ENVIRONMENTAL STUDIES

5

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Every care has been taken to minimize the mistakes regarding printing and other aspects of the book. However, there is always a scope of improvement. Any suggestion for further improvement of this book would be greatly acknowledged.

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Preface

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

The book " Environmental Studies " is a series of 1 to 5 (in six parts) which is strictly based on the guidelines of NEP pattern to facilitate the teaching and learning of environmental studies.

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

Key Features of the Series

- Covers the latest syllabi of various boards.
- All the exercises in the books can be used as tasks for Revision Test paper and Model Test Paper.
- Interactive study approach.
- An activity is provided in each chapter to facilitate hands-on learning and consolidation of environmental concepts.
- Points to remember are 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.
- Facts corner are given in each chapter where required.
- Info bits are also given in each chapter.
- Teacher Notes are given in each chapter where required.

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

Index

1 Internal Organs and Their Functions

Learning Objective

- Our organs
- Digestive system
- Reproductive system
- Muscular system
- Excretory system
- Breathing system
- Nervous system
- Circulatory system

Let Me Answer

How many bones are present in our body?

Our Organs

Human body is a combination of different systems that work systematically together. The human body is made up of a large number of small units known as cells. Cells of the same kind join together to form a tissue. Tissues join together to make an organ. Our body has two types of organs external organs and internal organs. The organs which are on the outer side of our body are called external organs. The organs which are inside our body are called internal organs. We cannot see them from outside. Internal organs are packed inside our body. They perform like a group and show different functions. Group of internal organs that perform certain functions is called organ system.

Different Systems Of Body

Skeletal System

infobits

- No part in human body is useless or unnecessary, each and every part has its use.


Lungs


heart


Liver


Stomach

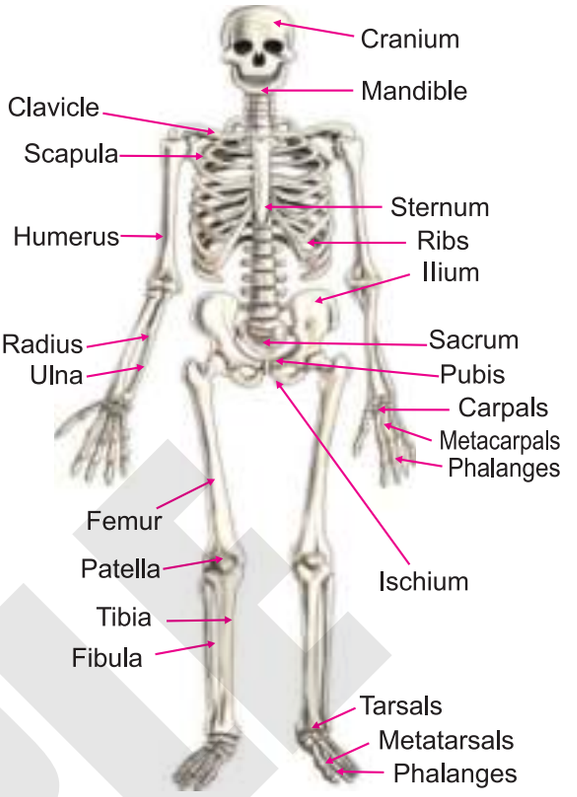

Brain


Lungs heart

TEACHER'S NOTE

Inform the students about different internal organs and their functions in the human body.

The skeletal system is the framework of our bones. A human body has 206 bones. The bones are hard and strong. They give shape and support to the body.



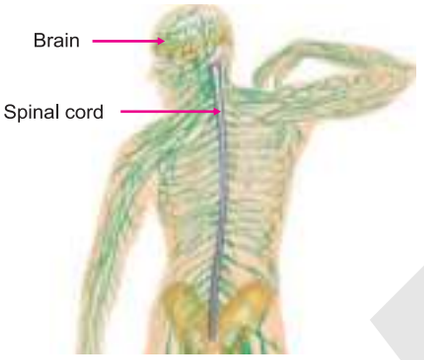
Skeletal system

Muscular System


Muscular system

There are more than 600 muscles in our body. Muscles along with bones help the body to move.

Nervous System



Nervous system

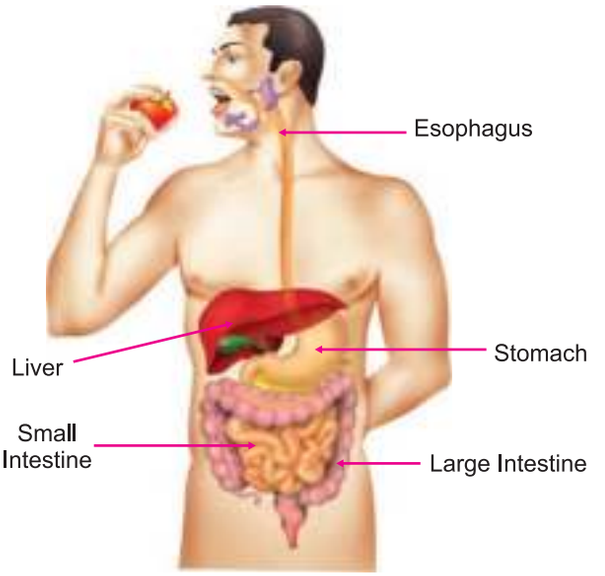
It receives messages from the sense organs and other parts of the body and orders for action. Various actions like seeing, hearing, learning, thinking, speaking are also controlled by the brain which is a part of this system. Brain controls all other systems in our body.

Digestive System

The breaking down of food from complex to simple soluble form is called digestion. Mouth, stomach, small intestine and large intestine take part in digestion.

What is digestion? How is food digested?

You digest food means you change it into the simplest form that can be absorbed by the blood.



Digestive system

What happens inside the mouth?

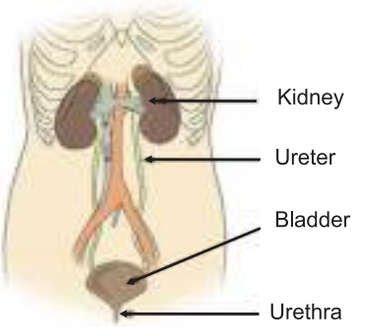
When you bite a sandwich, you find that it becomes very wet in your mouth. The saliva begins to flow into your mouth and your sharp biting teeth in the front cut it and your flat grinding teeth at the back grind the food. If you chew bread for some time, you will find it turning sweet. This is because the digestive juice, saliva, along with an enzyme (a substance which helps in digestion) changes the starch in bread into sugar. Hence it tastes sweet.

What happens to the food inside the stomach and the intestine?

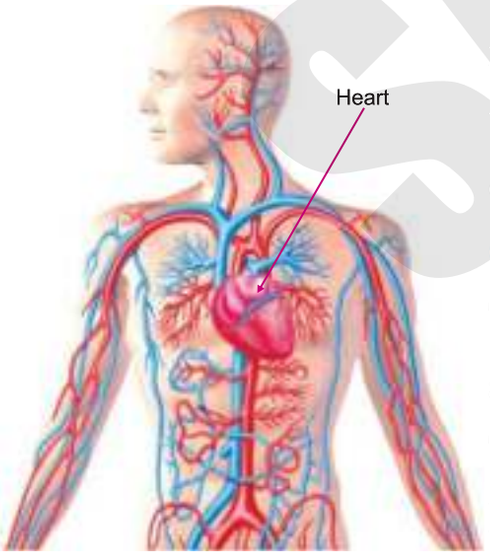
Stomach

From the mouth the food goes into the stomach. Here the food is churned and mixed with several digestive juices produced by the walls of the stomach. Germs are killed by an acid which also helps to break the food down into simple substances. The stomach takes about four hours to digest the food. The food then goes to the lower part of the stomach and from there into the small intestine.

Excretory System : The wastes in the body have to be removed regularly. This work is done by the organs of the excretory system. The kidneys, lungs and skin help to throw out waste materials from the body in the form of urine, breathed out air (carbon dioxide) and sweat.



Excretory system



Circulatory system

Circulatory System

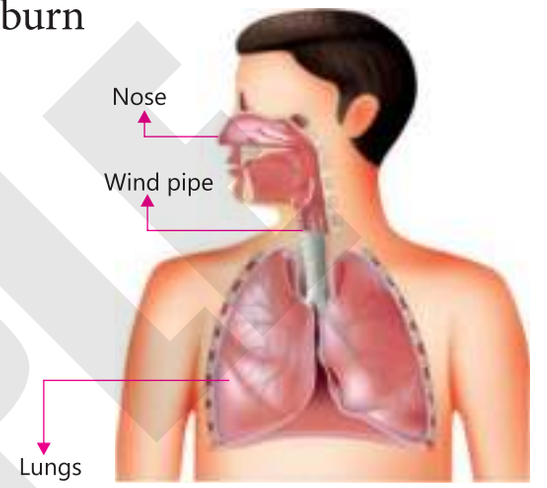
The blood supplies food, oxygen and other materials to all parts of the body and takes back waste materials. This work is done by the process of circulatory system. In this system, heart is the main organ. It pumps the blood to different parts of the body.

Reproductive System

The organs of this system help to produce babies. Because of this system, life on the earth goes on.

Breathing System

Nose, windpipe and lungs make breathing system. This system supplies oxygen to the various parts of our body. This oxygen is used to burn food and give us energy to do work.



Breathing system

Good Breathing Habits

1. Always breathe through your nose.
2. Breathe fresh air.
3. Keep the windows of the room open.
4. Do not cover your face while sleeping.
5. Wear loose clothes that make you feel comfortable.

infobits

• Skin is the largest sense organ in our body.

Summary

- Human body is the most wonderful and perfect machine.
- The organs inside our body are grouped together to form different system.
- The skeletal system gives shape and support to the body.
- The nervous system receives messages and give orders for actions.
- We must learn correct breathing habits.

Excercise

A. Tick (✓) the correct option.

a. The smallest unit of human body is

ear ⬡ cell ⬡ tissue ⬡

b. A human body has _____ bones.

206 ⬡ 208 ⬡ 207 ⬡

c. There is a skull in our _____ .

head ⬡ leg ⬡ hand ⬡

d. Stomach is a part of _____ system.

digestive ⬡ nervous ⬡ skeletal ⬡

e. _____ is related to breathing system.

Food ⬡ Walk ⬡ Oxygen ⬡

B. Fill in the blanks.

a. The breaking down of food from complex to simple soluble form is called _____ .

b. The _____ , _____ and _____ throw out waste materials in the form of urine, breathed out air and sweat.

c. Saliva is present in the _____ .

d. The human body is made up of a large number of small units known as _____ .

C. Write true or false.

a. The brain receives messages from all parts of the body. _____

b. The food we eat is in a simple form. _____

c. We should always breathe through our mouth. _____

d. The skeletal system is a framework of 206 bones . _____

e. The human body works very much like a machine. _____

D. Match the following.

a.	The breathing system	(i)	helps in digestion of food.
b.	The skeletal system	(ii)	helps in breathing.
c.	The digestive system	(iii)	helps in circulating the blood.
d.	The circulatory system	(iv)	gives shape and support to our body.
e.	The excretory system	(v)	helps in throwing wastes from the body.

E. Answer the following questions.

a. How does our body work?

b. Write the function of the breathing system.

c. Write the functions of the circulatory system.

d. What is the function of the digestive system?

Draw a picture of human ear.

2 Taking Care of Body Parts

Learning Objective

♣ Taking care of our body parts ♣ Exercises to remain healthy

Our body performs various functions. For this, it should always be in a good condition.

Food is the basic need of our body. But along with food we need to take care of all our body parts to remain fit and fine.

Taking care of our Body Parts

1. Eyes

Eyes are sense organs of sight.

They are very sensitive.

- Wash eyes with fresh and clean water.
- Do not rub eyes.
- Get eyes checked by a doctor regularly.
- Use spectacles if advised.

Let Me Answer

What is the hardest part of the human tooth?

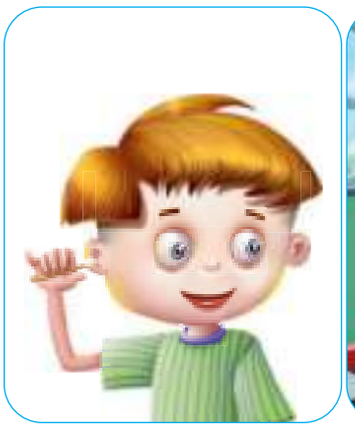
infobits

• There are three types of eye defects-Myopia, Hypermetropia and Presbiopia.

2. Ears

Ears are sense organs of hearing.

- Never put any sharp object like hair pin, matchstick, etc. in your ears.
- Always use soft-ear buds to clean ears.
- Consult a doctor immediately if an insect enters your ears.



