. Sometimes creatures or plants evolve into new forms, and the older form ceases to exist. For example, today's elephants have descended from mammoths, that no longer exist. This process is known as evolution.



Fact Finder

- Every drop saved today, secures our tomorrow.

MASS EXTINCTION

Mass extinction occurs when many groups of animals and plants become extinct at the same time. This may have been due to gradual changes in climate over millions of years, or by the Earth being periodically hit by comet showers.



ENDANGERED SPECIES

Today there are many thousands of plants and animals that are in danger of becoming extinct. These are known as endangered species. They often become endangered or extinct because of human beings.

- We have destroyed and polluted the habitats of many animals.
- We have hunted down three birds—the dodo, the passenger pigeon and the giant moa—to extinction.
- Large mammals such as elephants, rhinos and giraffes are threatened today.
- This is because their habitats have been destroyed and they are hunted by poachers for their meat, skin, horns and tusks.
- Jaguars, snow leopards, tigers, bears and even members of the ape family are now extinct in many of the areas in which they once lived.
- Frogs, reptiles and fish are endangered by the draining of wetlands, pollution of waterways, destruction of rainforests and also by smuggling.



Summary



- Pollution harms air, water, soil, noise, threatening health and environment.
- Reduce, reuse, recycle, plant trees, conserve water, protect natural resources.
- Endangered species need conservation to prevent extinction and preserve biodiversity.
- Everyone should keep Earth clean for healthier future generations together.





EXERCISE



A. Tick (✓) the correct option.

- a. Which type of pollution is caused by smoke from factories and vehicles?
Water pollution ☐ Air pollution ☐ Soil pollution ☐
- b. Which fuel is mentioned as a cleaner alternative for vehicles?
Diesel ☐ Petrol ☐ CNG ☐
- c. Throwing garbage into rivers mainly causes:
Air pollution ☐ Water pollution ☐ Noise pollution ☐
- d. A plant or animal that no longer exists on Earth is called:
Endangered ☐ Extinct ☐ Rare ☐

B. Fill in the blanks.

- a. Dirty water can spread diseases like _____.
- b. Excessive use of fertilisers and pesticides pollutes the _____.
- c. The three R's stand for Reduce, Reuse and _____.
- d. National parks help protect plants and _____.

C. Write true or false.

- a. Air pollution is caused only by natural events. _____
- b. Noise pollution can affect our hearing. _____
- c. All endangered species are safe from extinction. _____

D. Answer the following questions in short.

- a. Name the four main types of pollution.

- b. What is an endangered species?

- c. What does the term 'extinct' mean?



Revision Test Paper - IV

(Based on Chapter 13 to 16)



A. Tick (✓) the correct option.

a. Which of these is a cause of water pollution?

Bathing animals ☐ Immersion of idols ☐ Both of these ☐

b. What are the types of rocks?

Three ☐ Four ☐ Five ☐

c. How can we clean water?

By boiling ☐ By adding chlorine tablets ☐

Both ☐



B. Fill in the blanks.

a. Dirty water can spread diseases like _____.

b. We should avoid breathing _____.

c. Soil is formed from the _____.

d. _____ is very important for all living things.



C. Write true or false.

a. Pollution means contamination of air.

b. The flat end at the top is called the south pole.

c. Pushing and pulling are known as forces.



D. Answer the following questions in short.

a. What are pollutants?

b. What is chlorination?

E. Answer the following questions.

a. What can we do to prevent air pollution?

b. What does the term 'extinct' mean?





Model Test Paper-II

(Based on Chapter 9 to 16)



A. Tick (✓) the correct option.



- a. _____ is celebrated in Punjab.
Baisakhi ☐ Onam ☐ Pongal ☐
- b. _____ is the festival of Christians.
Guruparb ☐ Christmas ☐ Holi ☐
- c. We should not touch electrical fittings with?
Wet hands ☐ Dry hands ☐ Both ☐
- d. We should cross the road at?
Cow crossing ☐ Zebra crossing ☐ Horse crossing ☐
- e. A plant or animal that no longer exists on Earth is called:
Endangered ☐ Extinct ☐ Rare ☐

B. Fill in the blanks.

- a. Deepawali is a _____ festival.
- b. Republic Day is a _____ festival.
- c. Safety habits keep us safe from _____.
- d. We should cross the road at _____.
- e. Dirty water can spread diseases like _____.



C. Match the columns.

- | | |
|-----------------|-----------------------------|
| a. Train | i. Humus |
| b. Television | ii. Invisible |
| c. Organic Part | iii. Methane |
| d. Air | iv. Moves on railway tracks |
| e. Natural gas | v. Mass communication |

