GETTING AHEAD IN SCIENCE

4

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ULTRA Learning™

Contents

CHAPTER 1

Food : Our Basic Need

What We Have Learnt?

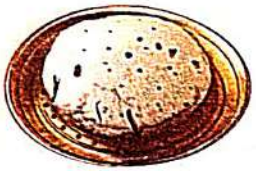
- Food
- Different kinds of food
- Meals in a day
- Good food habits

What We Will Learn?

- Components of food
- Balanced diet
- Preservation of food
- Need for exercise and games

Get Set GO!

Match the following food items with the types of nutrients they contain.

1. 
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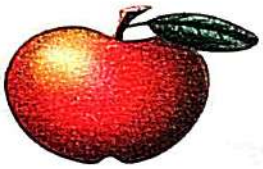
3. 
4. 

(a) Vitamin (b) Carbohydrate (c) Iron (d) Protein

All living things need food. They cannot survive without food. Food gives them energy. This energy helps them in doing various activities. If we do not eat for a long time, there is very less energy left in our body. Our body has to work all the time so it tells us that it is in need of food.

COMPONENTS OF FOOD

In order to meet the requirements of our body we need to eat food that contains nutrients. Nutrients provide nourishment to our body. These nutrients help us in many ways. They help us in repairing our body. They give us energy and protect us from many diseases.

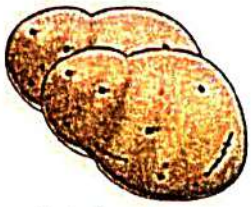
Carbohydrates, proteins, fats, vitamins and minerals are the nutrients that should be present in our diet.

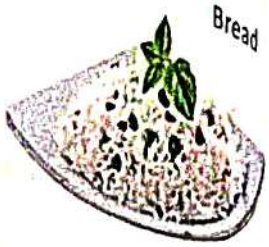
Carbohydrates

Carbohydrates give us energy to work, play and think. Food which is rich in carbohydrates is called energy-giving food. Carbohydrates are the most common component of food. Bread, rice, sweets, potatoes, cereals, etc. are rich sources of carbohydrates.


Sweet


Bread

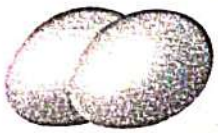

Potatoes


Rice

Food containing carbohydrates

Proteins

Proteins help us to grow and repair the different parts of our body. Food rich in proteins is called body-building food. Proteins make our muscles strong. They help to grow and rebuild the tissues. So, growing children need a lot of protein. Milk, cheese, eggs, beans, meat, pulses are protein rich foods. Soyabeans have highest proteins in them.


Egg


Meat


Cheese


Beans


Pulses


Milk

Food containing proteins

Fats

Fats are also energy providing nutrients. They give us more energy than carbohydrates. Fats give energy to the cells. Fats keep our body warm. Ghee, butter, oil, egg yolk, nuts etc. have fats in them. Our body needs very little fat.

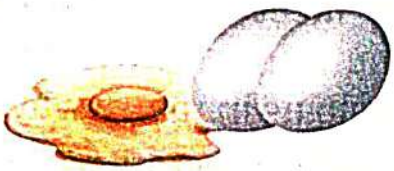
Knowledge ZONE

Consumption of excess fat is harmful. It make us look fat and leads to many diseases.


Ghee


Butter


Nuts


Egg yolk


Oil

Food containing fats

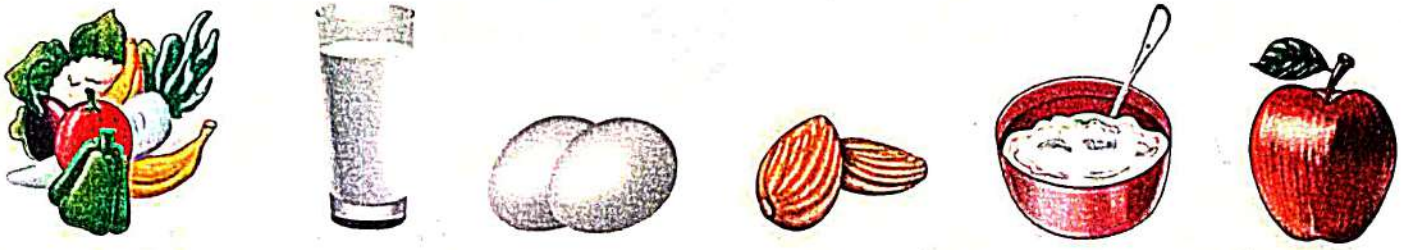
FUN Activity

21st CS Creativity

Take a pack of branded fibrous biscuits and note down its nutrient's value. Write their fats, proteins, carbohydrates, minerals content etc.

Vitamins And Minerals

Vitamins and minerals are also important nutrients of our food. Our body needs a small quantity of vitamins and minerals. Vitamins and minerals protect us from diseases. Fruits and vegetables, milk, eggs, curd, almonds, apples, jaggery are vitamin and mineral rich foods. Calcium, iron, potassium, iodine and common salt are some minerals. Calcium makes our teeth and bones strong. Milk, curd, almond, cheese and paneer are calcium rich foods.



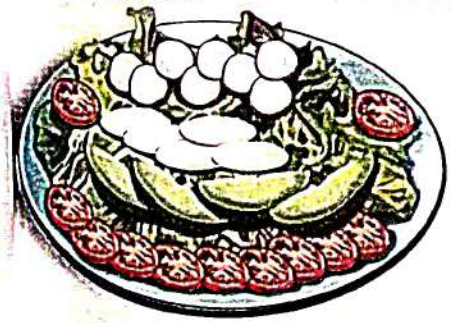
Vegetables Milk Egg Almonds Curd Apple

Food containing vitamins and minerals

Iron helps to form blood in our body. Green leafy vegetables, apples, carrots, beetroot are iron rich foods. Lack of iron in the blood causes anaemia.

Knowledge ZONE

Lack of iodine causes goiter and iodine factor is controlled by the common salt.



Food rich in roughage

Roughage

Food that contains fibres is called roughage. Roughage is essential for digestion of food. These help to remove waste materials out of our body. They do not have any nutrients. Most of the fruits, vegetables and seeds have fibres. Salad is a good roughage.

Water

All living beings need water. It is an important nutrient of the food. It helps the body to dissolve, digest and absorb the food. It regulates our body temperature. It also helps in excretion. Our body has almost 70% of water. We should drink 8 to 10 glasses of water every day.

BALANCED DIET

A diet that contains proper amount of all the nutrients, roughage and water in right proportions required for good health is called a balanced diet.

Balanced diet

PRESERVATION OF FOOD

All food items get spoiled at room temperature after some time. If we leave the bread for some time, we see some green patches on bread. These green patches are due to the germs. Such foods give foul smell and bad taste. These foods can make us unhealthy.

Following are some ways of preserving food :

Word Bank

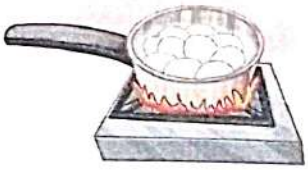
Diet : The kind of food that we eat

Proportion : Amount

Drying

Pickling

Refrigerating



Boiling

Bottling

NEED FOR EXERCISE AND GAMES

Exercise and games should be included in our daily routine activities. They help us to digest food. But nowadays, children are not interested in doing exercise or playing outdoor games. It is not good for their health. They must take part in outdoor games to stay healthy, strong and active.

PUT ON YOUR THINKING CAP

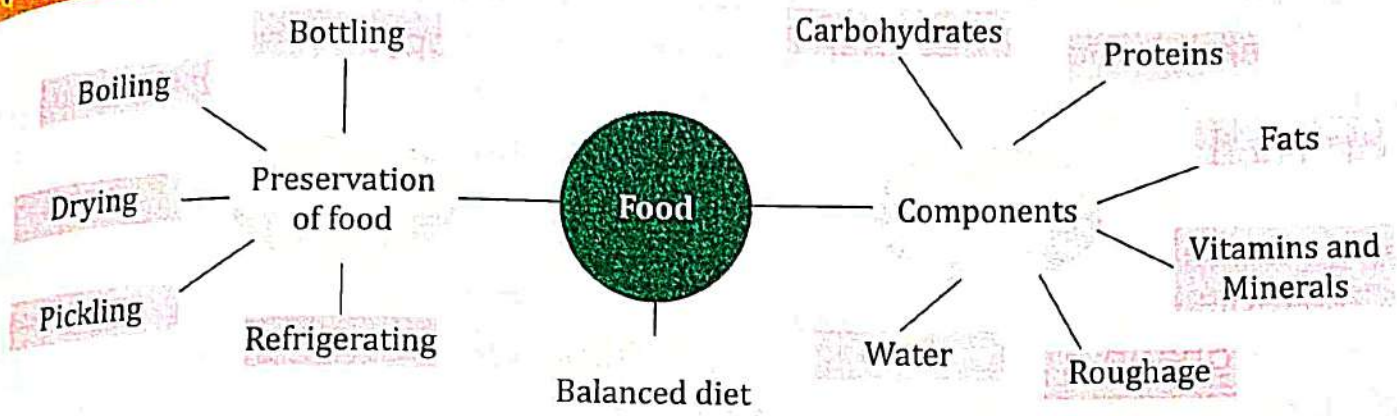
Lack of what causes the diabetes? And what kinds of diabetes are found?

QUICK TEST

Fill in the blanks with the correct words.

1. ..... help us to grow and repair the different parts of our body.
2. ..... are also energy providing nutrients.
3. All living beings need ..... .

MIND MAP



EXERCISES

I. Objective Type Questions

A. Tick (✓) the correct option.

1. What does food give us?
   (a) Energy ☐ (b) Money ☐ (c) Both (a) and (b) ☐
2. How many nutrients of food are there?
   (a) Five ☐ (b) Four ☐ (c) Six ☐
3. Which of the following is a rich source of carbohydrate?
   (a) Butter ☐ (b) Ghee ☐ (c) Potato ☐
4. What do the growing children need a lot?
   (a) Mineral ☐ (b) Protein ☐ (c) Fat ☐

B. Fill in the blanks with the correct words.

1. The substances of food are called ..... .
2. Food rich in ..... is called body building food.
3. Lack of iron in the blood causes ..... .
4. Our body needs a ..... quantity of vitamins and minerals.
5. Food that contains fibre is called ..... .

State whether the following statements are True or False.

1. All the activities of our body need food. ☐
2. Bread, chocolates, sweets, potatoes, cereals, etc. are rich sources of carbohydrates. ☐

3. Fats are not energy providing nutrients.
4. We should drink 12 to 14 glasses of water every day.
5. Exercise and games keep us healthy and happy.

D. Match the following.

1. Food	(a) strong bones
2. Calcium	(b) salad
3. Iron	(c) energy
4. Apple	(d) blood formation
5. Roughage	(e) vitamin A

II. Very Short Answer Type Questions

E. Write two examples for each of the following.

1. Carbohydrates-rich food items ....
2. Protein-rich food items ....
3. Calcium-rich food items ....
4. Iron-rich food items ....

F. Write one word for the following.

1. The diet that contains all the nutrients in the right proportion .....
2. Food items needs by our body to build muscles and grow .....
3. They give us energy and protect us from many diseases .....

III. Short Answer Type Questions

G. Answer the following questions briefly.

1. What are nutrients?
2. Why are proteins needed by our body?
3. Why should we drink plenty of water?
4. Name any two minerals needed by our body.

IV. Long Answer Type Questions

H. Answer the following questions in detail.

1. Write the different components of food.
2. How does roughage help us?
3. What is a balanced diet?

CREATIVE CORNER

HOTS Question

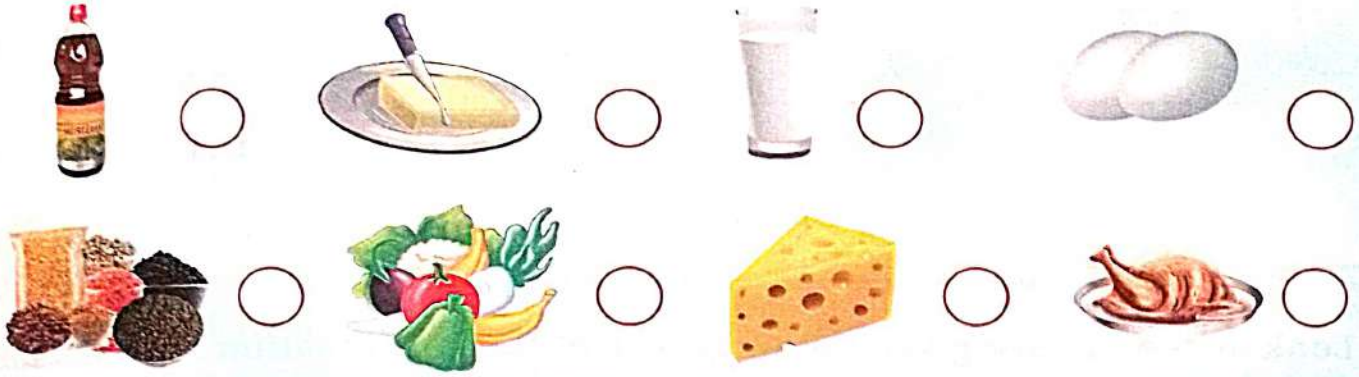
21st CS Critical Thinking

Pinky boiled milk in the morning and kept it in the kitchen. When she wanted to use it in the evening it turned sour. What do you think she should have done?

Picture-based Activity

HD Problem Solving

Write 'E' for Energy-giving Foods, 'P' for Protective Foods and 'B' for Body-building Foods.



Project WORK

HD Observation

2 ZERO HUNGER

List all the food items that you eat in a day. Find out the nutrients each food contains. Does the food you eat make up a balanced diet?

Think Smart

21st CS Health & Well Being

Read the following questions and write the answer in Yes or No.

1. Do you wash your hands before eating food? .....
2. Do you eat a variety of food? .....
3. Do you talk while eating food? .....

Subject Link (Social Studies)

CC Cross Curricular

Unscramble the names of these dishes and match them to the festivals.

1. HIJYUGA	(a) EID
2. ESETWCIRE	(b) CHRISTMAS
3. NIWASE	(c) HOLI
4. AKEC	(d) PONGAL

CHAPTER 2

Digestion and the Microbes

What We Have Learnt?

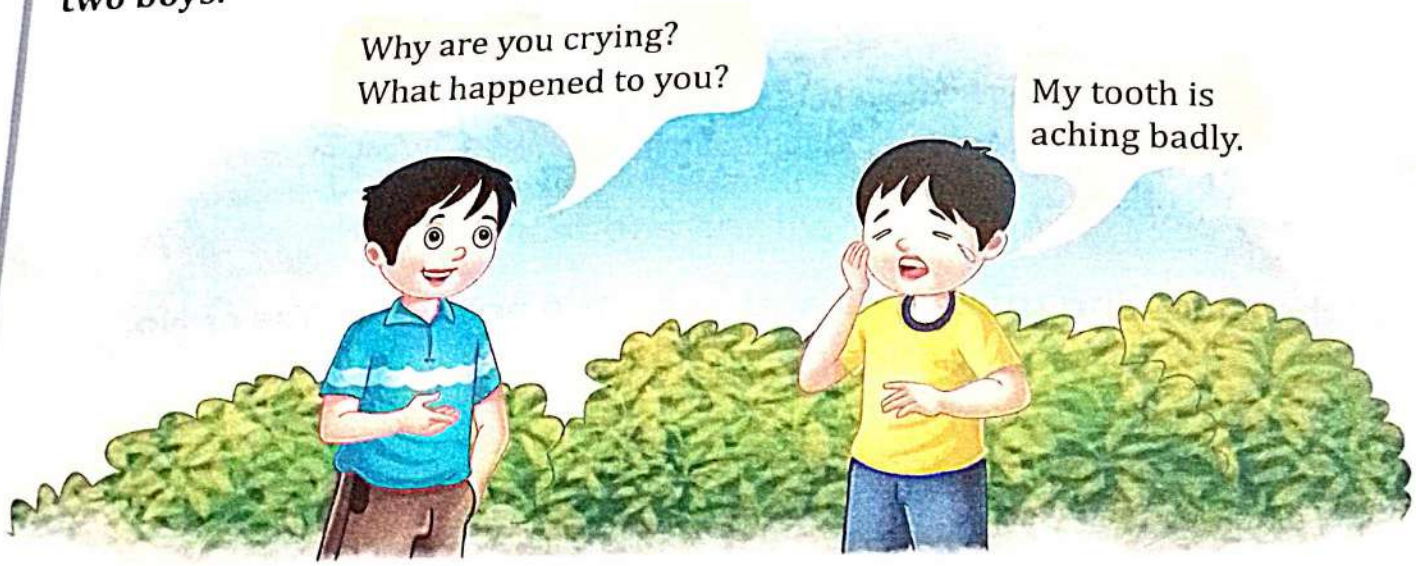
- Human body
- Sense organs
- Various systems of our body

What We Will Learn?

- Milk teeth and permanent teeth
- Kinds of teeth
- Parts of a tooth
- Caring of teeth
- The digestive system
- Microbes

Get Set GO!

Look at the picture given below and read the conversation between the two boys.



Now answer the following questions:

1. Do you brush your teeth daily? .....
2. How many times do you brush your teeth in a day? .....

Teeth are important part of our body. They give shape to our mouth. Teeth seem like white pearls in our mouth. They help us to speak clearly. They help us to bite and chew our food. So, we should clean our teeth carefully.