TEACHER'S NOTE

Guide the students with the correct ways of taking care of their body parts. Also tell them why should we take care of our body.

3. Nose

Nose is the sense organ of smelling.

- Do not insert finger into nose, because finger contains dust and germs.
- Use handkerchief while sneezing or blowing your nose.

4. Teeth

Care and cleanliness of teeth are as important as other parts of body.

- Brush your teeth twice a day.
- Use a toothbrush having soft bristles and brush your teeth properly.
- Never use ash or burnt coal for cleaning your teeth, as it may damage your teeth.

5. Tongue

Tongue is the sense organ of taste.

- After brushing, clean your tongue using a tongue cleaner.

infobits

- Our tongue contains different kinds of taste buds to taste the food.

6. Skin

The outer covering for the entire body surface is called skin.

- Keep your body neat and clean.
- Use a good quality soap while bathing.
- Use a soft and clean towel to wipe your body after taking bath.

7. Hair

- Hair should be clean and in a tidy condition.
- Hair should be washed every 2-3 days. Apply oil and comb hair in order to maintain their growth and shine.

8. Nails

Big nails carry germs and causes various diseases. They should be cut so that dirt does not find place to settle.

Exercises to Remain Healthy

Keep doing regular exercise. Exercises are good for health. A few exercises are

- Morning and evening walk
- Jogging
- Rope skipping
- Swimming

- Our body performs various functions.
- The outer covering for the entire body surface is called skin.
- Tongue is the sense organ of taste.
- Nose is the sense organ of smelling.
- Exercises are good for health.

Excercise

A. Tick (✓) the correct option.

a. Which one is the sense organ of sight?

Ears ⬡ Eyes ⬡ Nose ⬡

b. Whom should we consult with, if something enters our ears?

Doctor ⬡ Cobbler ⬡ Tailor ⬡

c. Hair should be washed every

7-8 days ⬡ 10-15 days ⬡ 2-3 days ⬡

d. Which object should not be inserted in the ears?

Hairpin ⬡ Cotton bud ⬡ Medicine ⬡

e. What should we use while sneezing?

Towel ⬡ Handkerchief ⬡ Shirt ⬡

f. How many times should we brush in a day?

4 times ⬡ 7 times ⬡ 2 times ⬡

B. Fill in the blanks.

a. We should not _____ our eyes.

b. We should use _____ to clean ears.

c. Never use _____ or _____ to clean your teeth.

d. _____ are good for health.

e. We should use a good quality _____ while bathing.

f. Big nails carry germs and causes various _____ .

C. Write true or false.

a. Food is the basic need of our body. _____

b. We should always use a hard toothbrush to clean our teeth. _____

c. Rope skipping is a good exercise for the whole body. _____

d. Dirty tongue generates a foul smell in the mouth. _____

e. We should use spectacles, if advised. _____

D. Answer the following questions.

a. How should we take care of our hair?

_____

b. How do we take care of our eyes?

_____

c. Why should we not put finger in the nose?

_____

d. How should you brush your teeth?

_____

e. How will you take care of your ears?

_____

A. Prepare a chart Health is Wealth.

B. Go for health maintenance with a routine.

3 The Food We Eat

Learning Objective

- Farmers in India
- Government help farmers
- Changing food habits
- Factors favourable for cultivation
- Food habits
- Food storage

Let Me Answer

Can you name three energy giving foods?

Farmers in India

We have different farmers in India who have their own ways of farming.

1. Small Farmers

Farmers which have a small plot of land are called small farmers. They need to borrow money from money lenders to purchase things like agricultural implements, seeds, fertilizers and pesticides. They are able to grow just enough to feed their family.

They are also called subsistence farmers. They are dependent on the rain to water their crops.

Small farmers use bullocks to plough the fields.

2. Commercial Farmers

Commercial farmers own a large plot of land. They grow crops for sale in the market. They use modern machines, irrigation facilities, fertilizers and pesticides.

Commercial farmers use tractors.

3. Dairy Farmers

The farmers who rear cows, buffaloes and sell milk and milk products are called dairy farmers.

TEACHER'S NOTE

The food that farmers grow is the real food that we get. Explain to the students the importance of valuing food and other resources.

Factors Favourable For Cultivation

We need favourable climate and fertile soil to grow crops. Good quality seeds, modern farm machinery, good irrigation facilities, fertilizers and pesticides make a good yield of crops.

infobits

- Farmers who grow crops as well as rear animals are called mixed farmers.

Seeds

Farmers get seeds from the seed markets. Farmers should use good quality hybrid seeds, to ensure a higher yield.

Farm Machinery

Now-a-days modern farm machinery like tractors, seed sowers, sprayers, harvesters, cultivators and threshers are used by commercial farmers. These help the farmers to do their work easily.

Tractor

Seed sower

Sprayer

Thresher

Irrigation

Farmers should have a good system of irrigation to water the crops as and when required, so that they do not depend on rain for water.

The artificial way of supplying water to the plants is called irrigation.

Some farmers irrigate their land from tubewells. They do not have to rely on rain. The tubewells pump water up from under the ground. Then the farmers dig channels to make sure that the water reaches all parts of the fields.

Some farmers irrigate their land with water from tanks, open wells, canals or water bodies like lakes and ponds. They

Tube well

dig channels from the canal or lake to their fields.

Taking out water from a canal to irrigate the field.

Fertilizers

Fertilizers are substances that increase the yield of crops. Most plants need manure or animal dung. These are the best fertilizers because they are natural.

Pesticides

Pesticides are chemicals sprayed on the plants to protect them from pests.

Pesticides

Government Helps Farmers

The government provides help to farmers in the following ways

- It gives agricultural loans to farmers at low rate of interests.
- It helps farmers to buy their own land.
- It ensures farmers good price for their produce.
- It provides high quality seeds, fertilizers and pesticides at subsidised rates.

infobits

• Artificial fertilizers are made from chemicals eg. urea.

Food Habits

People in different parts of our country and the world eat different kinds of food. Food habits of people depend upon the region where they stay, availability of food type, beliefs, customs, religion and culture.

- The people of Rajasthan eat dal-bati-choorma and bajre ki roti.
- The people of Punjab love to eat makki-ki-roti and sarson ka-saag.
- The people of West Bengal eat rice with fish curry.
- The people of Tamil Nadu eat Idli, dosa and sambhar.
- The people of Kolkata (Bengal) eat rice, rasogulla and sandesh.

Changing Food Habits

The food habits are changing because there is so much variety in food items. Children and even adults love to eat pizzas, burgers, pastas, momos and more of

Food eaten in different parts of India.

other junk food items.

When your grandparents were of your age, there was not much variety in food.

Food habits have changed because of the following reasons

- New varieties of crops have been introduced with the advancement in science and technology.
- We have access to different kinds of perishable food items throughout the year due to large cold storage facilities.
- Large variety of processed food is available in the market due to the growth in the processing industry.
- Packed food is easily available and is used by many people.
- People love to eat readymade food.

Keep Food Safe

It is important to maintain cleanliness to keep food safe.

- The utensils in which food is stored or prepared should be clean.
- The person handling food should always wash his/her hands with soap and water.
- Keep the food always covered.
- Cook the food properly to kill all germs.
- Fruits and vegetables can be eaten raw. These should be washed well before eating.
- Avoid eating stale food.

Food Storage

There are times when farmers are not able to grow enough food, crops fail either because of lack of adequate rainfall or due to floods. At times like these, when

there are more people and less food, prices hike and poor have to suffer because they cannot afford the high food prices. When there is an extreme shortage of food it is called famine. It occurs due to destruction of crops because of natural calamities like droughts, floods, earthquakes, cyclones and tsunamis.

Flood

Earthquake

Drought

Tsunami

There are also times when food shortage is created artificially. This happens when enough food is produced but is not released in the market to keep the prices high. Traders board the foodgrains and make more money by selling it at a substantial higher rate.

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- In 1943, a severe famine struck Bengal and lakhs of people died of starvation.

Summary

- We have different farmers in India who have their own ways of farming.
- Favourable climate and fertile soil are necessary to grow crops.
- Good quality seeds, modern farm machinery, good irrigation facilities, fertilizers and pesticides make a good yield of crop.
- The food habits are changing because there is so much variety in food items.

Excercise

A. Tick (✓) the correct option.

a. Who are subsistence farmers?

Small farmers ⬡ Commercial farmers ⬡

Dairy farmers ⬡

b. Which of these is needed for a good yield of crops?

Good quality seeds ⬡ Fertilizers ⬡

Both (a) and (b) ⬡

c. Which farmers grow crops as well as rear animals?

Dairy farmers ⬡ Mixed farmers ⬡

Pisciculturists ⬡

B. Fill in the blanks.

a. _____ farmers own a large plot of land.

b. Some farmers irrigate their land from _____ .

c. _____ are substances that increase the yield of crops.

C. Write true or false.

a. Idli and Dosa are eaten in Punjab. _____

b. Commercial farmers use tractors. _____

c. Farmers get seeds from the seed markets. _____

d. Pesticides are chemicals sprayed on animals. _____

e. Government helps farmers to buy their own land. _____

D. Define the following terms.

a. Famine _____

_____

b. Irrigation _____

_____

c. Hybrid seeds _____

_____

d. Fertilizers _____

_____

E. Answer the following questions.

a. Who are small farmers?

_____

b. Which factors are favourable for cultivation?

_____

c. How are the food habits changing now a days?

_____

d. What is food shortage? How does it occur?

_____

A. Interview a farmer and ask him about the problems he faces while growing crops. Make a project report.

B. Find out the popular dishes of these states.

States	Dishes	States	Dishes
a. Punjab	_____	b. West Bengal	_____
c. Tamil Nadu	_____	d. Rajasthan	_____

Revision Test Paper-I

(Based on Chapters 1 to 3)

A. Tick (✓) the correct option.

a. The smallest unit of human body is _____.

ear ⬡ cell ⬡ tissue ⬡

b. How many times should we brush in a day?

4 times ⬡ 7 times ⬡ 2 times ⬡

c. Which farmers grow crops as well as rear animals?

Dairy farmers ⬡ Mixed farmers ⬡ Pisciculturists ⬡

B. Fill in the blanks.

a. Saliva is present in the _____.

b. We should use _____ to clean ears.

c. _____ farmers own a large plot of land.

d. The breaking down of food from complex to simple soluble form is called _____.

C. Answer the following.

a. How does our body work?

_____

b. How will you take care of your ears?

_____

D. Name the organs that the following system include.

a. Digestive System _____

b. Breathing System _____

c. Skeletal System _____

4 Water

Learning Objective

- Sources of water
- Changes in sources of water
- Means of Irrigation
- Floating and sinking
- Soluble and Insoluble
- Miscible and Immiscible

Sources of Water

Rain is the main source of water. The other sources of water are lakes, ponds, rivers, seas and oceans. During earlier times there were no taps or pumps. People had to walk long distances to bring water in pots, buckets etc.

Baolis

A baoli is a huge well. It has steps to reach to the bottom. In earlier times, baolis were built to collect and store rainwater.

A baoli is also called a step-well. These are used as a meeting place by people. Baolis are common in Rajasthan and Gujarat.

Baoli

Changes in Sources of Water

In ancient times, women used to walk many kilometres every day to fetch drinking water from a well. To take a bath and wash clothes, they used water from a nearby pond. Then a handpump came into use. Then electric pump were installed which pulled the ground water to fill up the overhead tank. From the overhead tank, water came to the taps in the kitchen.

Let Me Answer

Where do you get water from? Write the names of sources of water.

infobits

- Bundi in Rajasthan is called the 'City of Step Wells' because it has 381 baolis.

TEACHER'S NOTE

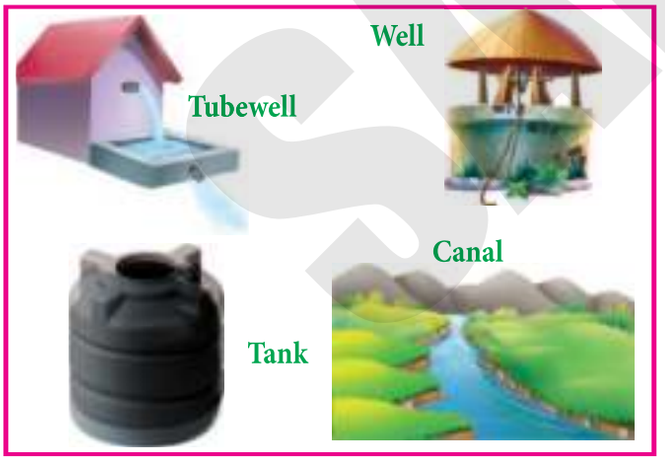
Inform learners about the various sources of water and its importance.

Piaos

Many people serve free water to people on the road sides. Piao can be seen along the road sides. Some people organise free water camps to provide drinking water to people. It is a common sight to see earthen pots filled with water and kept on the road side under tree, for the use of people.

Means of Irrigation

In India, our fields are irrigated with the rains that we get during monsoons. But it is unevenly distributed. So, we need some artificial means to water our crops timely. This is called irrigation. The different sources of irrigation in our country are wells, tubewells, tanks and canals. Different crops have different water requirements. For example rice crop requires more water, wheat crop requires to be irrigated at different stages. Crops like sugarcane, rubber and tea require less water.



Well

A well is a deep hole in the ground where water is available. The water is drawn out using a pulley. A rope attached to a basket is pulled over the pulley to draw the water out. The string goes around the grooves of the pulley.

Tubewells

Tubewells are used to draw underground water by means of electric pumps. When the water is found deep under the ground, tubewell is the best method to draw out that water. The bore is dug deep and tubes are sunk in it. Tubewells are widely used by the farmers because it is an easy method of irrigation.

Tanks

In some places, like the Southern Plateau, the ground is hard. It is very difficult to dig wells there. During the rainy season, some low lying areas get filled with water. These are called tanks. This water is used to irrigate the fields during the dry season.

Canals

Canals are small channels dug to take water out from the rivers and irrigate the fields.

Devices Used for Irrigation

The crops in fields are irrigated by tubewells, wells, canals and lakes. Some devices that are used for irrigation are:

Sprinklers

Water is distributed through the pipes at regular intervals, using a pump. Irrigating crops in this way gives the effect of rainfall. The sprinkler system helps to save water.

Water Wheel

A water wheel consists of a large wheel mounted vertically on a horizontal axis. A number of blades or buckets are arranged on its outside rim forming the driving surface. When the water strikes the buckets, the wheel rotates and the water in the buckets fall on the other side and is directed into water channels to irrigate the crops.

Wind Mill

In some places, wind energy is used to draw water from wells.

Wind mill

Water Pump

Motorised water pumps are also used to draw underground water, to irrigate fields.

Water pump

Floating and Sinking

There are some objects that float on water and some that sink in water. Whether the object floats or sinks in water depends on its density. Density is the amount of matter present in a given volume of a material. Objects like iron nails, coins and stone sink in water because they are denser than water. Objects like cork, thermocol and plastic toy float on water because they are less dense than water.

infobits

- An egg will float if we add sugar to water.

When an object is put in water, it tries to push aside the water below it with its weight and takes up the space. Water also exerts an upwards force on the object, which is called buoyancy. If the object displaces water equal to its weight in water, it floats. But if the weight of the object is more than the water it displaces, it sinks.

Soluble and Insoluble

Substances are said to be soluble in a liquid, when they dissolve easily in it. For example, if you put sugar in water, it mixes with the water and becomes a part of it. The water now tastes sweet. This mixture of sugar and water is called a solution. The sugar is called the solute and the water that dissolves the solute is called the solvent.

When substances are not soluble in a liquid, they do not dissolve in it. They are said to be insoluble. For example, if you add sand to water, you can see that the particles of sand do not mix, even if the particles are very small. If you pour the mixture through a cloth filter, the liquid goes through but the insoluble substance will be left behind on the cloth.

Sugar Water Sugar-solution

Miscible and Immiscible

Liquids, which mix with each other, are called miscible liquids. For example, lime juice and water. Add a few drops of oil to water and stir. The oil will not mix with water. It will separate out and float on the water surface. Water and oil do not get mixed. They are said to be immiscible liquids.

infobits

- Water is called a universal solvent as it can dissolve many substances.

Measuring Liquids

Liquids do not have a definite shape. They take the shape of the container they are poured in. But liquids have a definite volume. The volume of a liquid is always equal to the inner volume of the container. The volume of liquid is measured in litres (*l*).

The small unit of volume is millilitre, which is denoted by ml. A measuring cylinder is a cylinder with markings that indicate the volume in litres and millilitres.

Summary

- Rain is the main source of water.
- A baoli is a huge well.
- The different sources of irrigation in our country are wells, tubewells, tanks and canals.
- Wells are dug to bring the underground water to the surface.
- When the water is found deep under the ground, tubewell is the best method to draw out that water.
- Different crops require different amount of water.
- Different devices used for irrigation are sprinklers, water wheels, wind mill and water pump.

Excercise

A. Tick (✓) the correct option.

a. Which is the main source of water?

Pond ⬡ Baoli ⬡ Rain ⬡

b. Which of these require less water?

Jute ⬡ Millets ⬡ Tea ⬡

c. A deep hole in the well where water is available is called

well ⬡ handpump ⬡ tubewell ⬡

d. Step wells are also called

water wheels ⬡ baolis ⬡ piaos ⬡

e. Which of the following is called universal solvent?

Water ⬡ Milk ⬡ Oil ⬡

B. Fill in the blanks.

1. _____ is the main source of water.
2. During earlier times there were no _____ or _____ .
3. A _____ is called a stepwell.
4. Baolis are common in _____ and _____ .
5. In India, our fields are irrigated with the _____ that we get during _____ .

C. Define the following.

a. Well _____

b. Tubewell _____

c. Miscible liquid _____

d. Immiscible liquid _____

e. Solute _____

f. Solvent _____

D. Answer the following questions.

a. What are the different sources of water?

_____

_____

b. What is a baoli?

_____

_____

c. What are the changes in sources of water?

_____

_____

d. What is a tubewell?

e. What are different means of irrigation?

A. Name these water resources and write 2-3 lines about it.

5 Clothes

Learning Objective

- Dresses of different Seasons
- Dress of Different States

The dresses we wear depend upon the climatic conditions and regions in which we live. Therefore we shall study the different types of dresses which men and women wear all over the country.

Dresses of Different Seasons

There are three main seasons. They are Summer, winter and rainy season in our country.

During each season people wear different kinds of clothes.

During summer season, the weather becomes very hot. We wish to wear cotton clothes. These clothes protect us from heat of the sun. They have enough pores to let air come in contact with our body. These are very suitable for summer season.

During winter season, we need to wear woollen clothes which protect us from in tolerable cold weather. We wear sweaters, coats, scarfs, mufflers, etc. to save ourselves from the freezing cold. They help us to keep warm.

During rainy season, people wear rain-coats and use umbrellas to protect themselves from rain.

Let Me Answer

Name the traditional dress of Tamilnadu.

Cotton clothes

Woollen clothes

Umbrella and Raincoat

TEACHER'S NOTE

Assist the students to understand different kinds of dresses in India. Also, tell them why clothes are an essential part of our lives.

Dresses of Different States

People living in different states of India eat different types of food. Similarly, dresses too depend on the places where people live.

Some places in India are very hot and some are very cold, some are hilly areas, while others are coastal. So, the diversity in geographical areas affect the choice of our clothes to a great extent.

1. Hilly Region

The hilly areas, like Jammu and Kashmir are very cold areas. People wear woollen clothes to protect themselves from cold.

Kashmiri dress

In these areas men and women wear long woollen coat called phiran over their clothes, to protect themselves from cold.

Women also wear sweaters and shawls.

The reason to wear phiran is to protect body from cold and also to easily move in the mountains. Being loose, phiran does not obstruct movement of body in hilly areas.

2. Coastal Areas

In the coastal areas, such as Maharashtra, Gujarat, Tamil Nadu, Kerala, West Bengal etc. People like to wear light and simple dresses.

The men wear Kurta-pyjama and an achkan over kurta.

They wear a special kind of turban too. Women of Maharashtra wear saree-blouse. But way of dressing is different from other states.

The Gujarati men like to wear Dhoti-kurta with a Gandhi cap. Lehnga-choli is the favourite dress of women in Gujarat.

Maharashtrian dress

Gujarati dress

In Tamil Nadu, men wear a traditional dress called mundu. It is a lungi. Women wear sarees in this region.

People in West Bengal wear loose clothes. Men

wear dhoti-kurta with angostra over their shoulders. Women wear sarees in a different style. They usually tie bunch of keys to their pallu (corner of the saree).

3. Plains

People living in plains such as Uttar Pradesh, Punjab, Haryana, Rajasthan and Madhya Pradesh like to wear simple clothes.

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Baijainbah is a big piece of cloth that is used by mothers in North-East states to tie their children on their backs.

The main dress of the people in Punjab is salwar-kameez for women. Men wear kurta-lungi. Men tie a turban called pagdi.

In Uttar Pradesh men wear kurta-lungi. Women wear saree-blouse. Some women also wear salwar-kameez. Men in Uttar Pradesh wear Gandhi cap as headwear.

Punjabi dress

Haryanvi dress

In Haryana, women wear ghaghra-kurta and odhani. Men of Haryana wear dhoti-kurta with a turban.

In Rajasthan, men wear kurta-pyjama with different kinds of turban. Angarakha is also worn there. Women wear Ghagra with kachli.

In Madhya Pradesh, women wear saree blouse and ghaghra choli. Men wear dhoti-kurta.

Dresses of Special Occasions

On different occasions we wear different kinds of clothes. During marriage, we wear colourful and bright clothes. Special dresses are made for bride and groom.

For activities like swimming, exercising and dancing we wear special outfits.

In school, children wear clothes called uniforms.

People like doctors, policemen, army men, postman etc. wear different uniforms.

So, you have studied the various types of dresses worn for different seasons and occasions.


Cook


Sweeper


School uniform


Policeman


Postman


Army man


Doctor

Summary

- There are three main seasons- summer, winter and rain.
- In Tamil Nadu, men wear a traditional dress called mundu.
- The main dress of women in Punjab is salwar-kameez.
- People like doctors, policemen, army men etc., wear different uniforms.

Excercise

A. Tick (✓) the correct option.

a. In which region, do the men wear mundu?

Gujarat ⬡ Tamil Nadu ⬡ Kashmir ⬡

b. Which of these people wear uniforms?

Children ⬡ Postman ⬡ Both (a) and (b) ⬡

c. People of which region wear phiran?

Hilly region ⬡ Plains ⬡ Coastal region ⬡

d. Which is the most common dress of women?

Saree-blouse ⬡ Ghagra-choli ⬡ Skirt-top ⬡

B. Fill in the blanks.

a. In _____ region temperature remains normal throughout the year.

b. In U.P., _____ cap is a popular headwear.

c. Woollen clothes are suitable for _____ season.

d. School children wear _____.

e. _____ is a dress of people in hilly areas.

C. Write true or false.

a. We wear woollen clothes in rainy season. _____

b. Rajasthani men wear an angarakha. _____

c. We do not have any special dress for the bride. _____

d. Dhoti-kurta is a modern dress. _____

D. Answer the following questions.

a. Which type of clothes do we wear in winter? _____

b. Which type of clothes do we wear in summer? _____

c. Which type of clothes do you like to wear in parties? _____

d. Which type of clothes do people wear in plains? _____

e. What type of clothes do students wear in school? _____

A. Which is your favourite dress? Draw it in the space provided.

B. Know about the dresses your relatives and friends wear and where they live

6 Digestion

Learning Objective

- Why do we need food ? and their functions.
- Process of digestion
- Right way of cooking and eating food.
- Different types of teeth

Why do we need food?

All living things need food for their survival. Food gives us energy to do work.

Food helps in proper growth and development. It keeps us healthy.

It also protects us from diseases. So, food is necessary for the survival.

Let Me Answer

Name two foods that are rich in fat and two foods that are rich in vitamins?

Different foods

The energy from food builds the muscles strong that are needed to work efficiently.

We eat different types of food—wheat, rice, pulses, vegetables, fruits, spices, edible oils, etc. We eat food in various forms—cooked, ripened or raw. We get our food from either plants or animals.

Our food must contain carbohydrates, proteins, fats, vitamins, roughages and minerals. These nutrients are very essential for proper growth and development.

TEACHER'S NOTE

Everybody needs good quality of food to grow and survive. Discuss the different process and functions of the human body to digest food.

PROTEIN

Protein helps us in body-building. It helps in our growth. It also helps in healing process. Pulses, beans, peas, egg, cheese, fish and meat are all proteinated food.

Proteinated food

Pulses

CARBOHYDRATE

Carbohydrate provides us energy to do physical work. We get carbohydrate in two forms—sugar and starch. The sugarcane contains sugar. Cereals such as wheat, rice, maize and vegetables like potato contain starch too.

FAT

Fat provides more heat and energy than carbohydrate. It is stored beneath our skin to keep us warm. Oil, butter, nuts, ghee are foods containing fats. We should take fat only in approximate quantity. Too much of oily things make us more fatty.

Fat-contained food

ROUGHAGE

For proper digestion of food, roughages are very important. Roughages are fibres, which are not digested with the food but they help in easy digestion and removal of waste. For roughages, we should eat raw leafy vegetables, fruits and cooked food like chapatis which are made of coarse flour.