MILK TEETH AND PERMANENT TEETH

We all are born without teeth. After two and a half years, a child has about 20 teeth. These are called temporary teeth or milk teeth. These teeth remain for two to three years.

Milk teeth of a kid

Permanent teeth of a boy

At the age of six, milk teeth start falling out one by one. As the milk teeth fall, new teeth grow in their places. These teeth are called permanent teeth. They remain throughout our life. These are 32 in number, 16 teeth in the upper jaw and 16 teeth in the lower jaw.

KINDS OF TEETH

There are four different kinds of permanent teeth. They are classified according to their functions. Let us know about them.

- **Incisors or Cutting Teeth :** There are eight incisors in both jaws. Four in upper jaw and four in lower jaw. These teeth are used for cutting the food.

Incisors

Canines

- **Canines or Tearing Teeth :** There are four canines in both jaws. Two in upper jaw and two in lower jaw. These are sharp teeth and are used for tearing the food.

- **Premolars or Cracking Teeth :** There are eight premolars in both jaws. These are broad teeth and next to the canines. These teeth help to crack and chew food.

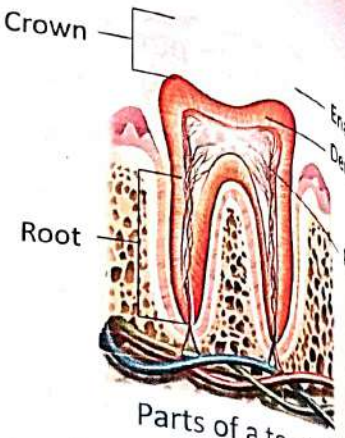
Premolars

Molars

- **Molars or Grinding Teeth :** There are twelve molars in both jaws. These teeth are broader, flatter and bigger. They have broader upper surface to chew and grind the food well.

PARTS OF A TOOTH

Teeth have the same basic structure in all. Each tooth has a visible part called crown and invisible part called root. Crown is covered by enamel. Enamel is white in colour. It is the hardest substance of our body. The layer inside the enamel that forms the main part of the tooth is called dentine. It is hard like a bone. Inside the dentine, pulp is present. It is the centre of the tooth. The pulp is very soft and full of blood vessels and nerves. The gum holds the teeth in their place.



Parts of a tooth

CARING OF TEETH

When we eat, small bits of food, they may stick between our teeth. Food particles stuck in spaces that can cause the growth of bacteria and germs. These bacteria and germs form a sticky yellow layer called plaque. The plaque will start causing pain, bad smell, toothache, bleeding gums. So, we should keep our teeth bacteria and germ free. We should take proper care of our teeth. Calcium and vitamin C are important for healthy teeth and gums.

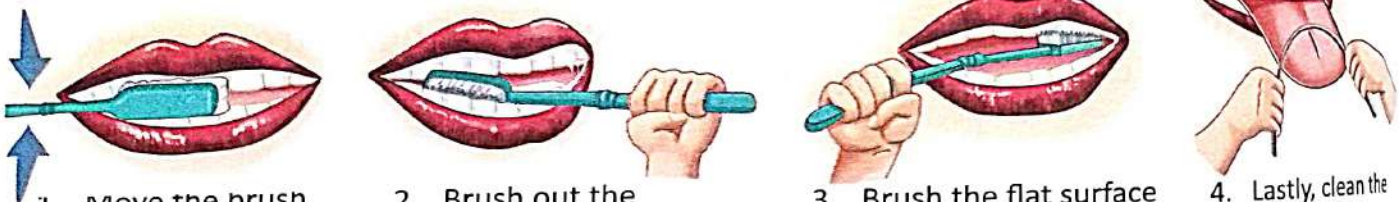
QUICK TEST

Answer these questions :

1. How many temporary teeth does a child have?
2. What is the number of incisors?

Word Bank

Bacteria : Tiny single-celled micro-organisms.



1. Move the brush in upward and downward motion.
2. Brush out the back of the teeth.
3. Brush the flat surface of the premolars and molars.
4. Lastly, clean the tongue lightly.

Proper way of brushing

We can take care of our teeth in the following ways :

- We should eat more green vegetables, fruits and salad.
- Chewing food improves blood flow in gums. So, we should chew our food properly.

- We must brush our teeth twice a day.
- Always floss to clean between the teeth.
- We must not consume too many sweets, chocolates or soft drinks.
- We must visit our dentist regularly.

FUN Activity

EL Experiential Learning

Have you ever seen an old age person fixing or removing is dentures (artificial set of teeth) and then soaking them overnight in water.

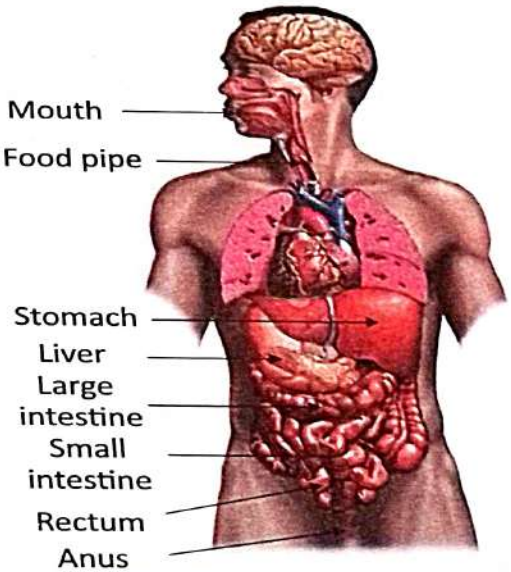
If not, then find someone and check the arrangement of teeth.

THE DIGESTIVE SYSTEM

PUT ON YOUR THINKING CAP

There is a disease called appendiciries. Find out which part of body gets affected by it and up to what extent?

The food that we eat does not give energy directly to our body. It gives energy after digestion. Digestion is a process in which the food we eat is broken down into simple and soluble substance that is absorbed by the body. Digested food is absorbed by the blood and taken to all the parts of the body. Our digestive system is made up of many organs. Each organ has specific function. The figure given alongside shows the human digestive system and its organs.



The digestive system

Mouth : The teeth in our mouth grind the food into smaller pieces. Saliva present in the mouth helps to make the food soft.

Food pipe : The swallowed food slips down into the food pipe which is also called oesophagus .

Stomach : From the food pipe, the food is collected in a bag like structure. Here the food is churned and mixed with digestive juices.

Small intestine : The food is partly digested as it enters the small intestine. More digestive juices are added here and digestion of food is completed. It is in liquid form and can enter the blood.

Word Bank

Dentist : A person qualified to treat people suffering with tooth problems.

Liver : It produces juices that play an important role in the digestion of food.

Large intestine : The undigested food is now passed on to the large intestine. Here most of the water is absorbed from the food. The undigested food is passed to rectum.

Rectum : The undigested food is stored here before being thrown out of the body through an opening called anus.

Knowledge ZONE

It takes about 24 hours for a body to digest the food completely.

QUICK TEST

Fill in the blanks with the correct words.

1. ..... present in the mouth helps to make the food soft.
2. The swallowed food slips down into the food pipe which is also called .....
3. The sticky, yellow layer on the teeth is called ..... .

Healthy Eating Habits

Healthy food is essential for good health. We must follow healthy eating habits. Some of the habits are given below :

- We must take four to five meals a day.
- Chew the food properly and do not swallow it as a whole.
- We must wash our hands and mouth before and after every meal.
- We must eat fruits and vegetables daily in our food.
- We must use roughage in every meal.
- Always eat clean, fresh and well cooked food.
- We must eat a balanced diet.

Knowledge ZONE

Do not eat when you are angry or upset.

MICROBES

Microbes are very small organisms. They cannot be seen through the naked eyes. They are visible only through an instrument called microscope. Microbes can be useful and harmful as well. Some harmful microbes cause diseases. There are four types of harmful microbes :

Fungi : Fungi grow on decaying materials like on bread, pickle, etc. They cause ringworm, athlete's foot, etc.

Word Bank

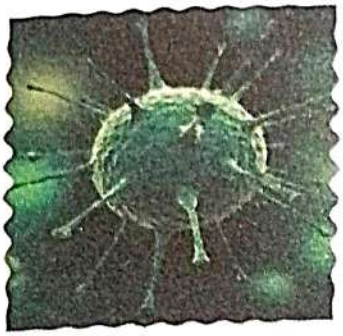
Microscope : An instrument that makes very small objects appear big

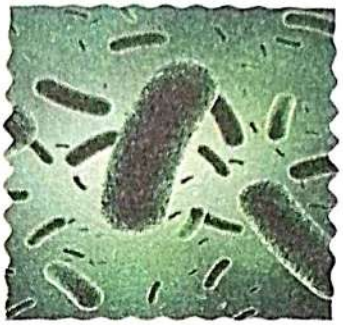
Viruses : Viruses are also smaller organisms. They cause common cold, polio, fever, influenza, etc.

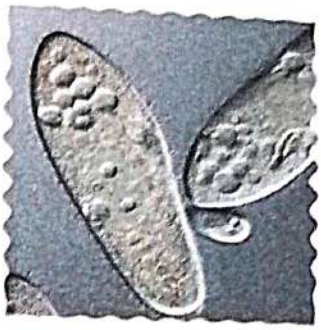
Bacteria : Bacteria are single celled small organisms. They cause typhoid, cholera, tuberculosis, pneumonia, etc.

Protozoa : Protozoans are single celled organisms. They cause food poisoning, malaria, dysentery, etc.


Fungi

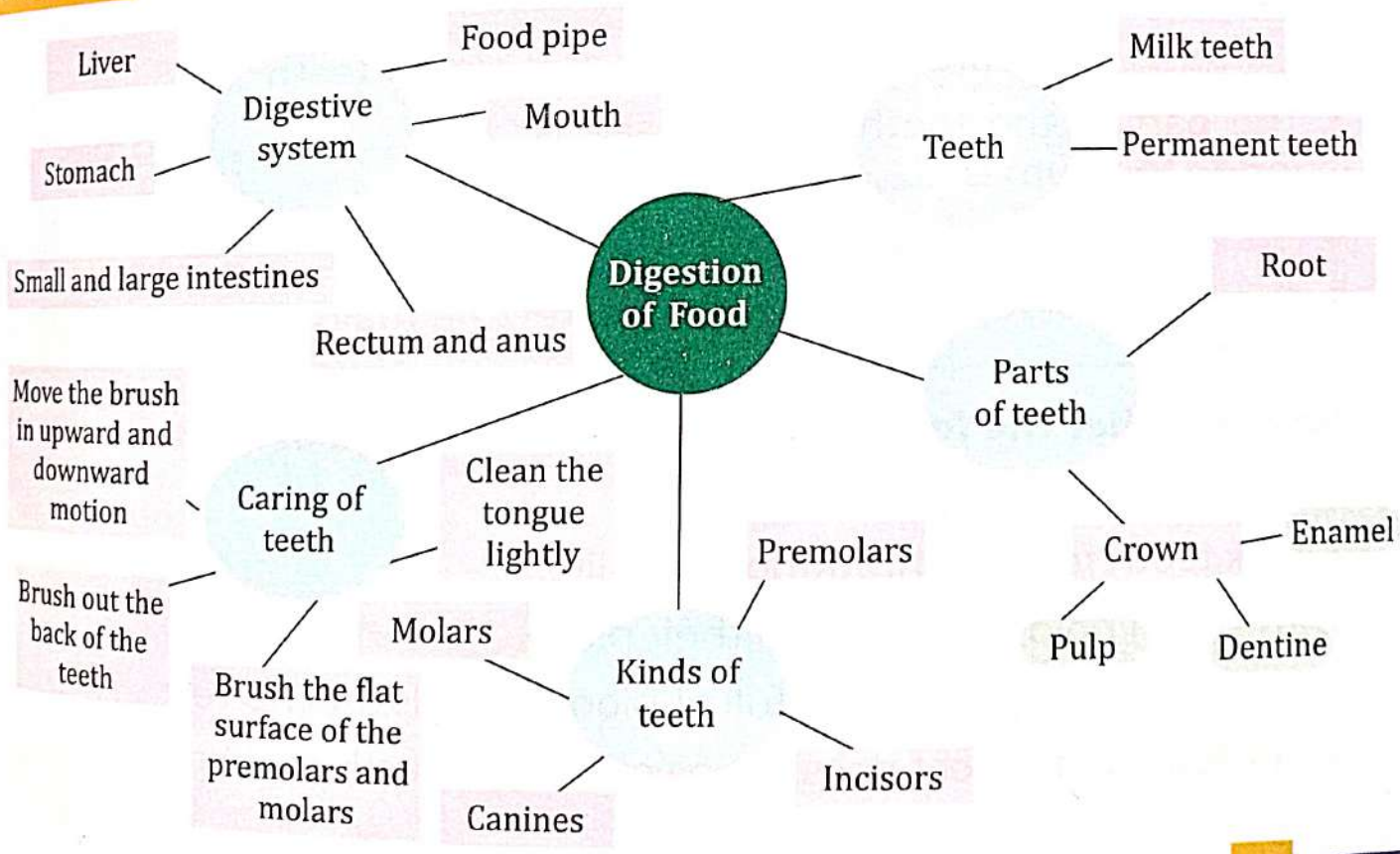

Virus


Bacteria


Protozoa

But some of the microbes are useful also. Microbes change milk into curd. They help in formation of medicines. Bread, buns and some other foods are made prepared with the help of bacteria. Bacteria also helps in keeping the environment clean.

MIND MAP



EXERCISES

I. Objective Type Questions

A. Tick (✓) the correct option.

1. After two and a half years, a child has ..... teeth.
   (a) ten ☐ (b) twenty ☐ (c) twenty five
2. Which of the following teeth is used in cutting the food?
   (a) Incisors ☐ (b) Canine ☐ (c) Premolar
3. The outer hard part of the teeth is called :
   (a) enamel ☐ (b) dentine ☐ (c) crown
4. Which of the following is not a microbe?
   (a) Fungi ☐ (b) Protozoa ☐ (c) Molar
5. Which of the following is caused by virus?
   (a) Ringworm ☐ (b) Typhoid ☐ (c) Influenza

B. Fill in the blanks with the correct words.

1. Permanent teeth have ..... kinds of teeth.
2. ..... are broader, flatter and bigger teeth.
3. The part of the tooth that we see is ..... and the part inside the gum is ..... .
4. ..... are used in tearing the food.
5. The layer inside the enamel that forms the main part of the tooth is called ..... .

C. State whether the following statements are True or False.

1. Teeth give shape to our mouth. ☐
2. Milk teeth remain throughout the life. ☐
3. The gum holds the teeth in their place. ☐
4. The pulp is very hard and full of blood vessels and nerves. ☐
5. The food that we eat does not give energy directly to our body. ☐

D. Match the following.

1. Fungi	(a) Malaria
2. Protozoa	(b) Cholera
3. Fungi	(c) Ringworm
4. Fungi	(d) Influenza

II. Very Short Answer Type Questions

E. Write two examples for each of the following.

1. Diseases caused by fungi ....
2. Diseases caused by viruses ....
3. Diseases caused by protozoa ....
4. Food for strong teeth ....

F. Write one word for the following.

1. The hard, white outer covering of the tooth .....
2. The first set of teeth .....
3. The soft part of the tooth full of nerves and blood vessels .....
4. Microbes that help in making bread .....

III. Short Answer Type Questions

G. Answer the following questions briefly.

1. What are temporary teeth?
2. What is plaque?
3. What are microbes?
4. How many teeth are there in a temporary set?

IV. Long Answer Type Questions

H. Answer the following questions in detail.

1. What are temporary and permanent teeth?
2. Explain the different kinds of teeth.
3. Explain the different parts of a tooth.
4. Why should we take care of teeth? Write some steps for caring of teeth.

CREATIVE CORNER

HOTS Question

21st CS Critical Thinking

Calcium and Vitamin C are important for healthy teeth and gums. Try to know their benefits with the help of your teacher or parents.

Crossword PUZZLE

HD Problem Solving

Find and circle all the words in the word-grid given below.

Appointment
Braces
Checkup
Cleaning
Dentist
Enamel
Exam
Fillings
Floss
Fluoride

E	N	A	M	E	L	I	F	L	U	O	R	I	D	E
Y	G	T	O	O	T	H	B	R	U	S	H	X	M	T
G	Y	S	L	W	S	B	Q	T	K	S	P	I	T	F
U	R	X	A	T	E	E	T	H	C	A	V	I	T	Y
M	C	V	R	A	T	E	D	T	W	J	E	X	A	U
S	Q	E	X	A	M	M	Y	B	Z	H	F	F	P	K
T	X	C	L	E	A	N	I	N	G	V	H	L	P	A
K	T	O	O	T	H	P	A	S	T	E	B	O	O	S
U	J	K	Z	J	S	T	J	M	J	C	R	S	I	D
M	O	U	T	H	W	A	S	H	R	H	A	S	N	E
U	N	L	X	A	G	R	G	V	C	E	C	O	T	N
R	P	X	B	V	I	T	K	S	T	C	E	M	M	T
N	X	R	A	Y	V	A	C	P	Y	K	S	P	E	I
E	I	C	O	H	L	R	U	K	A	U	N	T	N	S
D	I	F	I	L	L	I	N	G	S	P	N	L	T	T

Gums
Molar
Mouthwash
Spit
Tartar
Teeth
Toothbrush
Toothpaste
X-ray

Project WORK

21st CS Collaboration

Teeth are important part of our body. They give shape to our mouth. Teeth seem like white pearls in our mouth. They help us to speak clearly. They help us bite and chew food. Make a poster on 'Caring of Teeth'. Display it in your class.