Vitamins And Minerals

Vitamins and minerals keep us healthy by fighting against diseases. They help us in formation of teeth, bones and blood.

Vegetables

Fruits

We get vitamins and minerals from fresh fruits, vegetables, milk and eggs. Vitamins and minerals are also known as protective food.

Food that contains all the nutrients in right proportion, i.e. carbohydrates, protein, roughage, fat, vitamins and minerals is called a balanced diet.

Milk is considered as a complete food as it contains all necessary nutrients. The quantity of nutrients in our food is measured in calories.

Protective food

Balanced diet

To maintain the nutrients while cooking, we must do the following things The boiled water of pulses and vegetables contains vitamins, so it should not be thrown away. It should be used in cooking. Wash vegetables properly before cutting, as washing destroys the vitamins and minerals of the cut vegetables.

DIGESTION

The food we eat is digested by the digestive organs of our body. The nutrients in our food are broken into simpler substances and is absorbed by the blood. This process is called digestion.

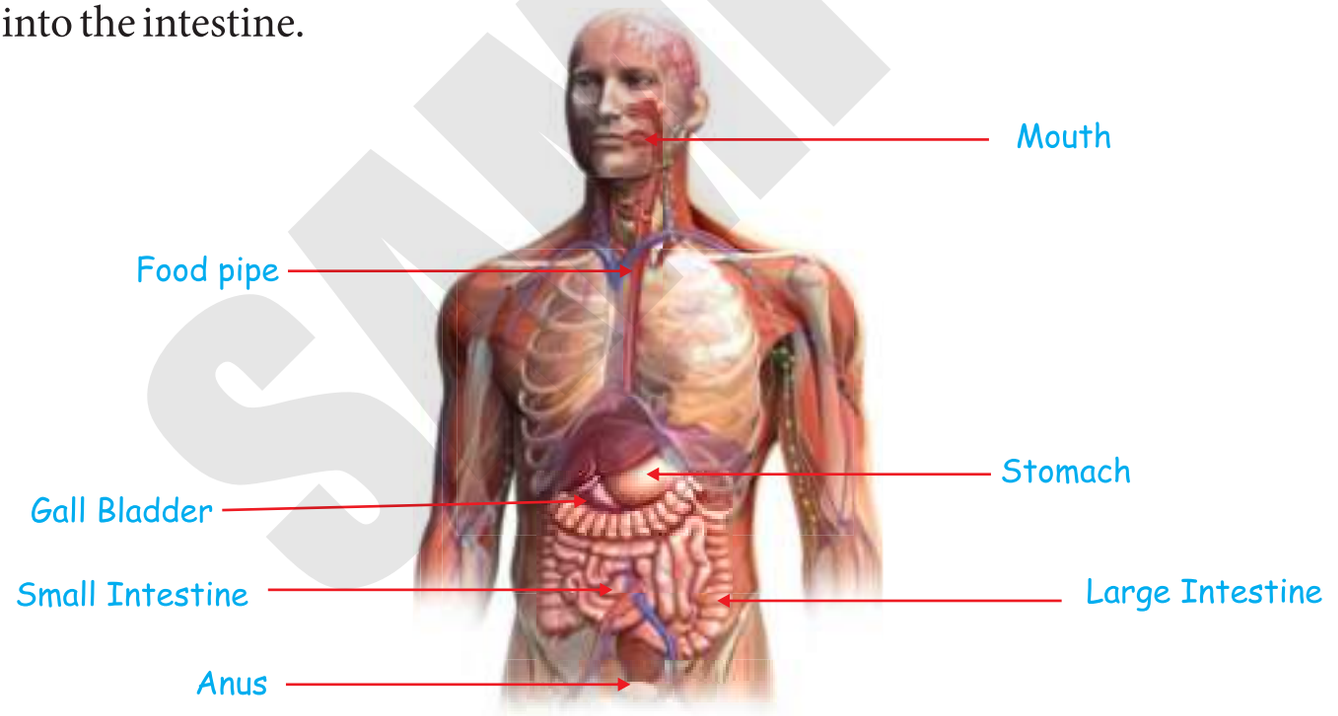
The main digestive organs of our body are mouth, foodpipe, stomach, small intestine, large intestine, pancreas, gall bladder and anus.

Process Of Digestion

Digestion of food starts in our mouth. The teeth cut the solid food into smaller bites. The saliva gets mixed with these particles and make chyme.

The chyme is rolled in the mouth pipe with the help of tongue. Saliva also helps in breaking the nutrients in simpler forms.

The chyme through food pipe is passed to the stomach. The stomach with its movement breaks the nutrients in more simpler form by adding juices and passes this into the intestine.



Digestive organs in the human body

The liver and pancreas pass their juices into the intestine which helps in complete digestion of nutrients. The simpler form of the nutrients is mixed with blood.

The nutrient-contained blood is passed to other body parts through the blood vessels.

The undigested or nutrition-less food is passed out of the body through anus.

Kidneys filter the blood and extra water is thrown out in the form of urine.

Role Of Teeth In Digestion

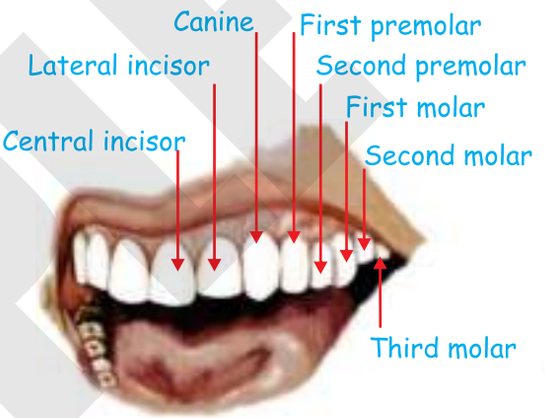
We have two sets of teeth during our life time—Temporary or Milk teeth and Permanent teeth.

Children up to the age of 7 or 8 years have temporary teeth. They are 20 in number. At the age of 7 or 8 years, the permanent teeth grow after falling of temporary teeth. There are a total of thirty-two permanent teeth in an adult.

There are different sizes and shapes of teeth.

The four main types of teeth are

1. **Incisors :** The four front teeth that are used for biting the food.
2. **Canines :** These are also called tearing teeth. These are sharp teeth for tearing the food. In carnivores, these teeth are very pointed to tear the flesh.



Teeth in the upper jaw of an adult

3. **Premolars :** These teeth are broad-shaped. They are four in number. They are used for cracking and crushing food into pieces.
4. **Molars :** Molars are six in number. They are also broad and flat. They grind and chew the food. The last molars are also known as wisdom teeth.

Eating too much of sweet like chocolate, toffee, cold drink, ice cream also decay our teeth.

For proper digestion, we must take care and improve our eating habits.

Here are a few tips for the easy digestion of food.

1. Take small bites of food. Chew it well.
2. Never eat in haste with mouth full.

3. Eat balanced diet. Drink water. Eat both cooked and raw fruits, vegetables in the form of salad.
4. Try to be regular about the eating time.
5. Go for toilet everyday in the morning.
6. Do not overeat.
7. Wash your hands before and after eating food. Rinse your mouth well with water after taking your meal.
8. Avoid eating uncovered eatables or cut fruits and vegetables.
9. Wash fruits and vegetables before eating.

Cooking The Food

Cooking makes the food easily digestable. It also makes the food delicious. To cook the food, we boil, fry, bake or roast it.

Besides eating cooked or raw food, we also take preserved food. Food Preservation is the method of keeping the food for longer time. Cooked or uncooked foods both can be preserved.

To preserve food, we generally

- freeze it as ice cream or custard.
- canned it as in tinned food.
- salt it as in pickles.
- sweeten it as in jam, jelly and chutney.
- oil it as in pickles.
- dehydrate it, i.e. by keeping fruits and vegetables in sun or condensed milk.

Ice cream

Food Preservation

Food preservation is the process that involves storing of perishable food materials for a long time, so that they do not get spoilt and can be used later. There are different ways of food preservation.

Refrigeration

The most common way to preserve food is to keep it at a low temperature. This is because germs cannot grow at a low temperature. This is called refrigeration. We can preserve milk, vegetables, fruits, eggs and meat by refrigeration for several days.

Refrigeration

Drying

This method involves the reduction of water content in food items like fish, potato chips, bananas, papayas, etc. This is to prevent the growth of micro-organisms. Food items are dried in dryers, directly in the sun, ovens, so as to remove all the moisture.

Vacuum Packing

Vacuum packing is the process in which food items are stored in air-tight containers. Nuts are preserved by vacuum packing.

Drying potato chips

Boiling Food

Food like milk can be preserved by boiling.Boiling kills germs present in the milk.

Salting

The process by which moisture is removed by adding salt is called salting. It is also called curing. Meat is generally preserved by this method.

Vacuum packing containers

Canning or Bottling

Some food items go bad when they come in contact with moisture in the air. Flour, biscuits, sugar, etc. remain fresh when they are kept in a dry can, tin or jar with a tight lid.

Boiling milk

Pickling

Pickling involves the preservation of food stuffs like mango, lemon, chilly in edible oils with salt and spices.

Fermenting Food

The process of fermentation preserves food, and also makes it more nutritious and digestible. For example, curd is fermented milk. Curd is good for you and can help you feel better if you have diarrhoea. Idlis are made from fermented batter of rice and urad dal. Fermented food helps you fight bad germs. Also such foods are oil free.

Pickle

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Food is stored in two ways.
Dry storage- wheat, pulses and sugar.
Cold storage- fruits and vegetables.

Tinned food

Freezed fruits and vegetables

Summary

- Food gives us energy to do work.
- Nutrients are very essential for proper growth and development.
- Fats provide heat and energy. It remains stored in our body.
- Roughage are fibres which help in easy digestion.
- It is very important to preserve food. It is done by refrigeration, drying, vaccum packing, boiling, salting, canning, bottling, pickling and pasteurization.

Excercise

A. Tick (✓) the correct option.

a. Digestion of food starts in our _____ .

mouth ⬡ stomach ⬡ intestines ⬡

b. _____ helps in breaking the nutrients in simpler forms.

Water ⬡ Saliva ⬡ Teeth ⬡

c. _____ makes the food easily digestable.

Cooking ⬡ Chewing ⬡ Dehydrating ⬡

d. Premolar teeth are _____ .

six in number ⬡ four in number ⬡ eight in number ⬡

B. Fill in the blanks.

a. The _____ cut the solid food into smaller bites

b. The last molars teeths are also known as _____.

c. An adult has _____ permanent teeth.

d. The chyme through food pipe is passed to the _____.

C. Write true or false.

a. Vegetables should be washed after chopping. _____

b. Fried food have excess fat. _____

c. Butter gives us energy. It has protein. _____

d. Kidneys filter the blood and extra water. _____

e. Food is not necessary for the survival. _____

D. Match the following.

a. Molars	(i) for grinding
b. Incisors	(ii) for crushing
c. Canine	(iii) for tearing
d. Premolars	(iv) for bitting

E. Answer the following questions.

a. Why is food necessary for us ?

b. Which are the main digestive organs of our body ?

c. Explain four types of teeth.

d. How can you preserve food ?

Keep a mango in a fridge and another mango outside.

What will happen to them after four days?

7 Food For Health

Learning Objective

- Malnutrition
- Deficiency Diseases

Let Me Answer

Write the name of disease that are caused by the deficiency of vitamin B.

There are large number of people in our country and even outside, who go hungry because they cannot buy food for themselves and their families. Such people suffer from many diseases, become weak and eventually die. Thus in order to stay healthy we must eat wholesome food and drink clean water.

There are many reasons for people in this world who are not able to eat the right kind of foods.

- Poverty is the main cause behind it. Poor people are not able to eat enough to meet their nutritional requirements.
- Certain groups of people do not eat certain kinds of food because their communities or religion forbid them to do so.
- Excessive cooking destroys the nutrition present in the food.
- Also the food gets spoilt when it is not stored properly.

Hungry poor peoples

Malnutrition

Hunger and disease are closely related. A person who does not get enough food to eat suffers from malnutrition or undernutrition. Deficiency of nutrients in the body results in deficiency diseases. A condition in which a body does not function properly is called a disease.

Thus, we should eat a diet that contains all the essential nutrients in adequate amounts. The different type of nutrients are proteins, carbohydrates, fats, vitamins, minerals and roughage.

A diet that contains all the essential nutrients in the right amount is called a balanced diet.

TEACHER'S NOTE

Bad quality of food causes different issues in our body. Allow the students to have a discussion regarding the same using different flashcards.

Here is a table that tells us about the essential nutrients, their sources and how do they help us.