Think Smart

21st CS Health & Well Being

Discuss the following points with a dentist when you visit :

- Can I use any toothpaste?
- Which type of brush should I use, hard or soft?
- Can I do the floss on my own?
- Why should we brush twice a day?
- What are cavities? How do they occur?

CHAPTER 3

Clothes

What We Have Learnt?

- Clothes and fibres
- Clothes that suit the weather

What We Will Learn?

- Need of clothes
- Types of clothes
- Care of clothes

Get Set GO!

Match the following professionals with their uniforms.

1. 

2. 

3. 

4. 

(a) 

(b) 

(c) 

(d) 

Early men knew nothing about clothes. They covered themselves with the leaves and bark of the trees. Gradually, with the passage of time, man learnt the art of weaving clothes and started wearing clothes. Now, clothes are our basic need. We wear them all the time. But we wear different clothes at different times.

NEED OF CLOTHES

We wear clothes due to many reasons, but the most important reason is protection.

- Clothes protect us from the heat of the sun. Uncovered part gets direct heat of the sun and gets tanned.

Woollen protects us from cold

- Clothes protect us from the dust particles. If we do not wear clothes, all dust would stick to our skin. It can cause several diseases.
- Clothes protect us from the rain. In rain, we wear raincoats to escape from rain. We wear gumboots to protect our feet from mud.
- Clothes protect us from cold. In winter season, we wear woollen clothes. Woollen clothes keep us warm.
- Clothes protect us from insect bites. In our surroundings, there are number of mosquitoes in the evening. So, we should wear full sleeve clothes to save ourselves from them.

Raincoat and umbrella protect us from rain

TYPES OF CLOTHES

We wear different types of clothes. Our choice depends on the climate and the temperature of the place we live in. Clothes are made from various kinds of cloth materials. Clothes are made of natural fabrics and synthetic fabrics.

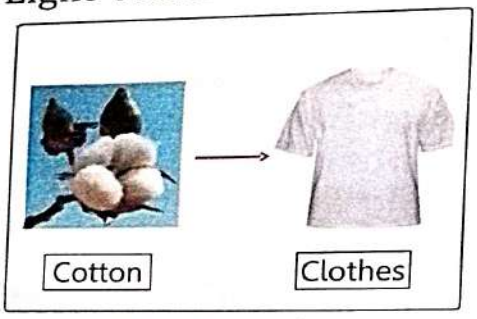
Natural Fabrics

Fabrics that we get from plants or animals are called natural fabrics. Plants give us linen, cotton, jute, etc. Animals give us wool, silk, fur, etc.

Cotton clothes allow the body's heat to escape and keep us cool in summer. They are light and soothing clothes. We feel cool and relaxed in these clothes. These fabrics absorb sweat and keep us cool. Light-coloured clothes also reflect sunlight.

Word Bank

Linen : A fibre that is obtained from the stem of the flax plant.



Clothes from plants

Wool from sheep

Woollen clothes from wool

In winters, we wear woollen and silk clothes. These clothes keep us warm. We wear mostly dark coloured clothes in winter. Dark coloured clothes absorb heat and keep us warm.

Knowledge ZONE

Cotton fibre is obtained from the flower of the cotton plant and linen is obtained from the stem of the flax plant.

Synthetic clothes

Synthetic Fabrics

Synthetic fabrics are produced by mixing fibres with other materials. These fibres are not found in nature. These are man-made and are manufactured in factories. Synthetic fibres are cheap in cost. These fibres have vast varieties. They are wrinkle free and can be washed and dried within minutes. Some synthetic fabrics are waterproof also. Nylon, polyester, rayon, etc. are the examples of synthetic fabrics.

CARE OF CLOTHES

Clothes make us feel good. They reveal our personality before others. So, we should always wear clean clothes.

- We should take care of our clothes properly.
- Dirty clothes should be washed regularly. Washing makes clothes fresh, germ-free, sweat-free and stain-free.
- Expensive, woollen and silk clothes should not be washed at home. They should be sent for dry cleaning.
- Torn clothes must be mended without any delay.
- We should keep mothballs or dried neem leaves with woollen clothes. Otherwise, they will be eaten and destroyed by small insects like moths and silver fish.

QUICK TEST

Answer these questions :

1. What are fibres?
2. Name two types of fibres.


Washing

PUT ON YOUR THINKING CAP

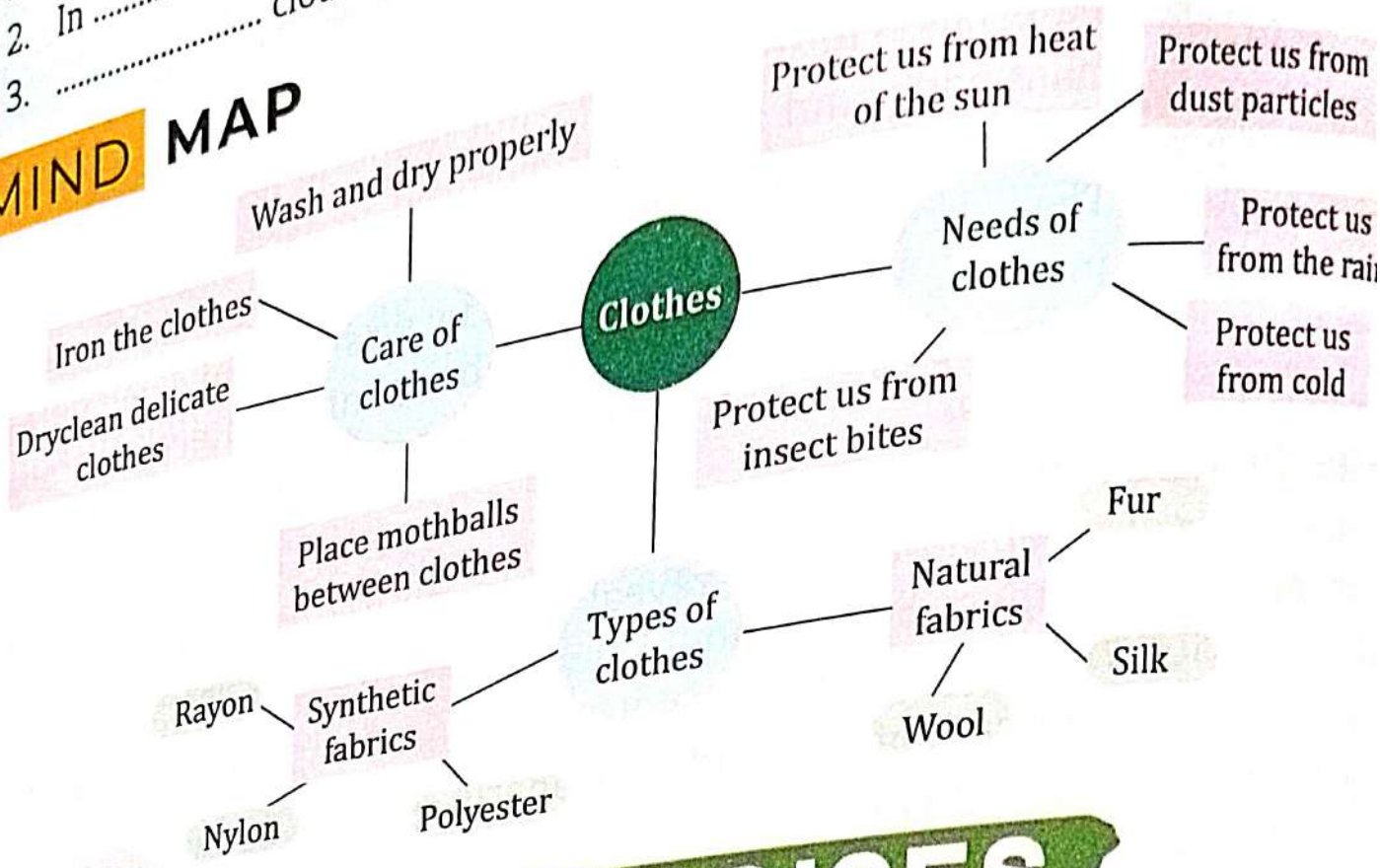
What is called naphthalene balls? What purpose they are used for?

QUICK TEST

Fill in the blanks with the correct words :

1. ..... protect us from the heat of the sun.
2. In ..... we wear woollen and silk clothes.
3. ..... clothes must be mended without any delay.

MIND MAP



EXERCISES

I. Objective Type Questions

A. Tick (✓) the correct option.

1. Clothes protect us from :
   (a) rain ☐ (b) dust ☐ (c) All of these ☐
2. Choice of wearing clothes depends on :
   (a) climate ☐ (b) temperature ☐ (c) Both (a) and (b) ☐
3. The fabric that we get from plants is called :
   (a) kimono ☐ (b) synthetic ☐ (c) natural ☐
4. What should we keep with silk and woollen clothes?
   (a) Neem leaves ☐ (b) Mothballs ☐
   (c) Both (a) and (b) ☐

B. Fill in the blanks with the correct words.

1. Clothes protect us from ..... .
2. Early men covered themselves with leaves and ..... .
3. In winter season, we wear ..... clothes.
4. ..... are light and soothing clothes.

C. State whether the following statements are True or False.

1. Clothes protect us from heat, cold, dust, rain and from many other things. ☐
2. Our choice of clothes depends on money and the temperature. ☐
3. In winters, we wear linen clothes. ☐
4. In winter, we wear raincoats to escape from rain. ☐

D. Match the following.

1. Cotton	(a) Raincoat
2. Wool	(b) Natural fibre
3. Rayon	(c) Worn in winter
4. Rain	(d) Synthetic fabric

II. Very Short Answer Type Questions

E. Write two examples for each of the following.

1. Summer clothes ....
2. Winter clothes ....
3. Natural fabrics ....
4. Synthetic fabrics ....

F. Write one word for the following.

1. Clothes that keep our body warm .....
2. Fibres that are made by man .....
3. Fibres obtained from either animals or plants .....

III. Short Answer Type Questions

G. Answer the following questions briefly.

1. Why do we wear clothes?
2. What type of clothes do we wear in summer?
3. Name two things used to keep insects away from clothes.

IV. Long Answer Type Questions

H. Answer the following questions in detail.

1. Why do we wear woollen clothes in winter?
2. Write the difference between natural fabric and synthetic fabric.
3. How can we take care of our clothes?

CREATIVE CORNER

21st CS Critical Thinking

HOTS Question

Riya's father bought her some white dresses for summer. Why do you think white clothes are more comfortable for the hot weather?

21st CS Creativity

Picture-based Activity

Look at the given pictures and try to make a short story of Ginny and Tinny based on the place they live in and the clothes they wear:

....

....

Project WORK

IE Indian Ethos

Collect pictures of different traditional dresses worn in different states of India. Paste them in a scrapbook and write what each dress is called.

Think Smart

HD Cognitive

Do you take care of your clothes? Write Yes or No.

- Silk and woollen clothes should be dry cleaned.
- Always wear clean and well ironed clothes.
- Mend if any tear in the dress immediately.

CHAPTER 4

Solids, Liquids and Gases

What We Have Learnt?

- Solids, liquids and gases
- Change of forms

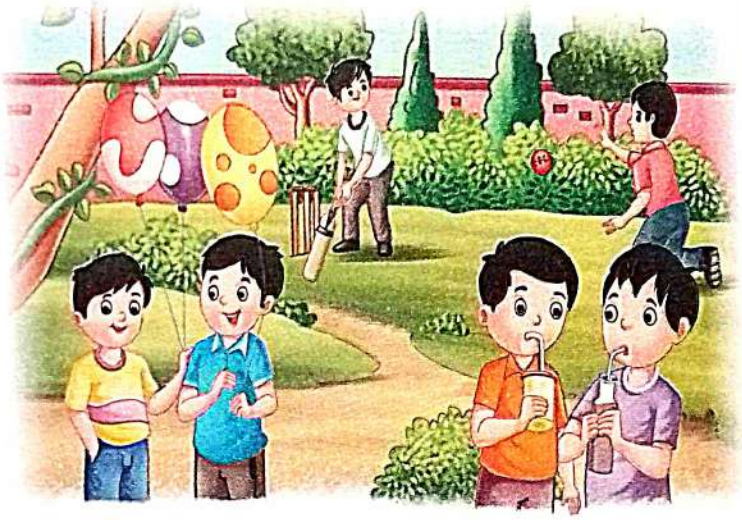
What We Will Learn?

- States of matter
- Change of states
- Solute, solvent and solution

Get Set GO!

Look at the picture given below and fill in the blanks with the correct words.

1. The air filled in the balloon is a ..... (solid/gas).
2. The drink that the boys are drinking is a ..... (liquid/solid).
3. The bat is a ..... (solid/liquid).



When we look around, we see different things like trees, air, water etc. They are living and non-living. They have different sizes, shapes and colours.

Any substance that has mass and occupies space is called matter.

STATES OF MATTER

Matter is made up of minute particles. These minute particles are called molecules. Molecules are the smallest substances of the matter. Molecules of one substance differ from the molecules of other substance. They have many

Word Bank

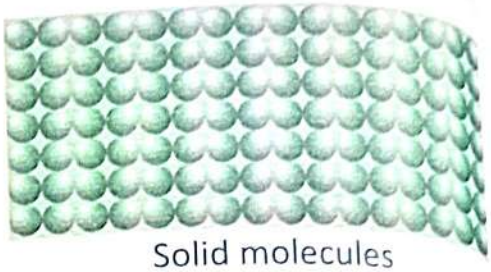
Molecule : Tiny particles of matter.

Substance : A type of liquid, gas or solid that has particular qualities.

arrangements. These arrangements make different states of matter. There are three states of matter. These are solid, liquid and gas.

Solids

In solids, molecules are packed very closely. They do not have space in between them. A pencil, book, table, glass, rock, etc. are solids. Following are the features of solids :



Solid molecules

- They have very strong force of attraction between them. So, they are not free to move.
- They are generally hard.
- Solids have fixed shape and size.
- They have definite volume.
- If we apply force they can change their shape. Like plastic bottles, rubber band, etc.
- Some solids can break or bend on applying force.

Book

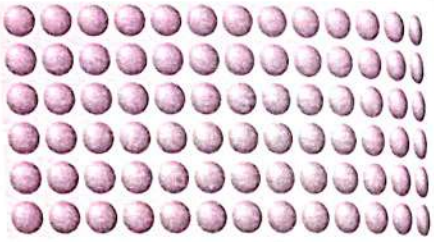
Chair

Liquids

In liquids, the particles are not very closely packed and thus can move around. Water, milk, juice, etc. are liquids. Following are the features of liquid :

Knowledge ZONE

All metals are solid, except, mercury. It is liquid at room temperature.



Liquid molecules

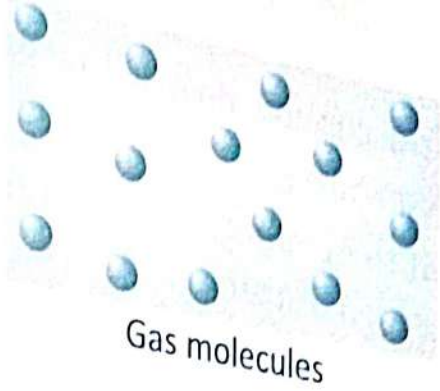
- Liquids have fixed volume.
- Liquids do not have a definite shape. They acquire the shape of the container in which they are poured.
- Molecules have some spaces between them. So, they can flow easily. Hence, they are called fluids.
- Liquids can neither be bent nor broken.

Liquid acquire the shape of container

Gases

In gases, molecules are loosely packed as compared to solids and liquids. Oxygen, carbon dioxide, nitrogen are gases. Air is a mixture of these gases. Following are the features of gases :

- They have a very weak force of attraction. So, they can move freely.
- Gases do not have fixed shape.
- They do not have fixed volume.
- There are large spaces in molecules of gases.



Gas molecules

Steam

Air

QUICK TEST

Answer these questions.

1. Give examples of some solids.
2. In which state of matter are the molecules not closely packed ?

PUT ON YOUR THINKING CAP

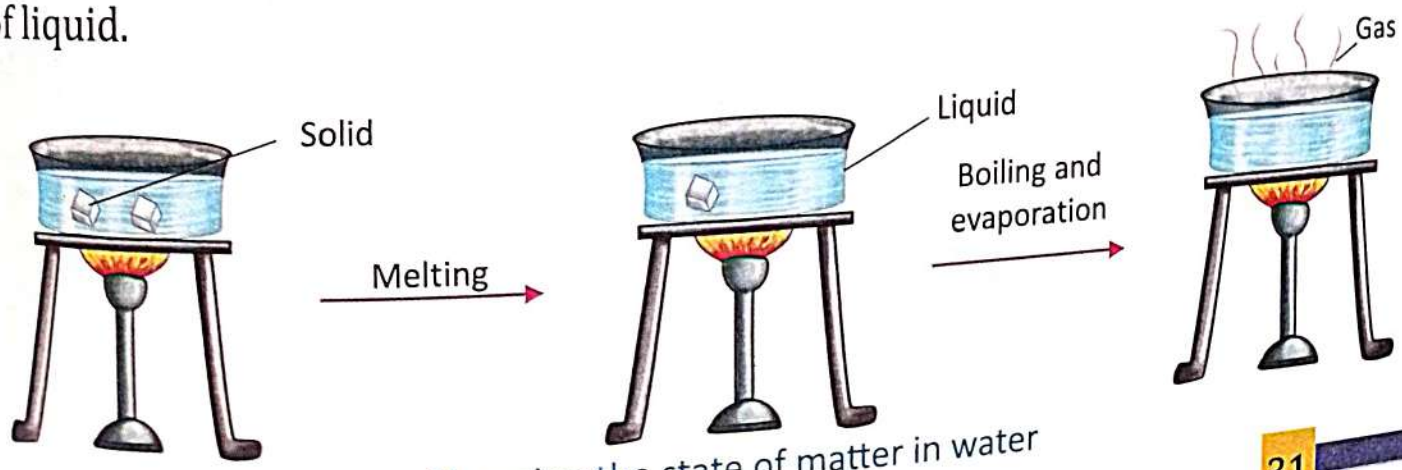
Find out the air we breathe consists of what kinds of gases. Try to figure out their specific proper sequence.