Nutrients	Sources	How They Help Us?
Proteins	Pulses, milk, cheese, nuts, eggs and beans.	Proteins repair our body cells and help us to grow.
Carbohydrates	Bread, wheat, rice, sugar and potatoes.	Carbohydrates give us energy to do work.
Fats	Oil, ghee, butter and mutton.	Fats also give us energy.
Vitamins	Fresh fruits and vegetables.	Vitamins protect us from diseases and keep us healthy.
Minerals	Green leafy vegetables and fruits.	Minerals also protect us from diseases and keep us strong.
Roughage	Vegetables and fruits.	Roughage helps in excretion.

Deficiency diseases

Diseases which are caused due to deficiency of one or the other nutrient are called deficiency diseases.

Many children in our country look pale and sick. This is because they suffer from malnutrition. They do not get enough nourishment from their diet. Malnourishment occurs in children of the age of 1 to 5.

A child suffering from malnutrition may have diseases like Marasmus and Kwashiorkor. A child suffering from Marasmus has stunted growth and a weak body. The skin is dry and wrinkled and stomach disorders occur.

Kwashiorkor is another disease caused by the deficiency of carbohydrates and proteins in the diet of children. A child suffering from this disease has low appetite, swollen belly and reduced growth.

Night Blindness

Night Blindness is caused due to lack of Vitamin A in the diet. A person suffering from night blindness finds it difficult to see in dim light. The eyes become dull.

A child suffering from Marasmus

A child suffering from Kwashiorkor

To prevent this disease, a diet rich in green leafy vegetables, carrots, papaya, mango and milk should be taken.

Beri-beri

Beri-beri is caused due to deficiency of Vitamin B in our diet. It affects the nervous system. In this disease, loss of appetite occurs.

carrot

Milk

papaya

The skin of the hands become rough and dry. To prevent this disease, a diet rich in Vitamin B like unpolished rich, whole grains, milk, tomatoes, peas, should be taken.

Scurvy

Scurvy is caused due to deficiency of Vitamin C in the diet. In Scurvy, there is swelling and bleeding from the gums and pain in the joints. To prevent this disease, foods rich in Vitamin C like oranges, grapes, lemons, amla, tomatoes etc. should be taken.

Rickets

Rickets is caused due to deficiency of Vitamin D. In rickets, the legs become bow-shaped.

To prevent rickets one should take a diet rich in milk cheese and eggs.

Bow-shaped legs

Amla

Lemon

Orange

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Vitamin D is produced in our skin when it is exposed to sunlight.

Goitre

Deficiency of iodine in our diet leads to goitre. People suffering from goitre develop a swelling in the neck. To prevent this disease one should take iodized salt and eat a lot of seafood.

A person suffering from goitre

Anaemia

Anaemia is caused due to deficiency of iron in our diet. In such a condition, the haemoglobin content of the blood is reduced. An anaemic person gets tired easily. To avoid such a condition, one should take a diet rich in iron like apple, carrot, spinach, egg yolk, meat and other green leafy vegetables. Deficiency diseases are non-communicable diseases and are not transferred from a sick person to a healthy person.

An anaemic child

Summary

Deficiency diseases are caused due to deficiency of a particular nutrient in our body.

- Excessive cooking destroys the nutrients present in the food.
- Night Blindness is caused due to deficiency of Vitamin A.
- Beri-beri is caused due to deficiency of Vitamin B.
- Rickets is caused due to deficiency of Vitamin D.

Excercise

A. Tick (✓) the correct option.

a. Which nutrient gives us energy?

Fats ⬡ Carbohydrates ⬡ Both ⬡

b. Which disease is caused due to deficiency of Vitamin A?

Beri-Beri ⬡ Scurvy ⬡ Night Blindness ⬡

c. Which disease is caused due to deficiency of Vitamin D?

Night Blindness ⬡ Rickets ⬡ Scurvy ⬡

d. Which disease is caused due to deficiency of Vitamin C?

Anemia ⬡ Scurvy ⬡ Beri-beri ⬡

B. Fill in the blanks.

a. A diet which contains all the essential nutrients in the right amount is called a _____.

b. In rickets, the child becomes _____.

c. Anaemia is caused due to deficiency of _____ in our diet.

d. _____ is a kind of liquid present in the mouth.

e. Goitre is caused due to deficiency of _____.

C. Match the following.

a.	Night-Blindness	(i)	Vitamin C
b.	Scurvy	(ii)	Iodine
c.	Goitre	(iii)	Vitamin A
d.	Anaemia	(iv)	Iron
e.	Rickets	(v)	Vitamin B
f.	Beri-beri	(vi)	Vitamin D

D. Give two examples of each of the following .

a. Nutrients _____ _____

b. Deficiency diseases _____ _____

c. Foods rich in Vitamin B _____ _____

d. Foods rich in fats _____ _____

e. Ways of food preservation _____ _____

E. Answer the following questions .

a. What is a balanced diet?

_____

b. What is malnutrition?

_____

c. What is rickets? How is it caused?

_____

d. What is food preservation?

_____

e. How is pickling done?

_____

Make a nutritional chart for a week for yourself.

Revision Test Paper-II

(Based on Chapters 4 to 7)

A. Tick (✓) the correct option.

a. A deep hole is the well where water is available is called

well ⬡ handpump ⬡ tube well ⬡

b. Premolar teeth are –

six in number ⬡ four in number ⬡ eight in number ⬡

c. People of which region wear phirans?

Hilly region ⬡ Plains ⬡ Coastal region ⬡

B. Fill in the blanks.

a. School children wear _____.

b. An adult has _____ permanent teeth.

c. _____ is the main source of water.

d. In rickets, the child becomes _____.

C. Write true or false.

a. We don't have any special-dress for the bride. _____

b. Dhoti-kurta is a modern dress. _____

c. Enamel is the innermost layer of the tooth. _____

d. Food is necessary for the survival _____

D. Answer the following questions.

a. Which are the main digestive organs of our body?

_____

b. What is a balanced diet?

_____

MODEL TEST PAPER-I

(Based on Chapter 1 to 7)

A. Tick (✓) the correct option.

a. There is a skull in our

head ⬡ leg ⬡ hand ⬡

b. Who are subsistence farmers?

Small farmers ⬡ Dairy farmers ⬡

Commercial farmers ⬡

c. Step wells are also called

water wheels ⬡ boalis ⬡ piaos ⬡

d. People of which region wear phirans?

Hilly region ⬡ Plains ⬡ Coastal region ⬡

e. Which one is the sense organ of sight?

Ears ⬡ Eyes ⬡ Nose ⬡

B. Fill in the blanks.

a. _____ are good for health.

b. Big nails carry germs and causes various _____.

c. _____ is the main source of water.

d. The human body is made up of a large number of small units known as _____.

e. _____ farmers own a large plot of land.

C. Define the following terms:

a. Famine _____

b. Hybrid seeds _____

c. Irrigation _____

d. Fertilizers _____

e. Well _____

C. Write true or false.

a. Food is the basic need of our body. _____

b. Commercial farmers used tractors. _____

c. Rajasthani men wear an angarakha. _____

d. An infant has twenty pair of milk teeth. _____

e. Rope skipping is a good exercise. _____

E. Answer the following questions.

a. How can you preserve food?

_____

b. What is a baoli?

_____

c. What is the function of the digestive system?

_____

d. What is food shortage? How does it occur?

_____

e. What is food preservation?

_____

F. How is pickling done?

_____

8 Renewable and Non-Renewable Resources

Learning Objective

- Natural Resources
- Non-renewable Resources
- Some Renewable Resources
- Soil

Natural Resources

Nature is an abundant source of things which we use for our daily needs. When we are about to prepare food, we need food items like wheat flour, rice, vegetables, water, utensils, cooker and heat source like gas, etc.

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- A hydroelectric station uses the power of falling water to turn its generators. Water is stored in a reservoir behind a huge dam.

All these things are provided to us by nature. One can create nothing new on their own. We depend on nature for finished products or raw materials.

The materials which we use for making things that are provided by nature are called natural resources. Air, water, food, petroleum, soil, forest are all natural resources.

Let Me Answer

How we get hydroelectric power?

Different types of energy

TEACHER'S NOTE

Tell the students that this world is full of different resources. Make learners understand their various uses.

The natural resources which we cannot consume wholly, are called renewable resources. Nature provides renewable resources again and again periodically.
For example, river water is a renewable resource as the amount of water used by us is replaced by nature in the form of rain.
Food is also renewable resource as the farmers can grow more food for us.
Energy we get from sun (solar energy), energy we get from water (hydroenergy) and the wind energy are the examples of renewable sources of energy. Renewable sources of energy remain renewable until we use not more than required.


Wind farm

Most of the energy resources are non-renewable.
For example, coal, petroleum and natural gases are non-renewable resources of energy, as their amount is fixed and cannot be replaced or even if they can be replaced the pace is very slow.

Some Renewable Resources

The Sun

The Sun is a source of life. It gives heat and energy for the survival of all living things. It is a renewable resource.


Solar Energy

The Sun rays are absorbed by the huge solar panels to get its energy. This energy called the solar energy can be used for cooking food, to heat up water or room.
Solar cells convert sunlight into electricity. Solar energy is a good option to be used by the common people.

Water

We get water from many sources like rain, streams, ponds, sea, rivers and oceans. Water is used by us for many purposes.
Water is also used to generate electricity as it has energy. Electricity generated by

water is called hydroelectric power. It is generated by turbines by the falling water. This generates electricity.

Since amount of water used is replaced by rain, it is a renewable resource. But the extensive use of water cannot be replaced by nature alone. We should use it more carefully to save our future.

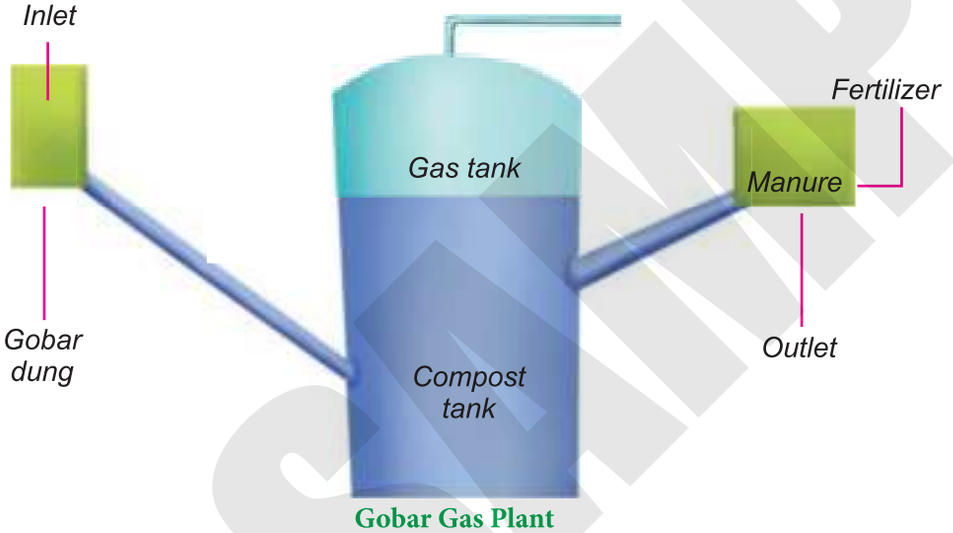
Hydroelectric Power

Wind

Wind energy is also used to generate energy and to do other mechanical works. Wind is a renewable resource because we will go on getting wind till nature exists.

Dung of animals

The dung of animals is also a natural renewable resource. You must have heard about gobar gas plant.



Gobar Gas Plant

Gobar gas plant is used to generate fuel for cooking and other purposes.

The residue of dung isused as fertilizer for the plants. It is the best manure for the growth of plants.

Non-renewable Resources

Coal

Coal is formed by the dead plants and trees buried under the ground for very long periods. The buried trees and plants get converted into coal by heat and pressure of the earth for a long time. This process takes several years. So, coal is a non-renewable resource. The extensive use of coal should be avoided because one day this natural resource may be finished from nature.

A drowned animal sinks into the mud.

An animal whose soft parts are rotten away, leaving the bones, layers of mud covered the skeleton.