CHANGE OF STATES

The three states of matter can be easily converted from one form to another. The three states of matter are interchangeable.

A solid can be changed into liquid. When we heat solid it will convert into liquid. This process is called melting.

When we heat the liquid, it will cause bubbles. This is called boiling. If we continue boiling, the liquid will change into gas. This process is called boiling of liquid.



Changing the state of matter in water

On cooling down, the gas will convert into liquid. This process is calle condensation.

If the cooling is continued, the liquid will change into solid. This process i called freezing.

We find water in all the three states. Water which we drink is liquid. If we bo water it will change into gas. If we keep water in an ice tray in the freezer, will change into ice. It is the solid state of water.

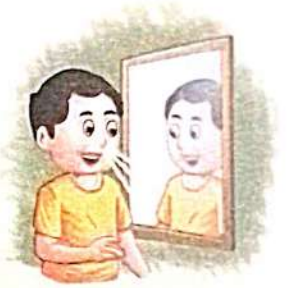
HD Observation

Activity

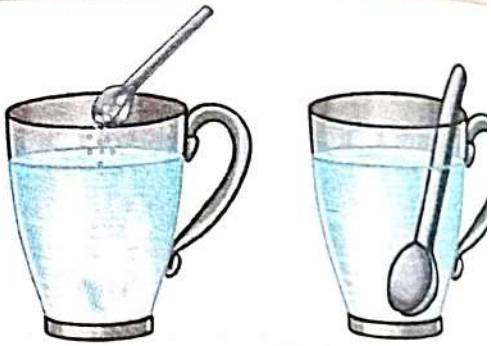
Aim : To observe the process of condesation.

Material required : Mirror

Method : Adjust yourself close to the mirror. Take a deep breathe. Exhale the hot breathe onto the mirror. Now, observe carefully. Your deep breathe is warm and contains water vapour. When you exhale onto the mirror, the water vapour condenses into very small droplets of water when it comes in contact with the cold surface of the mirror. The mirror becomes foggy. It is due to the process of condensation.



SOLUTE, SOLVENT AND SOLUTION



Sugar (Solute) + Water (Solvent)
Sweet water (Solution)

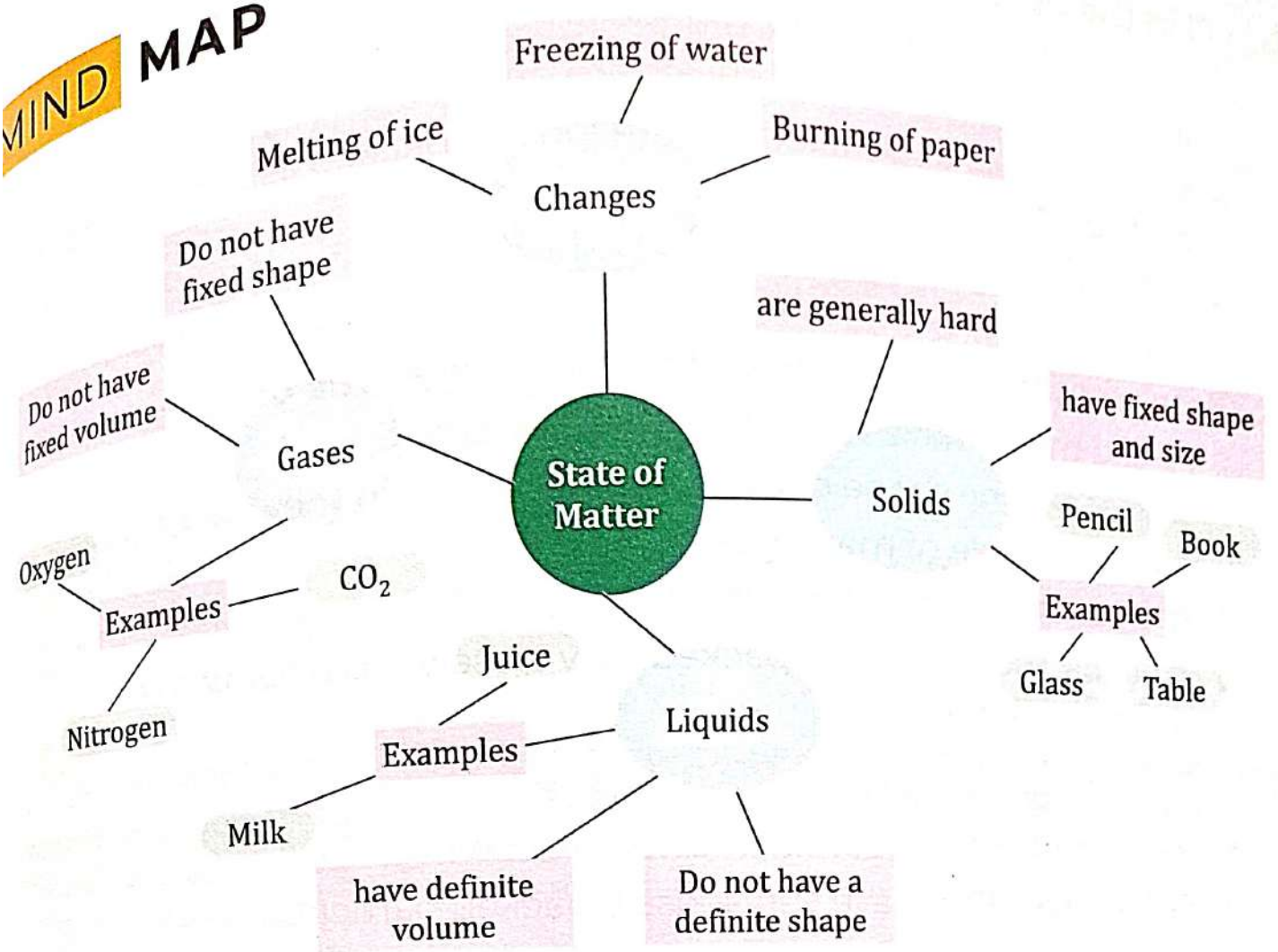
Some solids can easily mix with liquid. The solid that dissolves in liquid is called solute. The liquid in which the solute dissolves is called the solvent. The liquid obtained after dissolving a solute in a solvent is called a solution. We add sugar in water and leave it for some time, it gets dissolved in water. This solution becomes sweet. Here, sugar is solute and water is solvent. Some substances do not dissolve in the liquid, like sand, wood, plastic, e These substances are called insoluble substances.

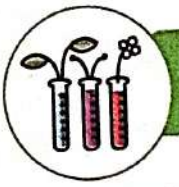
QUICK TEST E.

Fill in the blanks with the correct words.

1. ..... is made up of minute particles.
2. ..... are the smallest substances of the matter.
3. ..... have fixed volume.
4. The solid that dissolves in liquid is called ..... .

MIND MAP





EXERCISES

I. Objective Type Questions

A. Tick (✓) the correct option.

1. Substance that has weight and occupies space is called :
   (a) item ☐ (b) matter ☐ (c) molecules ☐
2. Which of the following is the smallest substance of matter ?
   (a) Solid ☐ (b) Molecule ☐ (c) State ☐
3. The transformation of liquid into gas is called :
   (a) evaporation ☐ (b) melting ☐ (c) condensation ☐
4. The solid that dissolves in water is called :
   (a) solution ☐ (b) solute ☐ (c) solvent ☐
5. Water mixed with sugar gives :
   (a) salty taste ☐ (b) sweet taste ☐ (c) no taste ☐

B. Fill in the blanks with the correct words.

1. ..... have fixed shape and size.
2. In ....., the particles are not very closely packed.
3. In ....., molecules are loosely packed as compared to solids and liquids.
4. We find ..... in all the three states.
5. ..... do not have fixed volume.

C. State whether the following statements are True or False.

1. All the things have weight and occupy space.
2. Gases take the shape of the container in which they are kept.
3. Air is a mixture of many gases.
4. The gases have fixed shape.
5. In solids, molecules are packed very closely together with no space in between.

II. Very Short Answer Type Questions

D. Write two examples for each of the following.

1. Substances that have very loosely packed particles.
2. Substances that are usually hard and have fixed shape.
3. Solvents
4. Solutes

E. Write one word for the following.

1. The process by which a liquid changes into vapour .....
2. A substance that has mass and occupies space .....
3. Substance that has no fixed shape and volume .....
4. A solute and a solvent together form this .....

III. Short Answer Type Questions

F. Answer the following questions briefly.

1. What is matter?
2. Name the three states of matter.
3. Define solute and solvent.

IV. Long Answer Type Questions

G. Answer the following questions in detail.

1. Write the properties of solids.
2. Give any three properties of gases.
3. What do you mean by melting and evaporation?
4. Explain condensation and freezing.

CREATIVE CORNER

HOTS Questions

21st CS Critical Thinking

1. When sugar is added to water, the level of water does not change. Why?
2. Objects made of iron can have different shapes and sizes. How does iron get different shapes?

Project WORK

HD Observation

Go to an ice factory to find how ice is manufactured. Write your observation in your notebook.

Think Smart

HD Intellectual

When an incense stick is lighted, the fragrance spread quickly in the entire room. Why?

Subject Link (Mathematics)

CC Cross Curricular

Rahul has 5L of water in bucket which he wants to put in different containers to see the shape that the water takes! He has a bowl with a capacity of 350 mL. He has a jar with a capacity of 1.5L. He has a bottle with a capacity of 900 mL. He has a glass with a capacity of 200 mL. After he fills up these vessels, how much water will be left in the bucket?

A. Tick (✓) the correct option.

1. What do the growing children need a lot?
   (a) Mineral ☐ (b) Protein ☐ (c) Fat ☐
2. Which of the following is caused by virus?
   (a) Ringworm ☐ (b) Typhoid ☐ (c) Influenza ☐
3. The fabric that we get from plants is called :
   (a) kimono ☐ (b) synthetic ☐ (c) natural ☐
4. The solid that dissolves in water is called :
   (a) solution ☐ (b) solute ☐ (c) solvent ☐

B. Fill in the blanks with the correct words.

1. Permanent teeth have ..... kinds of teeth.
2. We find ..... in all the three states.
3. Our body needs a ..... quantity of vitamins and minerals.
4. ..... are light and soothing clothes.

C. State whether the following statements are True or False.

1. The food that we eat does not give energy directly to our body. ☐
2. Air is a mixture of many gases. ☐
3. Fats are not energy providing nutrients. ☐
4. In winter season, we wear cotton clothes. ☐

D. Write two examples for each of the following.

1. Natural fabrics ....
2. Iron-rich food items ....
3. Solvents ....
4. Diseases caused by protozoa ....

E. Answer the following questions briefly.

1. Why do we wear clothes?
2. What are nutrients?
3. Name the three states of matter.
4. What are temporary teeth?

Answer the following questions in detail.

1. Give any three properties of gases.
2. How can we take care of our clothes?
3. How does roughage help us?
4. Explain the different kinds of teeth.

CHAPTER 5

Soil

What We Have Learnt?

- Soil

What We Will Learn?

- Formation of soil
- Composition of soil
- Types of soils
- Conservation of soil

Get Set GO!

Look at the pictures given below. These pictures are in wrong order. Correct the order of these pictures by marking 1, 2, 3 and 4.

Soil is very important and a valuable natural resource. Plants grow in the soil. Some animals like rabbits, earthworms and ants, live in the soil.

FORMATION OF SOIL

Big pieces of rocks breakdown into tiny pieces by the heat of the sun, moving air and running water. This process is called weathering. When

Breaking of rocks to form soil

these tiny pieces mix with organic matter (remains of dead plants and animals) and minerals, soil is formed.

Hence, the uppermost layer of the earth that contains minerals, some amount of air, water and organic matter is called soil.

Word Bank

Soil : the uppermost layer of the earth.

Knowledge ZONE

The remains of dead plants and animals form a dark-coloured substance called humus. It makes the soil fertile.

COMPOSITION OF SOIL

Soil is made up of many things. The basic components of soil are given below:

Sand : These are the largest soil particles.

Clay : These are the smallest soil particles.

Silt : These particles are smaller than sand particles but bigger than clay particles.

Other than these, soil also contains small stones and pebbles called gravel, minerals (like potassium, calcium and iron) and humus. Soil also contains some amount of air and water.

TYPES OF SOILS

The type of soil depends upon the kind of rock from which it is formed. Soils differ in size, colour and texture of particles. There are mainly three types of soils : sandy, clayey and loamy.

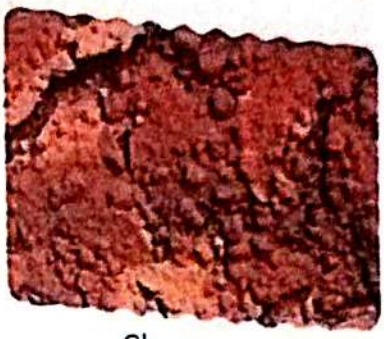
Sandy Soil

- It mainly contains sand (big, light and loosely-packed particles).
- It is found in deserts and on seashore.
- It is yellow or light-brown in colour.
- It cannot hold much water as water passes through its particles easily.
- It is mixed with cement and used for making buildings.

Sandy soil

Clayey Soil

- It mainly contains clay (very fine and closely-packed particles).
- It is found in ponds and river beds.
- It can hold a lot of water as water does not pass through its particles easily.
- It is used for making pots, toys and kutcha houses.



Clayey soil

Loamy Soil

- It contains sand and clay.
- It can hold enough air and water.
- It is good for growing plants as it contains humus.

Loamy soil

PUT ON YOUR THINKING CAP

What types of soils are found in nature? In which soil, cotton crops grow the most?

Activity — 21st CS Collaboration

Take two pots. Put sand in one pot and garden soil in another pot. Now, grow two same plants in both the pots. Water them regularly. Observe the plants growing in both the pots for one week. Which plant will grow well and why? Discuss in your class.

Soil Profile

Soil profile refers to the layers of soil. There are three layers of soil : topsoil, subsoil and bedrock.

Topsoil is the uppermost layer of soil and contains five particles of sand, humus, clay, air and water.

Subsoil is the middle layer of soil, present below the topsoil and contains broken piece of rocks.

Bedrock is the bottom layer of the soil. This layer contains large pieces of rocks and is very hard.

Soil erosion

Soil Erosion

Topsoil is the most fertile layer and best for farming because it is rich in humus. Sometimes, this topsoil is carried away by strong wind and running water. The removal of fertile topsoil by the action of wind, rain and river water is called soil erosion.

The loss of fertile topsoil makes the land unfit for farming.

Causes Of Soil Erosion

- Strong wind
- Deforestation (cutting down of trees in large numbers)
- Overgrazing (grazing on the same area for a long time)
- Heavy rain causing floods.

CONSERVATION OF SOIL

The protection of soil from being eroded is called conservation of soil. We can protect or conserve soil by the ahead ways :

- The number of trees planted should be more than the number of trees cut down.
- We should grow different types of crops in the same field to maintain the fertility of soil. This is called crop rotation.
- In open fields, trees or grass should be planted to prevent soil erosion because roots of trees hold the soil tightly.
- Floods cause soil erosion. So, dams should be built to stop floods.
- Grazing animals, like goats and cows, should not be allowed to graze on the same area of land continuously for a long time, because overgrazing reduces the fertility of soil.
- Step farming and construction of embankments help to prevent soil erosion.

QUICK TEST

Answer these questions.

1. What is soil?
2. Which is the upper most layer of the Earth?

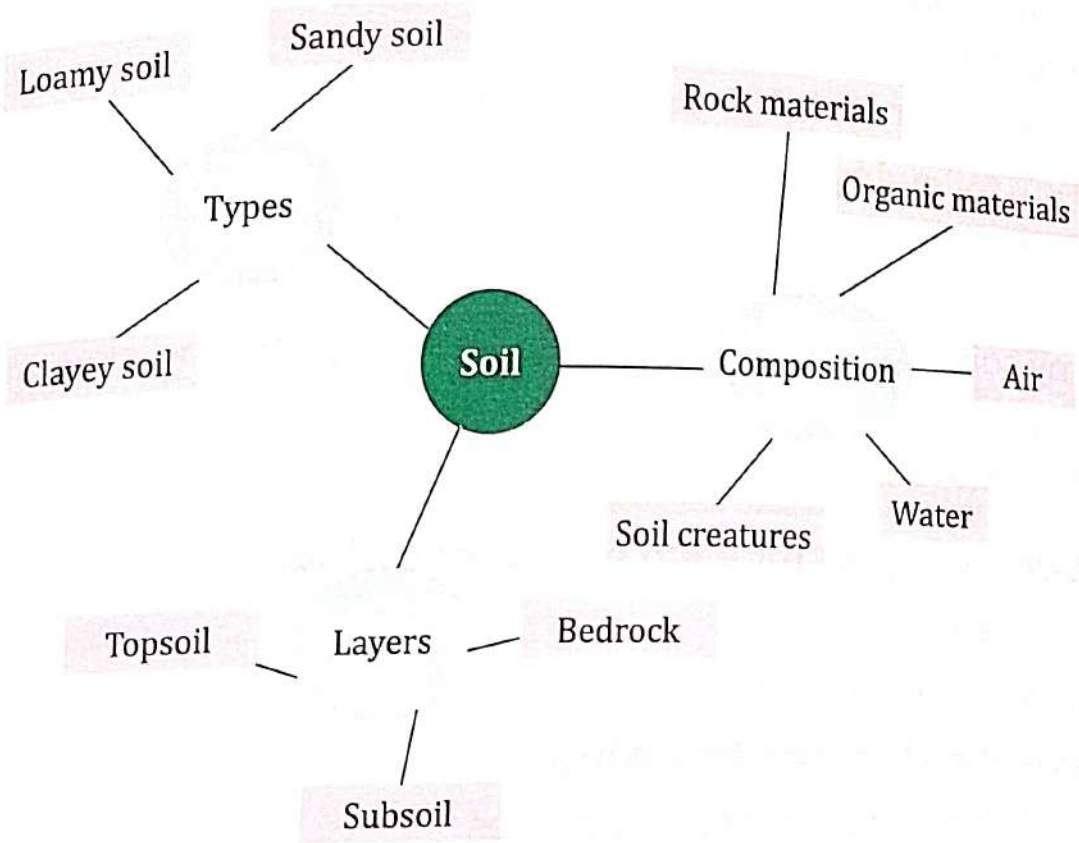
Step farming

QUICK TEST

Fill in the blanks with the correct words.

1. ..... is yellow or light-brown in colour.
2. ..... is found in ponds and river beds.
3. ..... cause soil erosion.

MIND MAP



EXERCISES

I. Objective Type Questions

A. Tick (✓) the correct option.

1. Which of the following soils is found in deserts?
   (a) Sandy soil ☐ (b) Clayey soil ☐ (c) Loamy soil ☐
2. The soil that cannot hold much water is :
   (a) loamy soil ☐ (b) sandy soil ☐ (c) clayey soil ☐

3. Strong wind and heavy rain cause :
   (a) deforestation ☐ (b) afforestation ☐ (c) soil erosion
4. Which of the following is a method to prevent soil erosion?
   (a) Cutting trees ☐ (b) Overgrazing ☐ (c) Step farming

B. Fill in the blanks with the correct words.

1. Rocks breakdown to form ..... .
2. The removal of fertile topsoil is called ..... .
3. Loamy soil contains both clay and ..... .
4. Soil is made up of ....., sand and clay particles.

C. Match the following.

1. Crop rotation	(a) soil erosion
2. Clayey soil	(b) soil conservation
3. Loamy soil	(c) contains sand and clay
4. Floods	(d) can hold a lot of water

II. Very Short Answer Type Questions

D. Write two examples for each of the following.

1. Types of soils ....
2. Causes of soil erosion ....

E. Write one word for the following.

1. Breakdown of rocks into tiny pieces .....
2. Protection of soil from erosion .....

III. Short Answer Type Questions

F. Answer the following questions briefly.

1. What is crop rotation?
2. Give two characteristics each of sandy, clayey and loamy soil.
3. What is soil erosion?

IV. Long Answer Type Questions

G. Answer the following questions in detail.

1. What is weathering? How does it contribute in the formation of soil?
2. Give any three ways by which we can protect soil.

CREATIVE CORNER

HOTS Question

21st CS Critical Thinking

Some construction work is going on in Sunny's neighbourhood. He sees that the workers are mixing the cement with some soil for binding bricks. Can you guess which soil it would be?

Project WORK

21st CS Collaboration

Visit a nearby village with your friend and meet some farmers. Ask them about the effects of soil erosion on farming and what protective measures they take to avoid soil erosion?

Think Smart

21st CS Life Skills

Fallen leaves and twigs are dead parts of plants. Some people burn them. What could they do instead to make the soil fertile?

CHAPTER 6

The Green Plants

What We Have Learnt?

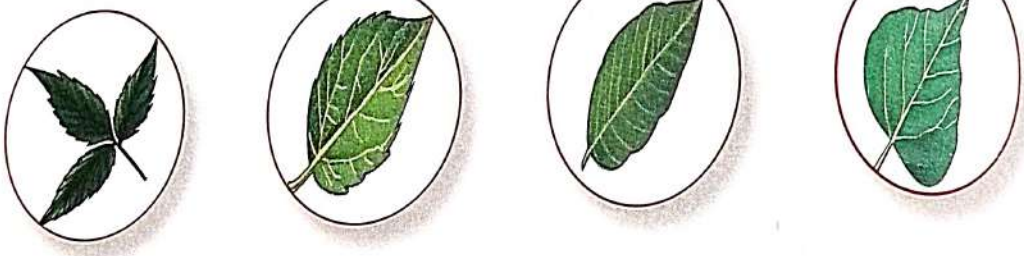
- Types of plants
- Parts of a plant
- Green plants make their own food
- Food from plants

What We Will Learn?

- Leaf and its parts
- Functions of a leaf
- How plants make their food?
- Interdependence of plants and animals

Get Set GO!

Match the following leaves with their names:



1. Peepal **2. Mango** **3. Neem** **4. Rose**

Plants form a very important part of nature. Our earth has a vast varie of plants. All the human beings and animals depend on the plants for the survival. Let us learn more about leaves and their functions.

LEAF AND ITS PARTS

A leaf is a flat structure growing from the stem or branch of a plant. Mo plants have green leaves. The green colour due to the presence of a pigment called chlorophyll in the leaves.

Word Bank

Pigment : Coloured substance

Parts Of A Leaf

Stalk : Leaf is attached to the stem with the help of stalk.

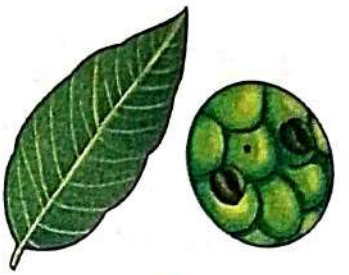
Leaf Blade : It is the flattened part of a leaf. It varies in different plants. In some plants it is broad and in some plants it is narrow.

Midrib : When you turn the leaf, you will see a main vein running along the centre of the leaf. This is called midrib.

Side Veins : There are also many side veins. These veins help in the transportation of substances. They transport water, minerals and prepared food to all parts of the plant.

Stomata : The lower layer of the leaf has tiny pores. These are millions in number. These tiny pores are called stomata. Stomata help the plants to breathe.

A leaf and its parts


Stomata on a leaf

Knowledge ZONE

Plants give out oxygen and excess water through stomata. Leaves are known as the food factory of the plant.

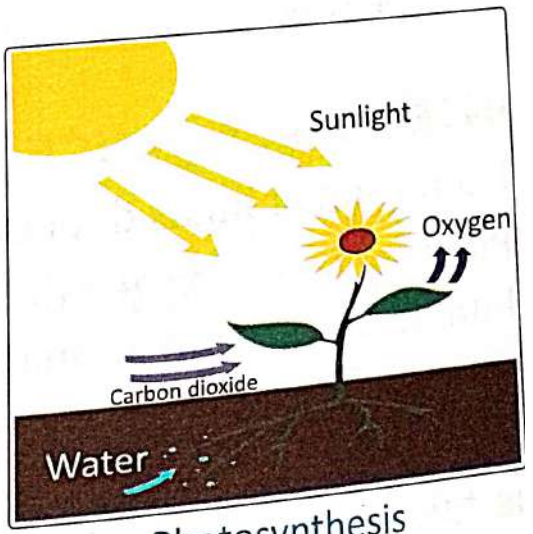
FUNCTIONS OF A LEAF

A leaf is an important part of the plant and serves many functions. Some of them are given below :

- Leaves give the shape and colour to the plant.
- Some leaves can be eaten as food, like spinach, mint, cabbage, onion, etc.
- Some plant leaves have medicinal properties, like tulsi, neem, etc.
- Some leaves are used to decorate our houses, like croton, maple, etc.

HOW PLANTS MAKE THEIR FOOD?

Green leaves contain a substance called chlorophyll. It helps plants to make their food in sunlight. In the leaf, carbon dioxide from the air and water from the soil combine to make plant food. This plant food is called starch. The process by which green leaves make plant food is called photosynthesis. During photosynthesis oxygen gas is made in the leaf. This goes out into the air through the tiny holes on the leaf. As green leaves



Photosynthesis

prepare food they are called the food factories or kitchen of the plant. An easy way of remembering photosynthesis is shown below:

$$\underset{\text{(from air)}}{\text{carbon dioxide}} + \underset{\text{(from soil)}}{\text{water}} \xrightarrow[\text{chlorophyll}]{\text{sunlight}} \text{sugar} + \text{oxygen}$$

QUICK TEST

Answer these questions.

1. Why are leaves mostly green in colour?
2. What happens to the oxygen made by leaves?

EL Experiential Learning

FUN Activity

Take a healthy potted plant. Keep it in dark for 24 hours.

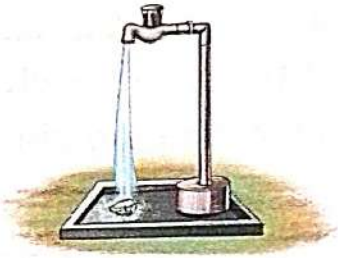
Now, pluck a leaf from this plant and boil it in water. Then, boil it in spirit. Now, wash it in cold water.

Now, put some drops of iodine solution on the leaf.

The leaf does not turn into blue black colour. It means, no starch was formed by the leaf. Starch gives blue black colour with iodine. In the absence of sunlight, the process of photosynthesis did not take place. So, no starch formation occurred. It shows that sunlight is needed for photosynthesis.

First boil the leaf in water.

Then boil the leaf in spirit.



Then wash the leaf in cold water.

Put iodine drops on the leaf.

INTERDEPENDENCE OF PLANTS AND ANIMALS

Plants and animals depend on each other for their survival.

Plants give out oxygen during the process of photosynthesis which is used by human beings and animals for breathing.

On the other hand, animals give out carbon dioxide during the process of respiration which is taken up by the plants for photosynthesis.

Word Bank

Starch : A white, granular organic chemical that is produced by all green plants

The animals also help in dispersal of seeds of the plant by carrying them to far away places. Bees and butterflies feed on the nectar of the flowers and help in the transfer of the pollen grains.

So, you can see how the plants and animals work in nature. Man, too, depends on plants for his needs. So, we must not cut the plants and trees and we must not also hunt the animals for our selfishness.

PUT ON YOUR THINKING CAP

Find out the different types of forests and the places where they are found?

If there is sudden increase or decrease in either the number of animals or plants, it will disturb the balance of nature. The interdependence of plants and animals maintain the balance of nature.

Word Bank

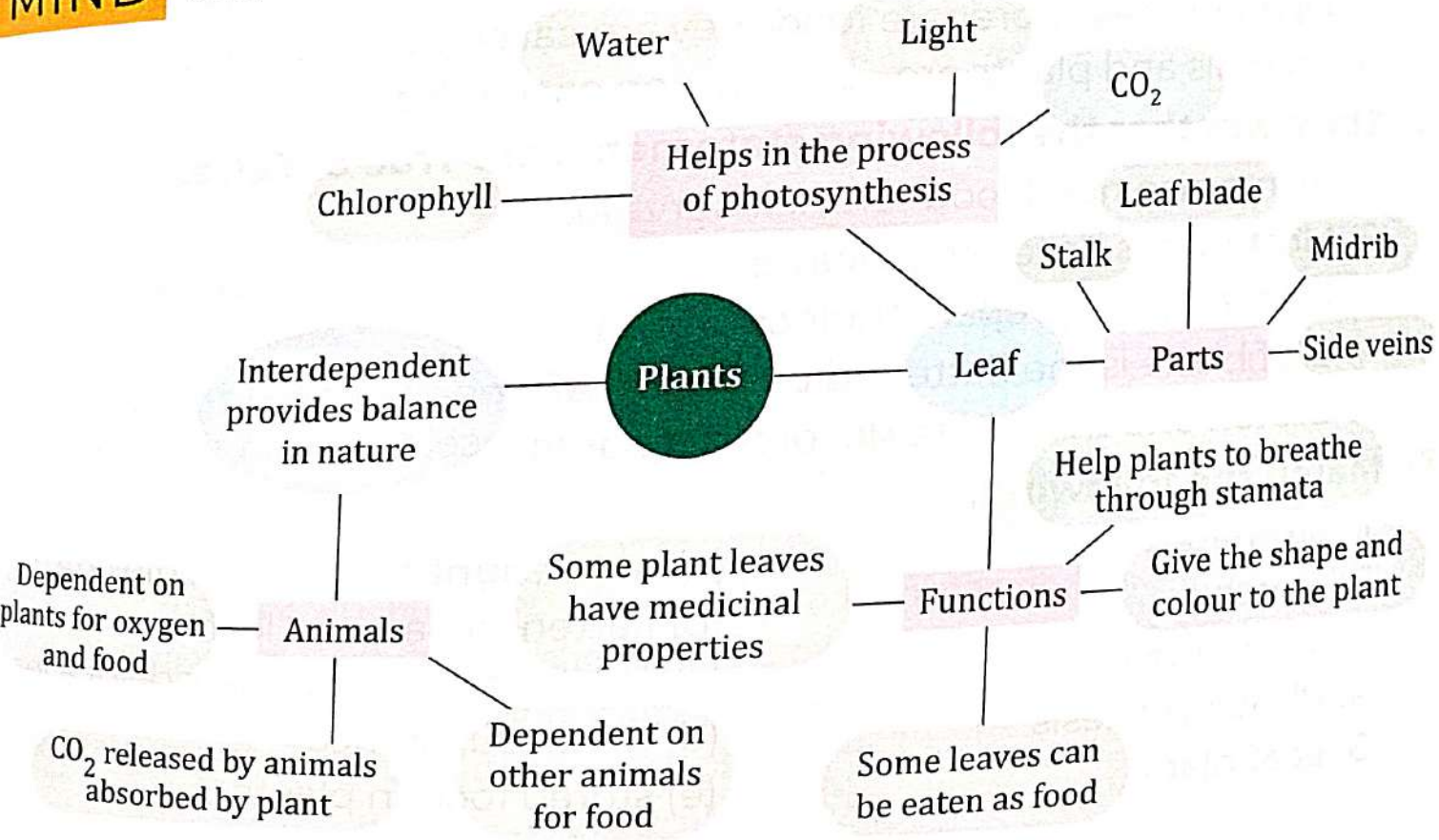
Nectar : The sweet liquid of the flower.

QUICK TEST

Fill in the blanks with the correct words.

1. The food prepared by the plants id called ..... .
2. Plant gives us ..... to breathe.
3. The part of a leaf that holds it to the stem is called ..... .

MIND MAP



EXERCISES

I. Objective Type Questions

A. Tick (✓) the correct option.

1. Which of the following is called the food factory of plant?
   (a) Root ☐ (b) Stem ☐ (c) Leaf
2. Which part of leaf helps plants in breathing?
   (a) Leaf blade ☐ (b) Veins ☐ (c) Stomata
3. Which of the following helps in the transportation of nutrients?
   (a) Leaf Blade ☐ (b) Veins ☐ (c) Leaf
4. The stored food in plants is known as :
   (a) starch ☐ (b) fruit ☐ (c) glucose
5. Which of these is not required during photosynthesis?
   (a) Sunlight ☐ (b) Water ☐ (c) Smoke

B. Fill in the blanks with the correct words.

1. Plants are green due to the presence of ..... pigment.
2. Stomata help the plants to ..... .
3. As green leaves prepare food they are called ..... .
4. Animals and plants are ..... on each other.

C. State whether the following statements are True or False.

1. Plants also need food for their survival. ☐
2. Most plants have green leaves. ☐
3. Plants do not prepare their own food. ☐
4. Leaf blade is the flattened part of a leaf. ☐
5. Croton and maple are decorative plants. ☐

D. Match the following.

1. Stomata	(a) water, light and carbon dioxide
2. Starch	(b) flattened part of a leaf
3. Chlorophyll	(c) tiny holes in the underside of a leaf
4. Photosynthesis	(d) green substance
5. Leaf blade	(e) stored food in plants

II. Very Short Answer Type Questions

E. Write two examples for each of the following.

1. Parts of a leaf ....
2. Raw materials needed by leaves to make food ....

F. Write one word for the following.

1. The pigment that helps plants in absorbing sunlight .....
2. The flat part of the leaf .....
3. Process by which leaves prepare their own food .....

III. Short Answer Type Questions

G. Answer the following questions briefly.

1. Name the vein that runs through the middle of a leaf.
2. What do we call the green pigment present in a leaf?
3. How do stomata help a leaf?

IV. Long Answer Type Questions

H. Answer the following questions in detail.

1. How do plants prepare their own food?
2. What are the different parts of a plant? Explain them.
3. Write the functions of a leaf.

CREATIVE CORNER

HOTS Question

21st CS Critical Thinking

Nina's mother likes to keep indoor plants. She takes the pots out into the balcony of her house at least once in a week. Can you say why?