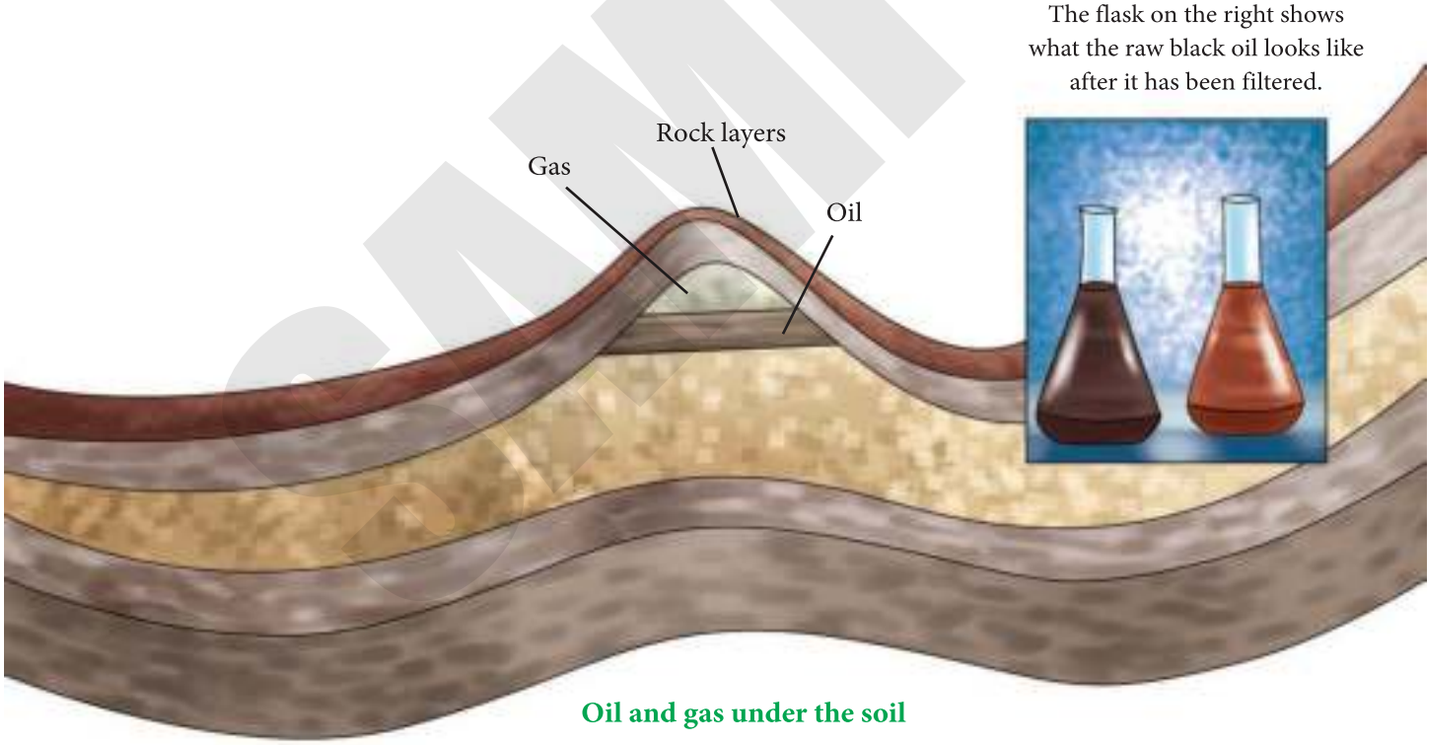
The skeleton and layers of mud pressed into rock in time.

Coal layer

Petroleum And Natural Gas

Petroleum and natural gas are formed over millions of years beneath the sea. The dead sea-organisms get buried into the layers of rocks. The heat and pressure transforms them to oil and natural gas.

The drilling of rocks for extracting oil and gas is an expensive process. The formation of petroleum and natural gas also takes millions of years. We should use petrol, diesel, kerosene, natural gases, etc. more wisely to face the future.



The flask on the right shows what the raw black oil looks like after it has been filtered.

Oil and gas under the soil

Metals And Minerals

Nature has provided us with valuable gifts of metals and minerals. These gifts should be used properly because these are non-renewable sources. Our household articles are made of different metals.

Some metals are abundant in nature, like aluminium, iron and magnesium while some metals are limited like, tin, silver, gold and platinum. So, we should use them more wisely.

Gold cake / bar

Mining ore plant

Aluminum sheet

Soil

infobits

• Sometimes, deadly poisonous gases are found in coal pits. Many miners have died inhaling such poisonous gases.

Soil is the most valuable resource on earth. Soil not only contains metals and minerals in its layers but also grows the plants, which are the food-producers. It supports plants as well as animals. It gives us food through the growth of plants. Life cannot be imagined in the absence of soil.

Formation of Soil

The weathering and breaking of rocks form the soils. The wind, water and living beings are the causes of breaking of rocks. Due to cooling, heating and drying, the rocks crack and break up into small pieces to form soil. The process of soil formation is a slow, long and continuous process.

The quality of soil is an asset of a nation. It adds wealth to the country.

Soil formation by breaking up of rocks

Uses of Soil

Our basic needs such as food, cloth, shelter, etc. are fulfilled by soil. Forests which grow in soil, bring rain and support various plant and animal activities. Large deposits of metals and minerals are present in the soil. Microorganisms present in soil make it fertile and help in maintaining the ecosystem. Soil is also used for making bricks, pots and porcelain, etc. Soil also stores water under the ground. This underground water is pure and free of germs, so it can be used for drinking purposes.

Soil used for making bricks

Soil used for making pots

Soil stores water under the ground which is used for drinking, cleaning, etc.

Soil Erosion

The carrying away of soil from one place to another by water or wind is called soil erosion.

Heavy rainfall in hilly areas causes soil erosion on the slope. In plains, flood-water carries away the soil. The storm and wind also carry away the soil from one place to another. the soil erosion leads to loss of upper layer of soil. It reduces the fertility of soil, by removing the layer of humus, in soil.

Soil Erosion by water

Man is equally responsible for the soil erosion. To meet his needs, man continuously cuts forests and trees. To acquire land, he changes grasslands into cemented land.

Soil erosion is also carried out by animals. Overgrazing by the animals make the soil bare. The grass holds soil in its long, continuous roots and thus checks the soil erosion.

Cattle Grazing

Soil Pollution

Man produces different types of wastes from mines, factories and homes. Most of the wastes are buried in land. This causes serious soil pollution.

The careless use of pesticides, insecticides and fertilizers also lead to soil pollution. The soil pollution causes infertility of soil and contamination of water as well as air.

Wood Cutting

Grassland changed into cemented land

Soil Conservation

The soil is being damaged by the activity of men. Thousands of tons of soil is carried away by wind or water due to the deforestation.

infobits

• Due to huge soil erosion, rivers are losing their depth.

The desert land is spreading speedily. The careful protection of the soil or to check soil erosion is called soil conservation.

Different methods are adopted to check soil erosion.

1. More trees should be grown at slopes of mountains.
2. Overgrazing by the cattle should be avoided.
3. Terrace-farming should be done in the hilly areas.
4. Strong embankments along river banks reduce soil erosion.
5. Trees should be planted in large numbers.
6. Proper use of fertiliser reduces the infertility of soil.

Summary

- Natural resources are the substances which we get from the nature.
- Renewable resources do not reduce even after using them again, e.g.riverwater, solar energy, the food grains, etc. which farmers can grow periodically.
- Non-renewable resources are in fixed amount. They are replaced very slowly, e.g. coal, petroleum and natural gases.
- Electricity generated by water is called hydroelectric power.
- Coal is formed by the dead plants and trees buried under the ground for a very long period.
- Soil is formed by the weathering and breaking of rocks.

Excercise

A. Tick (✓) the correct option.

a. Water is a
- non-renewable source of energy
- renewable source of energy
- hydroelectric power

b. Solar cells convert
- potential energy to kinetic energy
- heat energy into chemical energy
- sunlight into electricity

c. The metal which is not much abundant in nature is
- aluminium
- magnesium
- gold

d. Soil pollution is caused due to
- wood cutting.
- grassland changed to cemented land.
- waters from mine factories and homes in the soil.

B. Fill in the blanks.

a. The amount of water used by us is replaced by _____ .

b. Metals are extracted from the _____ .

c. _____ convert solar energy into electricity.

d. Most of the energy resources are _____ .

e. _____ is formed by breaking and weathering of rocks.

C. Write true or false.

a. Wool, we get from sheep is an example of renewable natural resource. _____

b. The plants causes soil pollution. _____

c. If the resource available to us, do not reduce, it is called non-renewable resource. _____

d. Substances which we get from nature are called natural resources. _____

e. Micro organisms present in soil make the soil fertile._____

D. Match the following.

a.	River water	(i)	Non-renewable natural resource
b.	Soil erosion	(ii)	Natural resource
c.	Natural gas	(iii)	Renewable natural resource
d.	Soil conservation	(iv)	Planting more trees
e.	Soil	(v)	Wind and water

F. Answer the following questions.

a. How dung of animals can be used?

b. How can we conserve soil? Write any four ways.

c. Why is it important to use coal and petroleum more wisely?

d. What is soil erosion? Name the agents that bring soil erosion.

e. Name various natural renewable resources.

Draw a picture of a gobar gas plant.

9

Natural Wealth

Learning Objective

- Natural Resources
- Importance of natural resources

Let Me Answer

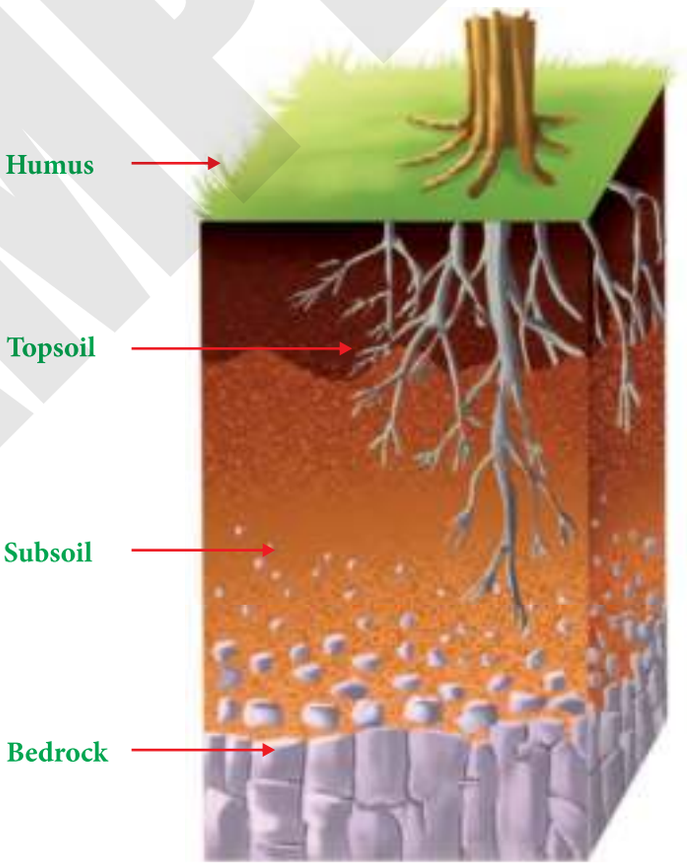
Which is your favourite monument and can you write the names of the rocks they are made up of ?

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



TEACHER'S NOTE

Describe the importance of natural resources and their uses to the students.

of animals and plants. Humus is necessary for growth of plants. Soil is found in layers. Nothing on Earth can grow 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 living in soil. Ants, beetles, millipedes, scorpions, earthworms etc, live in soil. Trees and other plants also grow in soil.

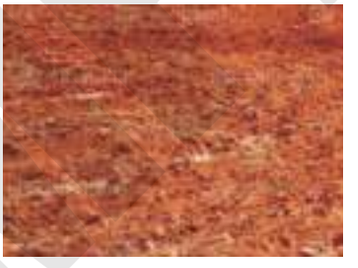
Types of Soil

Types of soil depend upon a combination of three : 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 of particles. 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.

Alluvial soil

Black soil



Red soil

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

Rocks that are formed by the cooling and solidification of molten rock. 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 layers get squeezed and stick together and make new rocks. Sandstone, gypsum and limestone are examples of sedimentary rocks.

Sandstone

Gypsum

Limestone

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.

Marble

Minerals which contain metals are called ores. Iron, copper, zinc, manganese, silver andgold are metals. Metals are

used for making machine parts, utensils, pillars, etc. Precious metals like golds and 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.

Deep Mining

Fossil Fuels

Millions years ago, plants and animals died and were burried 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 rocks.

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.

Fossils

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.

Coal-mine

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.

Petroleum Refinery

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 type 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.

Solar Heater

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

Summary

- Natural resources are valuable gifts of nature for us.
- Soil is the top layer of Earth on which the plant grow.
- Minerals are substances that are found naturally under the Earth.
- Coal, petroleum and natural gas are called fossil fuels.
- Sun is the ultimate source of all type of energy.

Excercise

A. Tick (✓) the correct option.

a. How many types of soil are there?

Eight ⬡ Seven ⬡ Four ⬡

b. Which are fossil fuels?

Coal ⬡ Petroleum ⬡ All ⬡

c. How many type of rocks are there?

Three ⬡ Four ⬡ Five ⬡

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

Glass ⬡ Marble ⬡ Clay ⬡

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 following.

a.	Organic part	(i)	Marble
b.	Metamorphic rocks	(ii)	Underwater
c.	Natural gas	(iii)	Methane
d.	Petroleum	(iv)	Humus
e.	Clay	(v)	Rock oil

A. 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.

10

Natural Calamities

Learning Objective

- Natural disasters
- Help in times of disasters
- Consequence of natural calamities
- Dealing with natural disasters
- First-Aid

Natural Disasters

Many times we hear about events that cause damage to human life and property. They may happen when we are just not prepared for them. We have no control over them. Such situations which pose immediate threat to our life and property are called **emergencies**. When such emergencies are caused by natural factors, these are called **natural calamities** or **natural disasters**. **Earthquakes**, **tsunamis**, **cyclones** and **floods** are some common natural disasters. Let us know more about some of the natural calamities and their effects.

An earthquake is caused by sudden movements below the Earth's surface. When large mass of hot, liquid rocks are pushed under the Earth's surface, an earthquake occurs. Some earthquakes are very mild and cannot be felt, while some are so strong that they cause extensive damage to life and property.

Earthquakes cause great damage

Let Me Answer

What should one do if there is an earthquake?

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- Study of earthquakes is called seismology.

TEACHER'S NOTE

Guide learners about different calamities and how to protect ourselves by giving first aid.

What should one do if there is an earthquake?

- Keep calm. Walk out of the building and move to an open area.
- Do not enter a building immediately after the earthquakes stops.
- Do not stand near windows, mirrors, hanging pots during or immediately after an earthquake.
- Stay away from electric poles and trees.

Volcano

Volcanic Eruptions

A volcano occurs when hot molten rock under the Earth's surface is forced out of rocks from the earth's crust. The molten rock is called lava. The hot lava causes damage to everything around it.

Cyclone

Cyclones

A cyclone is a very strong rotating windstorm, accompanied by heavy lashing rain. Cyclones are very common in the coastal regions of India. The strong winds and rain cause loss to live and property.

What should you do in case of a cyclone?

- Listen regularly to the weather forecast if you live near a coastal area.
- Keep a first-aid kit ready.
- Be careful about snake and insect bites.
- Check for gas leaks after the cyclone.

Tsunamis

Tsunamis are huge sea waves caused by an earthquake or a volcanic eruption under the sea. The waves travel with great speed and can be as high as 50 feet. The tsunami that occurred in Japan, in March 2011, made many people homeless and caused great destruction.

Tsunami

What should be done if there is a tsunami?

Just before a tsunami strikes, the sea often recedes from the coast. If you see such a thing, run away from the coast.

If you live in a coastal area and feel an earthquake quickly run to a higher ground.

Landslides

Landslides occur in hilly areas when big rocks, stones and mud slide down the mountain slopes towards valleys. Landslides are more common in the rainy season. The Himalayas are very prone to landslides.

Landslide

Floods

When the water level in rivers and lakes rises due to heavy rainfall and flow to the nearby land, it causes floods. Floods cause damage to the crops, animals, property and human life. When flooded water recedes, epidemics like malaria and cholera break out.

Flood

Droughts

A drought is a long dry spell, with little or no rainfall. It causes severe damage to the soil, crops, animals and even people. It usually results in a water shortage that seriously hampers human activities. Droughts are common in the desert regions of Rajasthan. Crop failures occur due to drought, resulting in a famine. Famine is a condition when people die due to shortage of food.

Drought

What should we do in case of a drought?

- Take a bath using a bucket.
- Do not waste water in any way.
- Do not leave the tap running unnecessarily.
- Do not throw away water that has been used for plants or to clean the floors.

Wildfires

These are destruction fires in forests and other areas covered by vegetation. Uncontrolled fire can destroy forest, vegetation and animal species.

Wildfire

What should be done in case of a wildfire?

- First of all, inform fire brigade so that the situation can be controlled.
- Create a safety zone around the house that separates your home from plants and bushes that can burn easily.
- Clear dry bush and grass from your property because it can act as fuel for a fire.

Consequences of Natural Calamities

Natural calamities have an adverse effect on our lives and property. There is loss of life and property. Some people become handicap for a lifetime. Dams and roads are damaged. Many people become homeless. Services like electricity, transport, water supply etc., are disrupted.

Help in Times of Disasters

The government provides relief to the people during times of emergencies. Besides the government, many national and international non-governmental organisation (NGOs) and the United Nations Disaster Management Team (UNDMT) also provide aid and support to the affected people. Some other organisations that provide help are

United Nations Children's Fund (UNICEF)

Indian Red Cross

First Hand Foundation

The armed forces supply essential items like food, water, blankets, clothes etc., to the people in disaster site.

- The police helps to maintain law and order.
- Policemen, firemen, soldiers and volunteers help in rescue work. They help to remove people trapped under the rubbles of collapsed buildings.

Your Role

Join hands with NGO and do your bit.

Collect essential items like food, water, clothes, etc.

Encourage the people in your neighbourhood to contribute in cash or kind.

Emergency Kit

Every family should have an emergency kit in their home. If there is an earthquake or tsunami for instance, there could be a power cut or the water could get polluted. You might get stuck in your home for several days because of a storm or a flood. Having an emergency kit ready could help if anything like this happens.

Emergency Kit

The emergency kit should contain the following things

- Food and drinks
- Clothes
- Other things like torch and medicines

First-Aid

First-Aid is the immediate help given to a wounded or injured person before the proper medical aid arrives. Timely first-aid can save one's life.

Tips while giving First-Aid

- Stay calm.
- Act quickly.

- Do what you can or call an elder.
- Do not allow people to crowd around the victim.

In case of fire what should we do?

Raise an alarm and inform the fire brigade by calling on 101.

Rush for the nearest available exit.

- If caught in the fire don't run or panic. Stop, drop and roll on the fire.
- Turn off all electrical appliances if possible.
- Use a fire extinguisher.
- If the fire is caused by kerosene or petrol, never throw water over it. Throw sand or mud on the fire instead.

Common First-Aids

Burns

In case of minor burns, apply cold water or ice on the burnt part. Apply any antiseptic cream to get relief from the pain.

In case of major burns, take the victim to the doctor immediately.

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- In case of fire do not use elevators or escalators rather use stairs.

Nose bleeding

In case of a nose bleed, make the patient sit upright with his/her head back. Pinch his nostrils and ask him to breathe through his mouth for about 10 minutes.

Apply an ice-pack to the nose of the patient.

Sprain

A sprain is a twist in a joint. In case of a sprain

- Put on elastic bandage or crape bandage around the sprained area to immobolise it.
- Apply a pain relieving ointment like 'Iodex' on the sprained area.

Fracture

A fracture is a break or crack in a bone. In case of a fracture

- Do not move the fractured part.
- Tie a splint to the broken bone.
- A sling can be used to support a fractured arm.
- Take the victim to the doctor.

Fainting

Make the victim lie down with his head a little lower than his body.

This will make extra blood reach his/her brain. Do not crowd around him/her.

Let her/him breathe fresh air.

Wounds and cuts

In case of wounds and cuts, one needs to be very careful as germs enter our body through these uncovered cuts and wounds.

Follow these first-aid tips in case of cuts and wounds.

- Wash the wound with water.
- Apply any antiseptic lotion with cotton gently on the affected part.
- Cover the wound with a clean bandage.
- If the wound or cut is deep, take the victim to the doctor.

❖ If the cut is due to any metal object, the victim requires an anti-tetanus injection.

Summary

- Situations that pose immediate threat to our life and property are called emergencies.
- When such emergencies are caused by natural factors, these are called natural calamities disasters.
- Earthquakes cause great damage to life and property.
- A cyclone is a very strong rotating windstorm accompanied by heavy lashing rain.
- Landslides occur in hilly regions.
- Tsunamis are huge sea waves caused by an earthquake or a volcanic eruption under the sea.

Excercise

A. Tick (✓) the correct option.

a. Which of these is caused by sudden movement below the Earth's surface?

Tsunami ⬡ Drought ⬡ Earthquake ⬡

b. Raise an alarm and inform the fire brigade by calling _____.

105 ⬡ 101 ⬡ 102 ⬡

c. The molten rock is called _____.

drought ⬡ lava ⬡ cyclone ⬡

d. Which is a long dry spell with little or no rainfall called?

Cyclone ⬡ Drought ⬡ Volcano ⬡

B. Fill in the blanks.

a. An earthquake is caused by sudden movements below the _____ .

b. A _____ is a very strong rotating windstorm accompanied by heavy lashing rain.

c. A _____ is a long dry spell, with little or no rainfall.

d. In case of _____ , apply cold water or ice on the brunt part.

C. Answer the following in short.

a. What is First-Aid?

_____

b. What is the use of an emergency kit?

_____

D. Answer the following questions.

1. What are natural calamities?

_____

2. What is an earthquake?

_____

3. What is a drought?

_____

4. What is a cyclone?

_____

What first-aid will you give in these situations?

_____

_____

_____

_____

_____

_____

_____

_____

_____

Revision Test Paper-III

(Based on Chapters 8 to 10)

A. Tick (✓) the correct option.

a. How many type of rocks are there?

Three ⬡ Four ⬡ Five ⬡

b. The molten rock is called

Drought ⬡ Lava ⬡ Cyclone ⬡

B. Fill in the blanks.

a. _____ support life on the earth.

b. Metals are extracted from the _____.

c. A _____ is long dry spell, with little or no rainfall.

d. Soil is formed from the _____.

C. Answer the following short.

a. What is First-Aid? _____

b. What is the use of an emergency kit? _____

D. Write the full form of the following.

a. UNDMT – _____

b. UNICEF – _____

E. Answer the following questions.

a. What is soil erosion?

_____

b. What are fossil fuels?

_____

11 Globe and Map

Learning Objective

- Globe
- Limitations of a globe
- Map
- Limitations of a map
- Languages of maps
- Directions on the map

The Earth is the only planet on which the existence of living beings has been confirmed. Although the possibilities of life on the Mars is being explored, we are yet to achieve important breakthrough in this regard. We live on the surface of the Earth.

A Globe is a small model of the Earth. It shows us the true shape of the Earth. It is an exact model of the Earth but it is not very convenient to handle. You can not carry a globe everywhere you go. So it becomes important for us to have something that helps us in locating the places.

Globe

Limitations of a Globe

- It occupies a lot of space.
- It lacks portability. In other words, it is difficult to transport it from one place to another.
- It does not show detailed information.
- It cannot be used in books.

Let Me Answer

Name the smallest model of the earth.

In order to overcome these drawbacks, map came into being.

Map

Map is made up by cutting and opening the globe on the two poles.

A map is a drawing of the surface of Earth on a flat surface, like paper. Since a map is made on a flat surface, it is very handy. A map made on a paper can be carried in pockets or rolled and kept with you while travelling. Because of the wide utility of maps, it has become very popular. The map has many advantages over a globe. It is

TEACHER'S NOTE

Allow the students to have an open discussion about different continents and countries with the help of a map.

easy to locate a place using a map. It can show even the smallest area in great detail. The globe shows the entire Earth.

The use of map makes possible to see the whole of Earth's surface at one time. But it also had some limitations.

Limitations of a Map

- It is not fully flat so cannot be used in books.
- To show all the features of the Earth on a single sheet is not possible for it.
- Surface of the Earth is curved and it is not easy to show curved surface of the Earth.
- It lacks accuracy.
- Despite of many limitations, maps are useful in many ways.

They can be used to show whole of the Earth or small part of Earth's surface.

Separate maps can be made for continents, countries, cities or even local neighbourhood.

Size of map varies according to location covered. It is easily portable.

Atlas

A collection of a number of maps in the form of a book is called an Atlas.

Let us see how a map uses some special elements that help us to locate the place correctly.

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A person, who makes maps is called Cartographer and the skill of making maps is called cartography.

India

Language of Maps

Language of maps incorporates the colours, signs, symbols, directions and scales that are used to depict various locations and their details.

Directions on the map

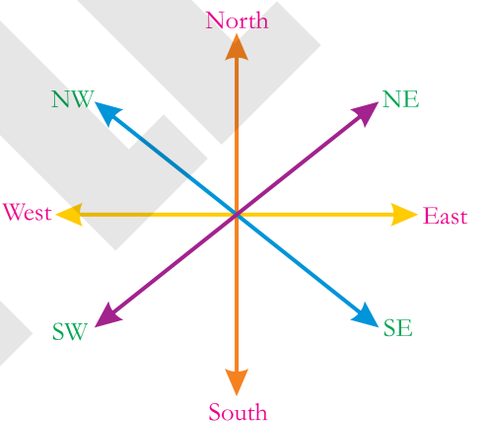
There are four major directions in a map. They are — the North, the South, the East and the West.