Project WORK

EL Experiential Learning

Plants are called primary producers. They make food for themselves and for us also. A plant takes in water from the soil and carbon dioxide from the air. In the presence of sunlight, green leaves change air and water into food in the form of starch. Make a chart on the preparation of food by plants.

HD Intellectual

Think Smart

Discuss the following points with a dentist when you visit :

Animals and plants depend on each other for survival. Animals need food to eat and oxygen to breathe. Plants give animals both food and oxygen. We also use this oxygen for breathing. Then, what should we do for the plants in turn ?

CC Cross Curricular

Subject Link (Social Studies)

Which words in the poem mean the same as the words given below? Write them on the blanks given.

1. Circular ..... round .....
2. Seven days .....
3. Small .....
4. A few .....
5. Fit .....
6. Flower

LITTLE BROWN SEED

Little brown seed, round and sound
Here I put you in the ground.
You can sleep a week or two,
Then—I'll tell you what to do :
You must grow some downward roots,
Then some tiny upward shoots.
From those green shoots' folded sheaves,
Soon must come some healthy leaves,
When the leaves have time to grow,
Next a bunch of buds must show,
Last of all, the buds must spread,
Into blossoms white or red.
There, Seed! I've done my best,
Please to grow and do the rest.

—**Rodney Bennett**

7

Plant Adaptations

What We Have Learnt?

- Useful products from plants

What We Will Learn?

- Terrestrial plants
- Aquatic plants
- Insectivorous plants
- Non-green plants
- Uses of plants

Get Set GO!

Look at the pictures of plants given below. Where do you think each plant grows : mountain, plain, water or desert. Write the answer in the spaces provided.

We can see plants everywhere. They grow on land, in water, on ocean shore, in ponds, on hilly regions and even in deserts. The plants adapt according to the conditions of the environment. The special features acquired by an organism to adjust itself in a habitat are called adaptations.

Word Bank

Adapt : To adjust in a new living condition.

Plants differ from each other depending on the surroundings of their habi
Plants can be divided into two main groups – terrestrial plants and aqua
plants.

TERRESTRIAL PLANTS

Plants that grow on land are called terrestrial plants. There are different typ
of terrestrial plants which grow in different habitats, such as mountains a
hills, deserts, plains, marshy areas, coastal areas, etc.

Plants In Mountain And Hills

Plants of mountains and hillys have special features :

- They are straight, tall and cone shaped.
- These trees do not have flowers.
- They have woody cones.
- These trees have needle-like leaves.
- Branches of these trees are sloping, so that snow slides off easily during the cold winter months.
- Mountain trees have a waxy coating on leaves to avoid any damage from snow.

Pine tree

Fir tree

Examples of such plants are pine, cedar, spruce, fir, etc.

Neem

Gulmohar

Plants In Plains

These plants grow in plai
flat, surface of the earth. Plant
in plains have vast varieti
The climatic conditions ar
moderate. Trees of plains ha
many branches and shed the
leaves periodically, that is, i
autumn. Some of them ca
survive in very hot climat
Neem, peepal, ashoka, gulmohar, sheesham, sal, mango, etc. are the example
of such plants.

Plants In Desert

There is shortage of water in desert. It rains very less there. Sometimes, there is no rainfall. Plants in desert can survive even in less water. They have adapted themselves to store water.

Knowledge ZONE

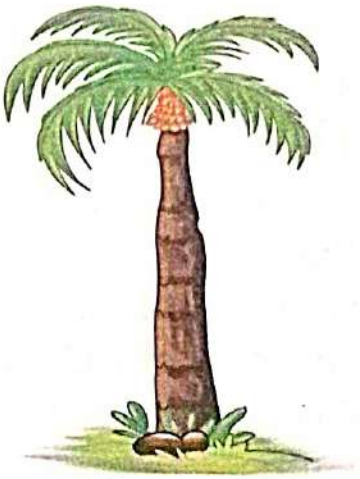
Leaves of the trees of the desert areas are very thin because this prevents loss of water through the leaves.

Following are the features of plants found in desert :

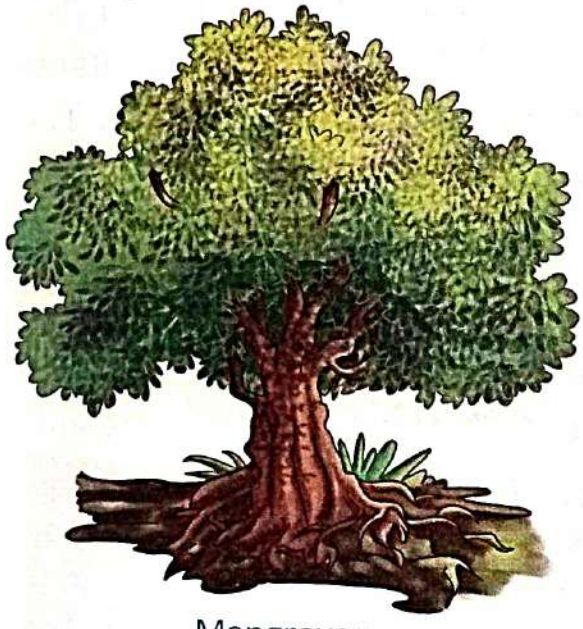
- Plants of desert area do not have any leaves or have very few leaves.
- Leaves found in them are very thin.
- Photosynthesis is carried out by green stem.
- Most of these plants have thorns.

They have the ability to store water in their stem. So, stems become fleshy.

Cactus, keekar, babul, date palm, etc. are examples of desert plants.



Date palm



Mangroves

Plants In Marshy Areas

Areas near the sea are called marshy areas. Marshy areas are also called swampy areas. Soil of marshy area is very sticky and clayey. These plants have roots above the ground because they do not get air as the soil is full of water. Such roots are also called breathing roots. The plants which grow in marshy areas are called mangroves.

Coconut tree

Plants In Coastal Areas

Areas near the sea are called coastal areas. These areas have heavy rainfall and salty water. The climate is usually humid. Plants that are found in sea coast areas are coconut, pepper and rubber.

QUICK TEST

Answer these questions.

1. In how many groups can plants be divided? Name them.
2. Give two examples of terrestrial plants.

AQUATIC PLANTS

Plants that grow in water are called aquatic plants. There are three main types of aquatic plants. These are floating plants, fixed plants and underwater plants.

Floating Plants

Plants that float on water are called floating plants. Roots of these plants are not fixed to the mud of the pond. These plants are light and spongy due to which they float. Duckweed and water hyacinth are the examples of floating plants.

Water hyacinth

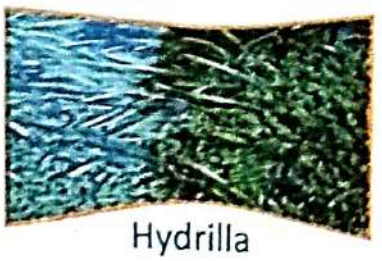
Water lily

Fixed Plants

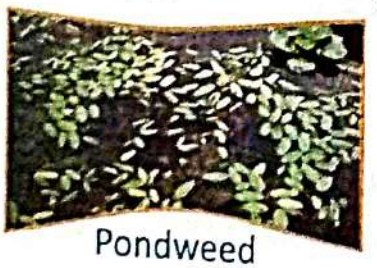
Plants which remain fixed to the bottom of the water body are called fixed plants. These plants have long hollow stem and spongy leaves. The leaves of fixed plants have many pores and a waxy surface. These prevent them from rotting. Lotus and water lily are the examples of fixed plants.

Underwater Plants

These plants are fixed to the bed of the water bodies by their roots. They have thin and narrow leaves without stomata. These plants breathe through their body surface. These plants move with the water current. They have very delicate shoot. Examples of underwater plants are hydrilla, pondweed, tape grass, etc.



Hydrilla



Pondweed

Knowledge ZONE

The hollow stems of lotus are called kamalkakri. This is eaten as a vegetable.

INSECTIVOROUS PLANTS

Plants that eat small insects as their food are called insectivorous plants. Their leaves are modified to trap insects. Venus flytrap, sundew and pitcher plants are examples of insectivorous plants.

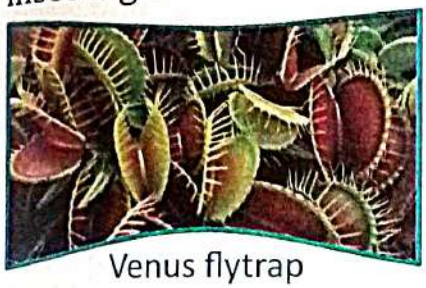
Venus flytrap has leaves with two flaps. Each flap has long teeth. When an insect lands on a leaf, the flaps close and trap it. The leaf cells produce juices that help the plant to digest the insect.

Pitcher plant catches insects inside the pitcher. The insect dies and breaks down and then is digested by the plant.

The leaves of sundew plant have many small hair. These are very sticky and insects get stuck on these hair. Then these hair around the insects get closed and hold them tightly.

PUT ON YOUR THINKING CAP

Find out the name of the longest grass on the earth.



Venus flytrap

Pitcher plant

Sundew

NON-GREEN PLANTS

Most of the plants are green in colour. But some plants are non-green also. Non-green plants do not have chlorophyll in their leaves. Such plants do not make their food. They usually absorb food from other dead plants and animals. They are called saprophytic plants.

Mushrooms, toadstools and moulds are the examples of non-green plants.

Mushroms

Toadstools

Moulds on bread slice

USES OF PLANTS

Plants are very useful to us. Plants give us many things which we use in our daily life.

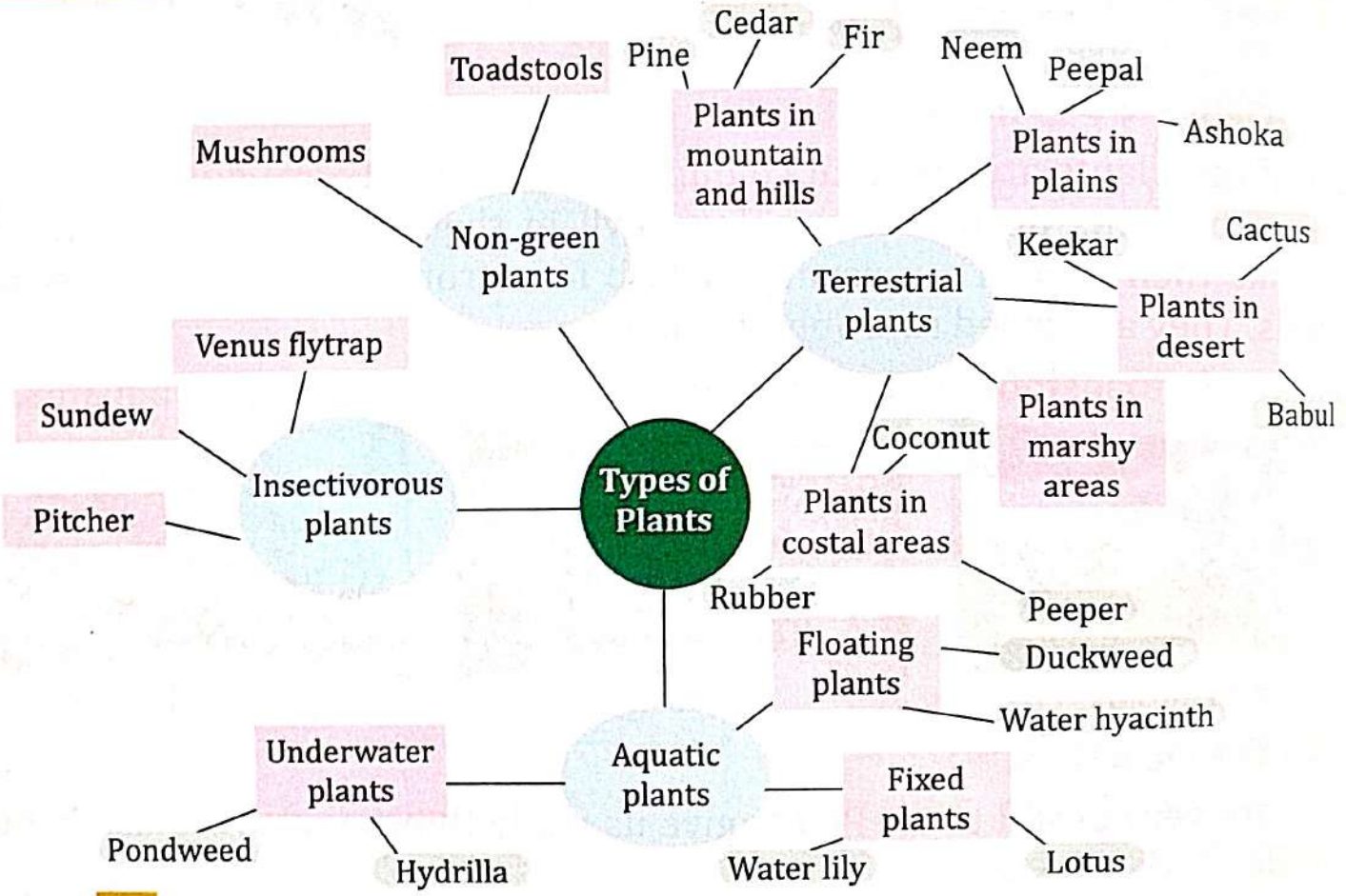
- We get food from the plants. Fruits, vegetables, oil, sugar, pulses, cereals, nuts, spices, tea, etc. are provided by the plants.
- Plants give us wood to make furniture, doors and windows.
- Cotton and jute are fibre giving plants. Fibre is used to make clothes, carpet, sacks, ropes, etc.
- Soaps and shampoos have oils which are also obtained from plants.
- Some plants also have medicinal values. Mint, cinchona, neem, eucalyptus, etc. give us important medicines.
- The juice of Keekar tree is used to make gum.
- Bamboo plants are used to make paper.
- Coconut plant gives us coconut oil, coconut water as well as coconut fruit to eat.

QUICK TEST

Fill in the blanks with the correct words.

1. Areas near the sea are called ..... areas.
2. The keeker tree is used to make ..... .
3. Bamboo plants are used to make ..... .

MIND MAP



EXERCISES

I. Objective Type Questions

A. Tick (✓) the correct option.

1. Plants that grow on land are called :
   (a) terrestrial ☐ (b) aquatic ☐ (c) non-green ☐
2. Which one of the following is a terrestrial plant?
   (a) Duckweed ☐ (b) Water hyacinth ☐ (c) Neem ☐
3. Which of the following is not a plant of hilly area?
   (a) Pine ☐ (b) Deodar ☐ (c) Mango ☐
4. Which of the following is not a plant of desert area?
   (a) Cactus ☐ (b) Babul ☐ (c) Coconut ☐
5. Which of the following is found in coastal area?
   (a) Rubber ☐ (b) Neem ☐ (c) Water lily ☐

B. Fill in the blanks with the correct words.

1. The special features acquired by an organism to adjust itself in a habitat are called ..... .
2. Plants that grow on land are called ..... .
3. There is shortage of ..... in desert.
4. Plants that float on water are called ..... .
5. ..... plants breathe he through their body surface.

C. State whether the following statements are True or False.

1. All plants remain green all year around. ☐
2. Cactus, pine and cedar are aquatic plants. ☐
3. Mangroves have breathing roots. ☐
4. Water hyacinth is a floating plant. ☐

II. Very Short Answer Type Questions

D. Write two examples for each of the following.

1. Underwater plants ....
2. Insectivorous plants ....
3. Fixed plants ....
4. Floating plants ....

E. Write one word for the following.

1. Plants that grow on land .....
2. Plants that trap and eat insects .....
3. Plants that absorb food form dead plants and animals. .....
4. Plants having leaves that remain green almost all year round .....

III. Short Answer Type Questions

F. Answer the following questions briefly.

1. Name a saprophytic plant.
2. What is adaptation?
3. What are non-green plants?

IV. Long Answer Type Questions

G. Answer the following questions in detail.

1. Write note on terrestrial plants with examples.
2. Write properties of the plants of marshy areas.
3. Write the difference between terrestrial plants and aquatic plants.
4. What are insectivorous plants? Explain with example.

CREATIVE CORNER

HOTS Question

21st CS – Critical Thinking

Komal's father has brought a big aquarium for their home. He wants some real plants to be grown inside the aquarium, so that the fishes get oxygen to breathe naturally. Which of these should be kept inside the aquarium- water hyacinth, duckweed or tape grass? Give reasons.

Picture-based Activity

21st CS – Digital Resources

Look at the picture given alongside and identify the plant.
Explore internet to know about it.

Think Smart

EL Experiential Learning

Following are the ways to look after an indoor plant :

- Keep a plate under a pot which has a plant.
- Water the plant regularly.
- Keep it near a window so that it gets sunlight.
- Remove the yellow leaves at regular intervals.
- Transfer it to verandah after a few days.

Subject Link (Social Studies)

CC Cross Curricular

Different trees grow in different regions. Tick (✓) the correct answer to show which type of forest is found in which region.

1. ***Thorn forests*** are mostly found in desert regions.
   In India, they would be found in Kerala/Rajasthan.
2. ***Tidal forests*** are mostly found in deltas of rivers and areas flooded by sea water.
   In India, they would be found in Madhya Pradesh/Assam.
3. ***Mountain forests*** are mostly found in high mountainous regions.
   In India, they would be found in Bihar/Kashmir.

CHAPTER 8

Animals and Their Young Ones

What We Have Learnt?

- Domestic animals
- Wild animals
- Homes and foods of wild animals

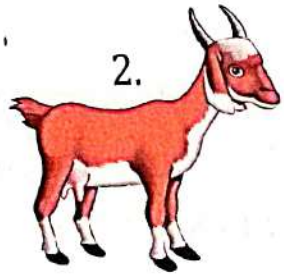
What We Will Learn?

- Egg-laying animals
- Animals which give birth to babies

Get Set GO!

Look at the pictures given below. Match the animals to their young ones and answer the questions that follow:

1. 

2. 

3. 

4. 

(a) 

(b) 

(c) 

(d) 

1. Do all the young animals look like their parents? .....
2. Are they of the same size as their parents? .....

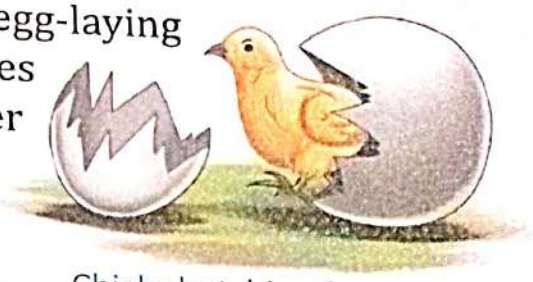
All living things are born from their parents. The process by which animals produce their young ones is called reproduction.

Different animals reproduce in different ways. We can divide them into two categories:

- Animals which lay eggs.
- Animals which give birth to babies.

EGG-LAYING ANIMALS

Animals that reproduce by laying eggs are called egg-laying animals. Birds, insects, fish, frogs, lizards, snakes and turtles are all egg-laying animals. The mother animal sits on their eggs to keep them warm. This is called incubation. Once the babies in the eggs are fully formed, they break the egg shell and come out. This process is called hatching.



Chicks hetching from eggs

Birds

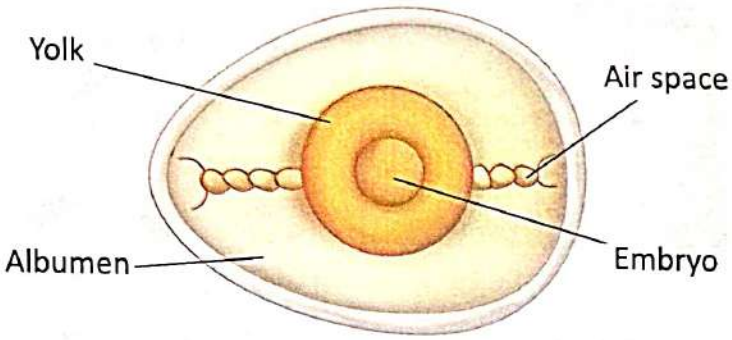
All birds also reproduce by laying eggs. Most of the birds lay eggs in their nests. Within the egg, embryo passes through many stages. Embryo gets food from yolk and grows into an adult. These developing stages of an embryo are called life cycle.

Knowledge ZONE

Egg of ostrich is the largest egg in the world.

Structure Of An Egg

The outer covering of an egg is known as a shell. Within the shell there is a sticky white fluid. This fluid is called albumen. Inside the albumen is the yellow round yolk. If you observe the yolk carefully, you will notice a red spot in it. This red spot grows into an embryo or baby. The baby draws its food from the yolk. As the baby grows inside, the yolk diminishes. When the baby is fully grown and ready to face the world, the egg shell breaks and the baby comes out.

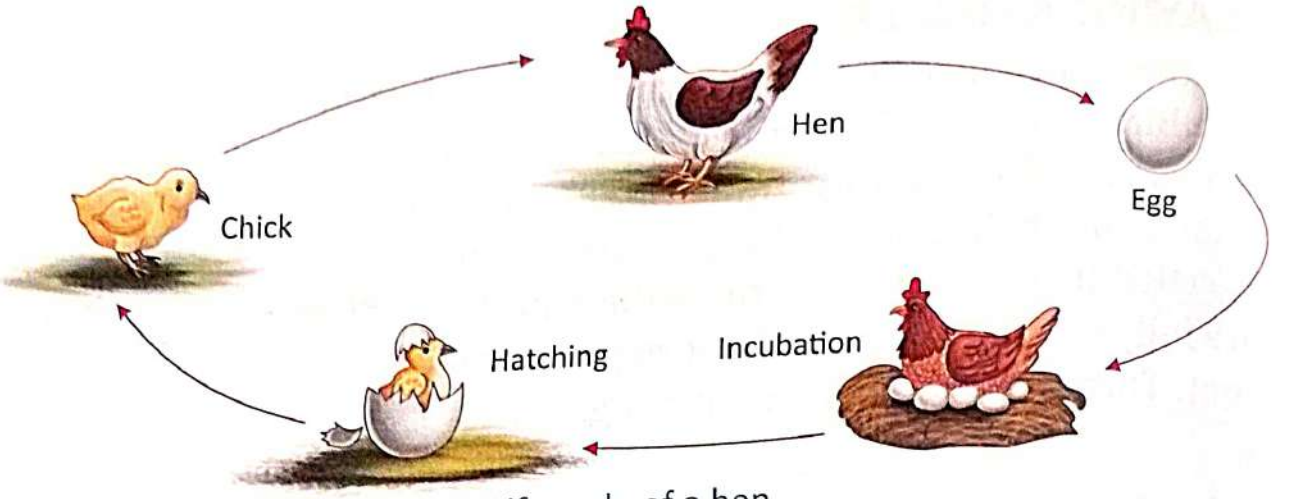


An egg's structure

Hen

The hen lays eggs. After laying eggs, it sits on the eggs to keep them warmth. This is called the incubation period. After getting continuous warmth, the young chick grows fully and hatches out of the egg.

The chick forms and grows inside the yolk part of the egg. The growing chick is called an embryo which gets its food from the yolk. The embryo develops into a chick.

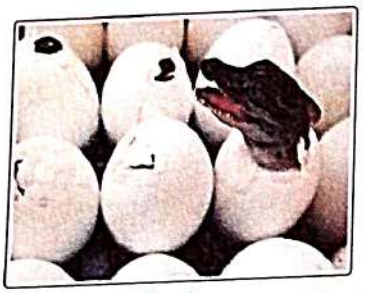


Life cycle of a hen

Fishes

A fish lays in water. The eggs of a fish are called spawn. Out of thousands of eggs only a few hundred develop into small fishes. Many eggs and small fishes are eaten by big fishes.

Snake in an egg



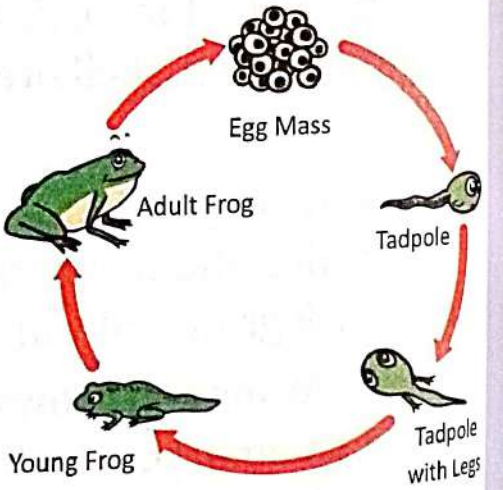
Crocodile in an egg

Reptiles

Reptiles like snakes, turtles, lizards and crocodiles lay their eggs on the ground. Their eggs are protected in the shells. The eggs are warmed by the heat of the sun. The shells of their eggs are not very hard. Most of these animals do not care for their eggs or babies. Some of these are eaten by other animals.

Frogs

Frogs also lay eggs. They shed their eggs in water in safe places and take care of the babies only for some time. The frog's eggs hatch into tadpoles. Tadpoles grow into frogs.



Life history of a frog

QUICK TEST

Fill in the blanks with the correct words.

1. The outer covering of an egg is known as ..... .
2. Inside the ..... in the yellow round yolk.
3. The embryo develops into a ..... .

ANIMALS WHICH GIVE BIRTH TO BABIES

Lion

Dolphin

Some animals give birth to young ones and feed them with their own milk. These animals are called mammals. They have very-well developed brain. Most mammals have hair on their body. Hippopotamus, dogs, lions, cats, elephants, deer, cows, giraffes, monkeys, horses, etc. are some examples of mammals.

They live on land. They breathe through lungs. Some mammals like whale or dolphin live in water. They breathe through lungs. They come out from water many times to breathe in air.

Mammals Care For Their Young Ones

Mammals take care of their young ones for a long time. They keep their babies clean and warm.

Human beings

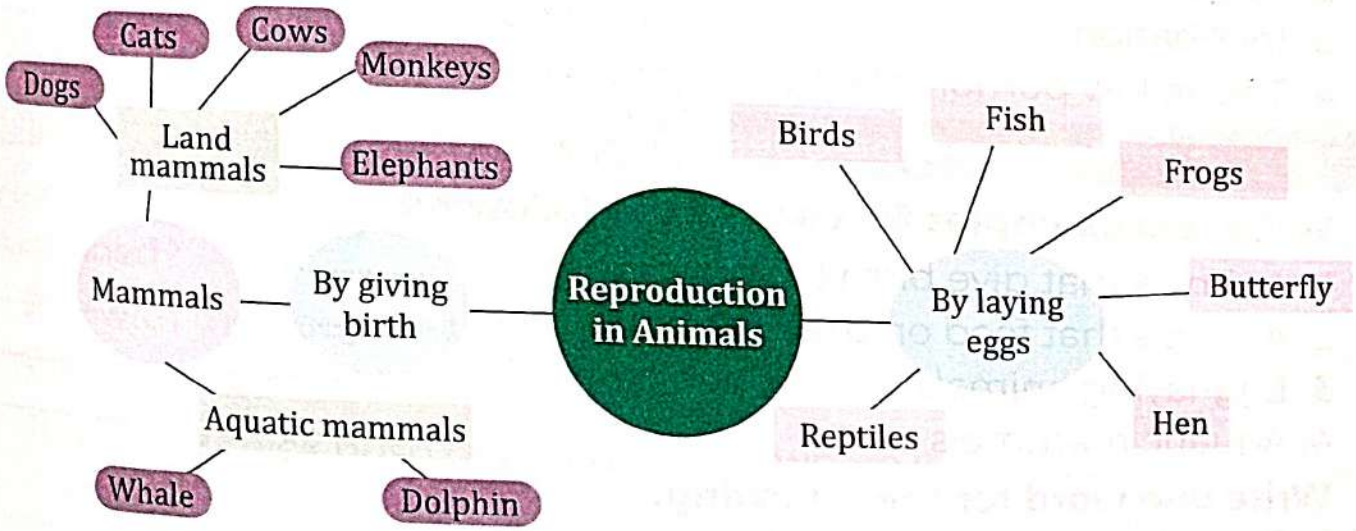
They make houses to protect their babies from enemies, rain, etc. Parents teach babies to survive in the environment.

QUICK TEST PUT ON YOUR THINKING CAP

Fill in the blanks with the correct words.

1. Most mammals have ..... on their body.
2. Most of the mammals live on ..... .
3. Some mammals like dolphin live in ..... .

MIND MAP



EXERCISES

I. Objective Type Questions

A. Tick (✓) the correct option.

1. Animal which gives birth directly to young ones is called :
   (a) mammal ☐ (b) incubation ☐ (c) hatching ☐
2. Who have well developed brain?
   (a) Mammals ☐ (b) Birds ☐ (c) Insects ☐
3. Which one of these is an egg laying animal?
   (a) Hen ☐ (b) Human ☐ (c) Horse ☐
4. The chick grows inside the :
   (a) yolk ☐ (b) albumen ☐ (c) embryo ☐

B. Fill in the blanks with the correct words.

1. The process by which animals produce their young ones is called ..... .
2. Human beings and dogs are the examples of ..... .
3. Birds and frogs are all ..... animals.
4. The ..... forms and grows inside the yolk part of the egg.

C. Match the following.

1. Mammals	(a) warmth
2. Birds	(b) yolk
3. Incubation	(c) babies
4. The yellow portion of egg	(d) egg-laying

II. Very Short Answer Type Questions

D. Write two examples for each of the following.

1. Animals that give birth to young ones ....
2. Animals that feed on their mother's milk ....
3. Egg-laying animals ....
4. Aquatic mammals ....

E. Write one word for the following.

1. The thin protective shell of an egg .....

2. Most of the mammals live on .....
3. The growing chick is called .....

III. Short Answer Type Questions

F. Answer the following questions briefly.

1. Which part of the egg is rich in protein?
2. What do you mean by incubation?
3. Why does a frog lay its eggs in water?

IV. Long Answer Type Questions

G. Answer the following questions in detail.

1. What is reproduction? Write different kinds of reproduction.
2. What are mammals? Write some examples.
3. What do you mean by hatching?
4. Explain and draw the life cycle of a hen.
5. Write a note on the structure of an egg.

CREATIVE CORNER

HOTS Question

21st CS Critical Thinking

15 LIFE ON LAND

Do you think life on the earth would continue if reproduction did not takes place in animals?

Project WORK

21st CS Digital Resources

Make a chart on the life cycle of a butterfly and a housefly. You can take help from the internet.

Think Smart

21st CS Life Skills

Tick (✓) what would you do if you find a baby bird looking helpless and abandoned?

1. Play with the baby bird. ☐
2. Take it home. ☐
3. Take it to a thick bush or a tree nearby where it will be safe. ☐
4. Throw stone at it. ☐

QuickTEST 2

Based on Chapters 5 to 8

A. Tick (✓) the correct option.

1. Strong wind and heavy rain cause :
   (a) deforestation ☐ (b) afforestation ☐ (c) soil erosion
2. Which of these is not required during photosynthesis?
   (a) Sunlight ☐ (b) Water ☐ (c) Smoke
3. Which of the following is not a plant of desert area?
   (a) Cactus ☐ (b) Babul ☐ (c) Coconut
4. Animal which gives birth directly to young ones is called :
   (a) mammal ☐ (b) incubation ☐ (c) hatching

B. Fill in the blanks with the correct words.

1. The removal of fertile topsoil is called ..... .
2. Birds and frogs are all ..... animals.
3. Stomata help the plants to ..... .
4. Plants that float on water are called ..... .

C. Match the following.

1. Loamy soil	(a) tiny holes in the underside of a leaf
2. Stomata	(b) flattened part of a leaf
3. Clayey soil	(c) Contains sand and clay
4. Leaf blade	(d) can hold a lot of water

D. Write one word for the following.

1. Plants that grow on land .....
2. Protection of soil from erosion .....
3. The thin protective shell of an egg .....
4. The flat part of the leaf .....

E. Answer the following questions briefly.

1. Name the vein that runs through the middle of a leaf.
2. Why does a frog lay its eggs in water?
3. What is crop rotation?
4. What are non-green plants?

F. Answer the following questions in detail.

1. Give any three ways by which we can protect soil.
2. What is reproduction? Write different kinds of reproduction.
3. Write the functions of a leaf.
4. Write properties of the plants of marshy areas.

CHAPTER 9

Animal Adaptations

What We Have Learnt?

- Eating habits of animals
- How do animals eat?
- Food chain

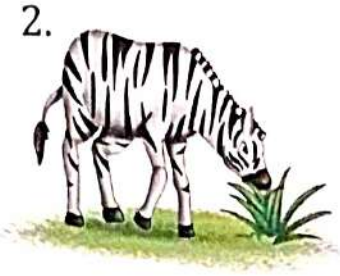
What We Will Learn?

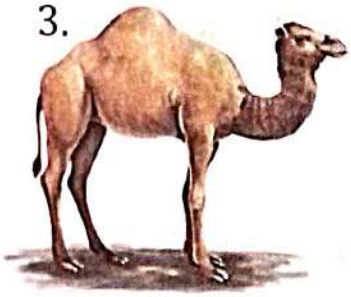
- Adaptations to environment
- Adaptations for food
- Adaptations for protection
- Extinct and endangered animals

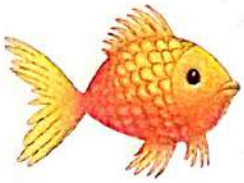
Get Set GO!

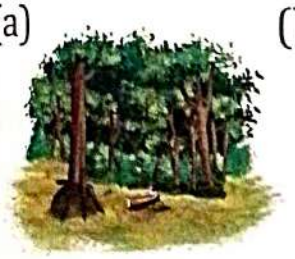
Match the animals with their habitats.

1. 

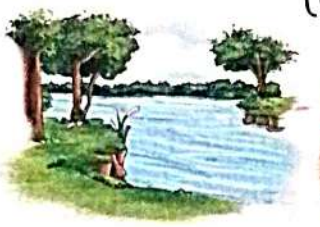
2. 

3. 

4. 

(a) 

(b) 

(c) 

(d) 

Similar to plants, animals adapt themselves to different types of surroundings to survive. Let us learn about the adaptations of different animals.

ADAPTATIONS TO ENVIRONMENT

The natural environment in which an animal lives called its habitat. On the basis of habitats, the animals are classified as ahead :

Terrestrial Animals

Animals that live on land are called terrestrial animals. They spend most of their time on land. The bodies of such animals and their habits are suitable for the life on land. The climatic conditions on land are different at different places. It is very cold at mountains and polar regions and hot in deserts.

Animals of cold areas have thick fur on their body. Yak, polar bear, etc. are animals that live in cold places.

Some animals such as seal, walrus and penguin are adapted to live in freezing condition. They have a thick layer of fat called blubber under their skin to keep their body warm.