All countries in world have adopted strict uniform ways of naming these directions.

Directions can be easily studied with the help of a map.

See the map of India given alongside

- Top of the map is known as North.
- South is always directly opposite to North i.e towards the bottom of the map.
- To the right side is East.
- To the left side is West.



In India's Map

- Jammu and Kashmir is in the North.
- Tamil Nadu is in the South.
- Gujarat is in the West.
- Assam is in the East.

Sub directions

Apart from major directions, there are four sub-directions

1. Between North and East lies North-East.
2. Between North and West lies North-West.
3. Between South and East is South-East.
4. Between South and West is South-West.

In India, Meghalaya, Mizoram, Manipur, Assam, Tripura, Arunachal Pradesh, etc.

India

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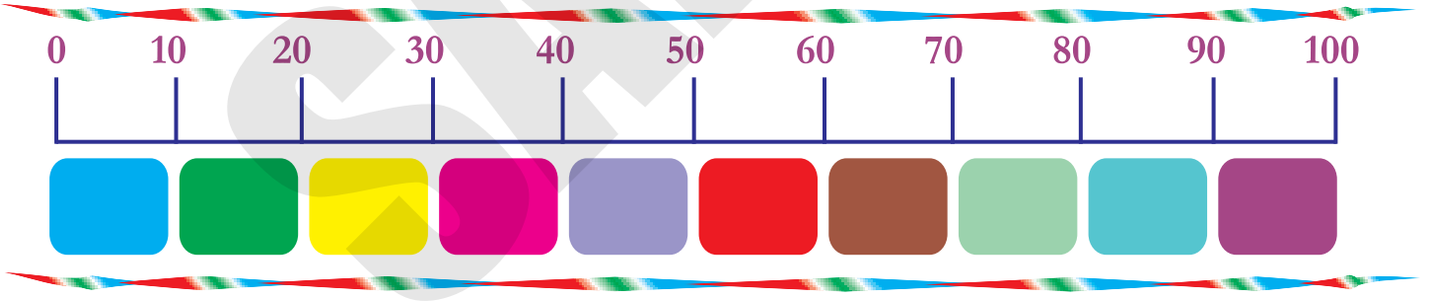
Dynastio Chinese culture and some other Central Asian cultures view center as the fifth direction.

are the north - eastern states. These eight directions and sub-directions help us in finding the position of a place. Everyday, Sun sets in the west. So, to know the direction if you go to a new place, in the morning stand facing towards the Sun. Imagine that your face is pointing towards the Sun. The direction at which the face will point will be East. The back will be pointing towards the West. Your right-hand will point towards the South and your left hand will point towards the North direction. The map show the basic system of the direction.

Scale and Distance

A map is a small representation of the big area or region shown by it. So we can not draw the actual distance of the place on a small piece of paper. To write correctly the distance of the place on a map, a scale is used. Every map is used to represent distance in its own way. So every map gives the measure of distance in the form of a scale in the corner of the map scale is the relation between the actual size of the place and its size on a map. For example, some maps use a scale of 1 cm = 100 km.



This means one centimetres on a map is equal to 100 kilometres on the ground. Distance can also be shown by darkening a straight line on a map dividing it into equal parts. By taking the first point on the line as zero, the subsequent points can be measured as multiples of 100. That is, the kilometre and the other points can be used to represent distance of the place from the first point.

Colour Scheme

Colours are very important components of a map. Different types of colours are used to show different features of a map. The unevenness of land is shown using various colours.

1. Green is used to show low land or plains.
2. Yellow or light brown are used to show land higher than the low lands or plains.
3. High land are shown using deep brown.
4. Shades of blue are used to show water.
5. Pale blue shows shallow waters and deep blue shows deep water.

These maps give a key to the colour in box indicating the depth or height from the sea-level. All maps use the same colours.

The colours are universally used commonly, so that anybody who knows the language of colours can understand it.

Signs and Symbols on a Map

Things are represented by using signs and symbols. Look at the political map of India. The cities are shown by using a circle and the double circles show a city which is also a capital.

Dotted lines or dashes show the boundary of the land. Similarly, other places as railways, etc. are also marked by using symbols. There is a key which tells us what symbol stands for which thing as you refer to the map more often. You will learn each symbol and understand it even when there is no key with the map. So, by knowing the language of the map, understanding the direction, the scale, the colour the signs and symbols. We can learn various things about a place which the map represents.

Summary

- A globe is a small model of the Earth.
- A map is a drawing of the surface of the Earth on a flat surface.
- There are four major directions in a map. Colours are very important component of a map.
- Things are represented on a map by using signs and symbols.

Excercise

A. Choose the best alternative.

a. The book of maps is called

atlas ⬡ guide ⬡ dictionary ⬡

b. Towards downward in the map is

north ⬡ east ⬡ south ⬡

c. In which direction is Jammu and Kashmir located?

north ⬡ east ⬡ south ⬡

B. Fill in the blanks.

a. A book of maps is called an _____ .

b. The North shows _____ in a map.

c. Maps use special _____ to give us a lot of information.

d. The bottom in map shows _____ direction.

C. Write true or false.

1. We use maps to help us in locating the places. _____
2. A globe is a map. _____
3. Map has its own language which is followed universally. _____
4. Roads, railways, temples etc., are shown using symbols. _____
5. Colour is used only to make the map beautiful. _____

D. Match the columns.

a.	Scale on the map	(i)	Position
b.	Direction	(ii)	Distance
c.	Colours in the map	(iii)	Features of the land
d.	Symbols on the map	(iv)	Book of maps
e.	Atlas	(v)	Dotted lines or dashes

E. Answer the following questions.

a. How does a map help us?

b. How does the directions and sub-directions on the map help us to locate the places?

c. What is a scale ? What does it tell us on a map?

d. What does the colours in a map tell us? Name five colours used in the map.

e. Name five common symbols and signs used in map.

A. Take a world map. Colour it according to the landscape of the place.

B. Mark the important cities of the world in it.

12 Forest and Tribal Life

Learning Objective

- Importance of forest • Tribes of India • Sacred groves • Deforestation
- How can we protect our forests?

A forest is a large area of land that is covered with trees, shrubs, climbers and creepers.

Importance of Forests

Forests have always been of great importance to man since early times. Prehistoric people obtained food from wild plants and by hunting animals. They lived in forests that provided them with all the basic needs.

Today, we get wood, latex to make rubber, gum, oils etc., from the forests. Forests help to conserve the soil as roots of trees do not allow the soil to erode. Forests keep the air clean by absorbing carbon-dioxide and releasing oxygen.

Let Me Answer

What is the relation between the the tribes and the forest.

Tribes of India

There are many tribes in India. Some of them are

Santhals

Mundas

Garos

Nagas

Dependence of Tribal People on The Forest

The tribes of India are very much dependent on the forests for their livelihood.

TEACHER'S NOTE

Allow the students to have an open discussion about different continents and countries with the help of a map.

So they think forests are sacred and will never harm them.
They get wood, fruits, seeds, honey, wax and herbs from the forests.
They make baskets and toys from bamboo and cane. They know the art of making perfumes from the wild flowers. Some of them specialize in making plates and bowls from sal leaves. They sell these products in the local markets called *haats* to earn their living.

Tribal people making baskets, bowls and plates of leaves.

A tribal haat

Sacred Groves

An area in forest, which contains trees and medicinal plants that are on the verge of extinction are called sacred groves.
These groves are sacred as they are said to be associated with some deities. Tribal people protect these groves and do not allow people to cut trees. Hence, they help in the conservation of forests.

Conservation of forest

Deforestation

The cutting down of trees on a large scale is called deforestation. It is either done to clean lands for cultivation or to grow towns. The trees are also cut down to obtain wood.

But deforestation has many adverse effects. As roo of trees bind the soil and prevent soil erosion,

Deforestation

when deforestation has occurred the soil becomes loose and easily gets eroded. It has made animals homeless. It has led to natural calamities like landslides and floods. It has made the survival of tribal people very difficult. It affects the climate adversely.

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Deforestation results in global warming.

How can we protect our forests?

Our government has set up many national parks and wildlife sanctuaries in almost every part of our country of protect the trees from being cut down. It has also launched many programmes like **Social Forestry Movements** and **Vanamahotsava** to plant more trees.

Vanamahotsava is a week long festival that is organised every year in the month of July across India. It was initiated by K.M. Munshi in 1950.

Chipko Movement

In 1973, villages in the Alaknanda valley in Uttarakhand protested against the cutting down of trees.

The woman hugged the trees and refused to let go till the tree-cutters left the place. This activity became popular as the Chipko Movement. Sunderlal Bahuguna has been the leader of the Chipko Movement.

Women hugging a tree during the Chipko Movement.

Sunderlal Bahuguna

For the **Bishnois** of Rajasthan, preservation of animals and vegetation is a religion. Bishnois women and local villagers once hugged trees when the soldiers of Maharaja Abhay Singh of Jodhpur came to chop trees.

Summary

- A large area of land, thickly covered with trees, bushes, creepers and climbers is called a forest.
- We get many things from the forest like wood, wax, gum, fodder, fruits and medicine.
- Many Indian tribes depend on forests for their livelihood.
- The cutting down of trees on a large scale is called deforestation.
- We all need to make efforts to protect our forests.

Excercise

A. Tick (✓) the correct option:

a. What do we get from forests?

Wood ⬡ Wax ⬡ Both of them ⬡

b. The cutting down of trees on a large scale is called

afforestation ⬡ deforestation ⬡ none of these ⬡

c. Which movement is related to hugging the trees?

Vanamahotasava ⬡ Chipko Movement ⬡

Social Forestry Movement ⬡

B. Fill in the blanks.

a. The cutting down of trees on a large scale is called _____ .

b. Our _____ has set up many national parks and wildlife sanctuaries in almost every part of our country.

c. _____ has been the leader of the Chipko Movement .

d. Forest keep the air clean by absorbing _____ and releasing _____ .

e. Deforestation results in _____ .

C. Answer the following questions.

a. How are forests important?

_____

b. How are the tribes of India dependent on forests?

c. What are sacred groves?

d. What is deforestation? What are its effects?

e. What was Chipko Movement?

Write a paragraph on 'Sunderlal Bahuguna' and what all he did to save our forest wealth.

Revision Test Paper-IV

(Based on Chapters 11 to 13)

A. Tick (✓) the correct option.

a. The book of maps is called

atlas ⬡ guide ⬡ dictionary ⬡

b. What do we get from forests?

Wool ⬡ Wax ⬡ Both of them ⬡

c. Ghagra - choli is the popular dress in

Madhya Pradesh ⬡ Gujrat ⬡ Haryana ⬡

B. Fill in the blanks.

a. There are _____ languages spoken in Indian.

b. The cutting down of trees on a large scale is called _____ .

c. The famous Sun temple is in _____ .

d. Dance and music are _____ heritage.

C. Write true or false.

a. Alpana is a type of drawing. _____

b. Map has its own language which is followed universally. _____

c. Kathak is a folk dance of Uttar Pradesh. _____

D. Answer the following questions.

a. How does a map help us?

_____

b. What is the oral tradition?

_____

MODEL TEST PAPER-II

(Based on Chapter 8 to 13)

A. Tick (✓) the correct option.

a. Digestion of food starts in our

mouth ⬡ stomach ⬡ none ⬡

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

Glass ⬡ Marble ⬡ Clay ⬡

c. Raise an alarm and inform the fire brigade by calling

105 ⬡ 101 ⬡ 102 ⬡

d. Towards bottom in the map is –

North ⬡ East ⬡ South ⬡

e. Where are the janta and Ellora caves situated?

Maharashtra ⬡ Orissa ⬡ Madhya Pradesh ⬡

B. Fill in the blanks.

a. The Gita is a part of _____ literature.

b. Deforestation results in _____.

c. Most of the energy resources are _____.

d. Maps use special _____ to give us a lot of information.

e. A _____ is a long dry spell, with little or no rainfall.

C. Answer the following in very short.

a. What is a cyclone? _____

b. What is natural gas? _____

c. Name five common symbols and signs used in map. _____

d. Name any three religious literature. _____

e. Mention the two styles of music still practiced in India. _____

D. Write true or false.

a. Gypsum is a sedimentary rock. _____

b. The plants causes soil pollution. _____

c. Colour is used only to make the map beautiful. _____

d. English is the common language spoken in India. _____

e. Roads, railways, temples etc., are shown using symbols. _____

E. Answer the following questions.

a. What is a cyclone?

_____

b. How does a map help us?

_____

c. How are the tribes of India dependent on forests?

_____

d. What are natural calamities?

_____

e. Name various natural renewable resources.

_____

F. Write a paragraph on Sunderlal Bahuguna and what he did to save our forest wealth.

G. Write down the process of soil formation.