Camel lives in the desert. It has a hump in which it stores the fat. Water is very scarce in the desert, so it lives on the fat stored in the hump and can survive without food and water for many days.

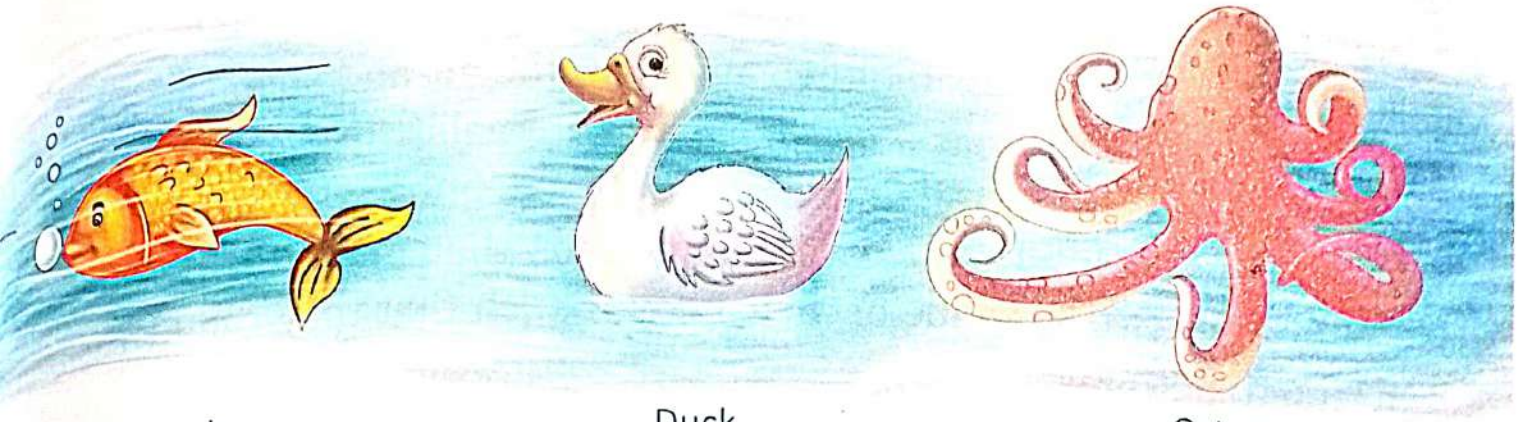
Tiger

Polar Bear

Terrestrial animals have legs to move from one place to another. Some animals do not have legs. They move through muscles and scales on their body. Most of the land animals breathe through lungs.

Aquatic Animals

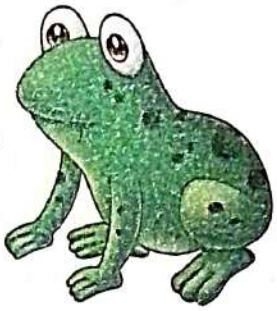
Animals that live in the water are called aquatic animals. Fishes, turtles, octopus, crabs, seahorse, snail, etc. are some examples of aquatic animals. Most of the aquatic animals breathe through gills. But some aquatic animals breathe through lungs like whale and dolphin. Aquatic animals have suitable limbs to swim in water. These are fins or paddles. Ducks have paddles and fish have fins to swim. Ahead are some pictures of aquatic animals :



Fish Duck Octopus

Amphibians

Amphibians spend their lives partly on land and partly in water. Frogs, toads, newts, salamanders, etc. are amphibians. They have lungs which help them to breathe on land. They can breathe through their moist skin in water. They have limbs that help to swim. Their back legs are stronger to jump on land. They have webbed feet that help them to swim in water.



Frog

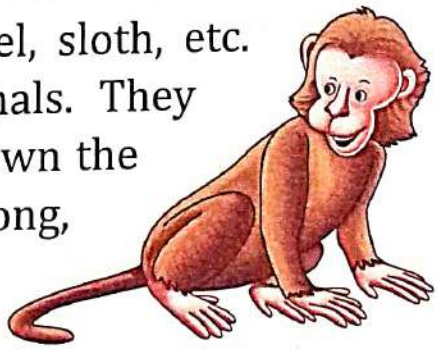
QUICK TEST

Fill in the blanks with the correct words.

1. The natural environment in which an animal lives called its ..... .
2. Animals that live in water are called ..... .
3. ..... spend their lives partly on land and partly in water.

Arboreal Animals

Animals that mostly live on trees are called arboreal animals. Monkey, koala bear, squirrel, sloth, etc. are the examples of arboreal animals. They have sharp claws to climb up and down the branches of trees. They have strong, muscular and long tail for holding on to the branches.



Monkey

Koala bear

Aerial Animals

Bird

Bee

Animals that live mostly in the air and spend a lot of time in the air are called aerial animals. Birds, insects, bats, etc. are aerial animals. They have limbs modified as wings to fly. They have hollow bones that make their body light. The shape of their body is such that they can fly easily in the air.

QUICK TEST

Answer these questions.

1. What is habitat?
2. Give two examples of arboreal animals.

ADAPTATIONS FOR FOOD

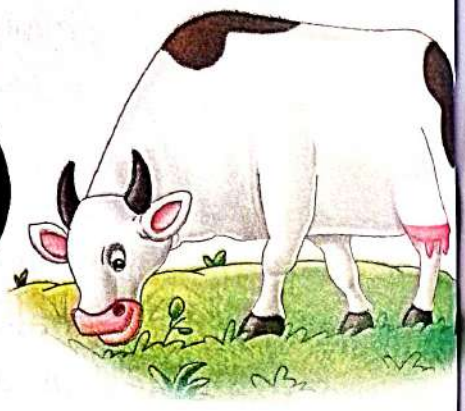
Different animals eat different types of food. Some animals eat plants. Some animals eat flesh of other animals. The mouth parts and limbs are also featured according to their food habit. On the basis of food habit, animals can be divided into different types:

Knowledge ZONE

- The lungfish has both lungs and gills to breathe.
- Bat is a mammal that can fly.

Herbivorous Animals

Plant eating animals are called herbivorous animals. Zebra, cow, buffalo, sheep, horse, etc. are herbivorous animals. Such animals have sharp cutting teeth for biting food and very strong grinding teeth.



Cow

Lion

Carnivorous Animals

Flesh eating animals are called carnivorous animals. Lion, tiger, jackal, lizard, etc. are carnivorous animals. Such animals have sharp tearing teeth for tearing the flesh. They also have sharp claws to catch their prey.

Omnivorous Animals

Animals that eat flesh and plants both are called omnivorous animals. Some omnivorous animals are man, crow, bear, etc.

Vulture

Bear

Scavengers

Some animals depend on dead animals for their food. These animals are called scavengers. Vulture, hyena, hawk, etc. are scavengers.

Parasites

Parasites are such animals that live on or inside the bodies of other animals for their food. They get their food by sucking the blood of host animals. Mosquito, leech, hookworms, etc. are parasites. The animals on which parasites depend are called host animals.

Leech

Word Bank

Parasites : animals that depend on others for survival

ADAPTATIONS FOR PROTECTION

Animals have adapted themselves in many interesting ways to protect themselves from their enemies.

- Some animals move fast to escape from their enemies. Rats, rabbits and deer are such animals.
- Elephant and hippopotamus are big in size. Their size scares their enemies.
- Some animals can change their body colour according to their surroundings to confuse their enemies. This feature is known as camouflaging. The chameleons can change their colour according to their surroundings.

Some animals like zebra, arctic fox, polar bears, frogs, grasshoppers, stick insects, etc. can hide themselves because of the colour of their skin.

Word Bank

Scare : to frighten some body

EXTINCT ANIMALS

Many animals lived years and years ago. These animals could not change themselves according to the surroundings and hence, became extinct. Some examples of extinct animals are dodo, mammoth, monk seals etc.

Dodo

Mammoth

ENDANGERED ANIMALS

Many animals are in danger due to the destruction of forests by human beings for their needs. The numbers of some animals such as tigers, cheetahs, giant pandas and Indian rhinoceros are fast declining and they may soon disappear completely from the Earth. These animals are called endangered animals.

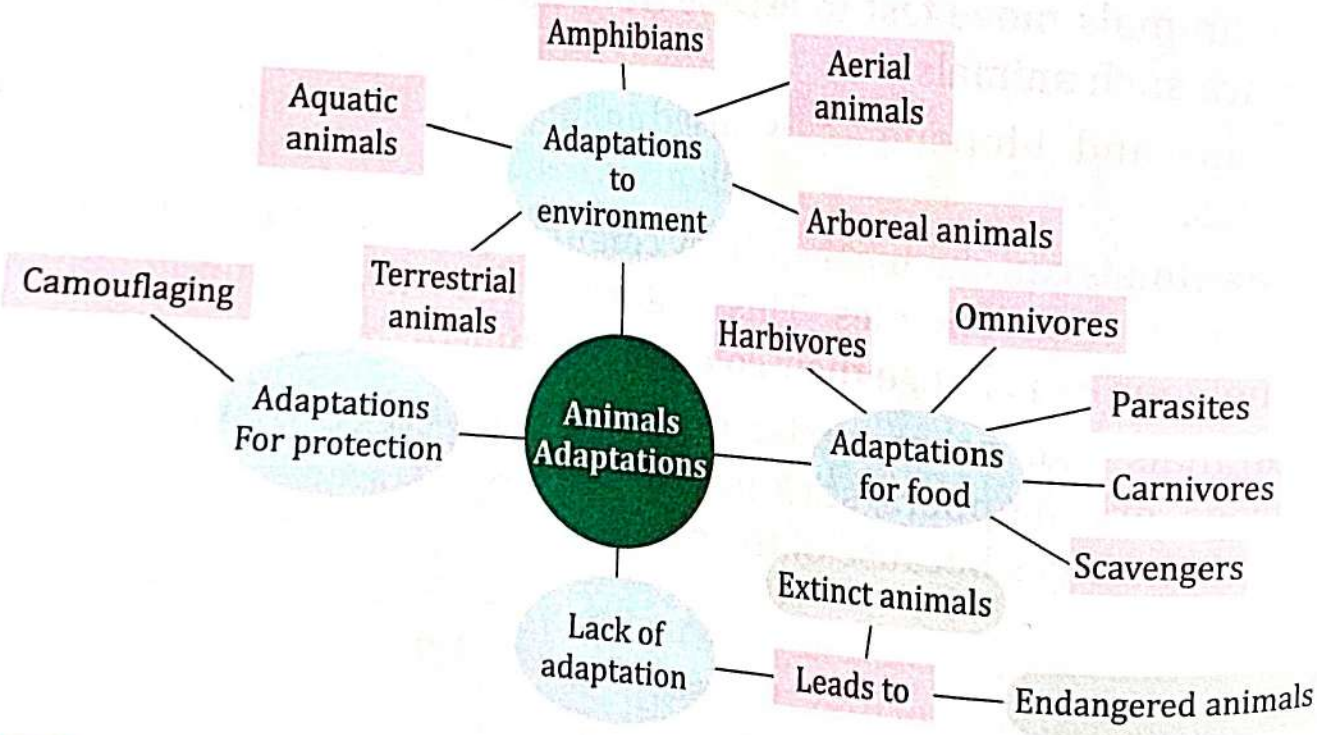
FUN Activity

HD Observation

Why do cockroaches come out in winter?

Find a cockroach and gently turn its upside down. Now, observe how much time it takes to move like a normal.

MIND MAP



EXERCISES

Objective Type Questions

Tick (✓) the correct option.

1. Animals of which area have thick fur on their body?
   (a) Hot region ☐ (b) Cold region ☐ (c) Moderate region ☐
2. The breathing organ of fish is :
   (a) gills ☐ (b) lungs ☐ (c) fins ☐
3. Which of the following has paddle to swim?
   (a) Duck ☐ (b) Fish ☐ (c) Frog ☐
4. Which of the following is not an arboreal animal?
   (a) Monkey ☐ (b) Koala bear ☐ (c) Elephant ☐
5. Which of the following is an extinct animal?
   (a) Dodo ☐ (b) Elephant ☐ (c) Tiger ☐

Fill in the blanks with the correct words.

1. Animals adapt themselves to ..... .
2. Animals that live on the land are called ..... .
3. Aquatic animals have suitable ..... to swim in water.
4. Animals that mostly live on trees are called ..... .
5. Animals that depend on dead animals for their food are called ..... .

Match the following.

1. Elephant	(a) parasite
2. Crow	(b) camouflaging
3. Chameleon	(c) extinct
4. Leech	(d) aerial
5. Dodo	(e) terrestrial

State whether the following statements are True or False.

1. Animals that live on land are called terrestrial animals. ☐
2. The natural environment in which an animal lives called its habitat. ☐

3. Hyena is a scavenger.
4. Plant eating animals are called carnivorous animals.

II. Very Short Answer Type Questions

E. Write two examples for each of the following.

1. Terrestrial animals ....
2. Arboreal animals ....
3. Parasites ....
4. Animals that have ability to camouflage ....

F. Write one word for the following.

1. Animals that live mostly on trees. .....
2. The ability of changing colour to merge with surroundings. .....
3. The thick layer of fat under the skin of some animals to keep their body warm. .....

III. Short Answer Type Questions

G. Answer the following questions briefly.

1. How is camel adapted to live in a desert?
2. Give an example of endangered animal.
3. What is camouflaging?

IV. Long Answer Type Questions

H. Answer the following questions in detail.

1. What are terrestrial animals?
2. How do animals of cold areas adapt to their environment?
3. Write the features of arboreal animals.
4. How do animals protect themselves from their enemies?
5. Describe the adaptations of amphibians.

CREATIVE CORNER

HOTS Questions

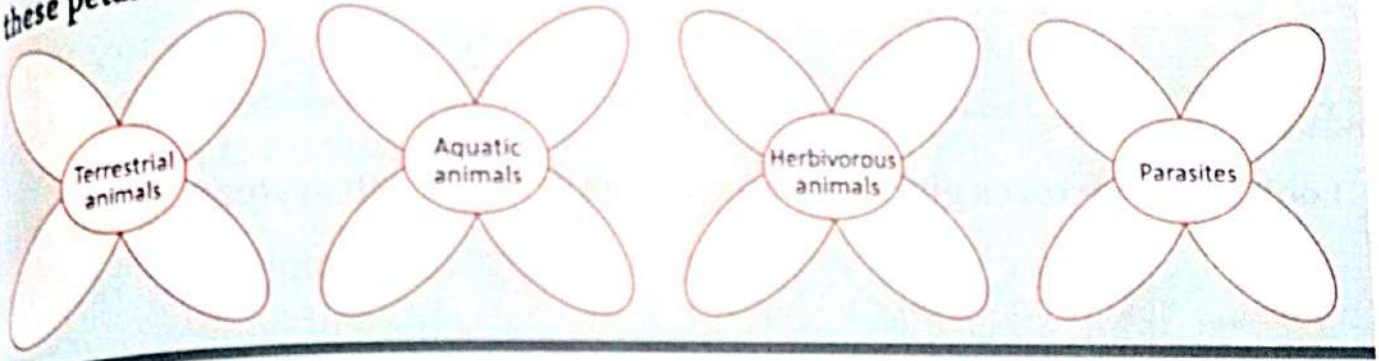
21st CS Critical Thinking

1. Snakes are found almost everywhere. Can you give some special features observed in snakes?
2. Imagine a camel being sent to Siberia, a very cold place. Do you think the camel will be able to survive there? Why?

Picture-based Activity

AI Art Integration

Complete the flowers by writing four names of animals from each group. Colour these petals with different colours.



Project WORK

21st CS Creativity

Make cutouts of animals. Classify them according to their habitats. Display them on your class bulletin board as 'Animals and their habitats'.

Subject Link (Social Studies)

CC Cross Curricular

Try to remember all the stories you have read. Now name these famous story animals.

1. My name is Black Beauty. I have a white star on my forehead. I am ..... .
2. My name is Moby Dick. My book has the same name. I am a water animal. I am a ..... .
3. My name is Bagheera. I am Mowgli's friend. I am a ..... .

CHAPTER 10

Circulatory and Excretory System

What We Have Learnt?

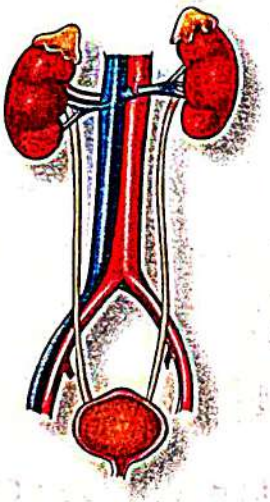
- Human body
- Sense organs
- Various systems of our body

What We Will Learn?

- Circulatory system
- Excretory system

Get Set GO!

Look at the pictures given below and name the organ systems.



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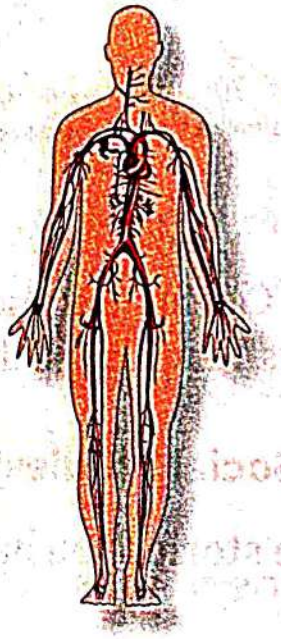


.....

In this chapter, we will learn about circulatory and excretory systems tha help to transport substances and remove wastes formed inside the body.

CIRCULATORY SYSTEM

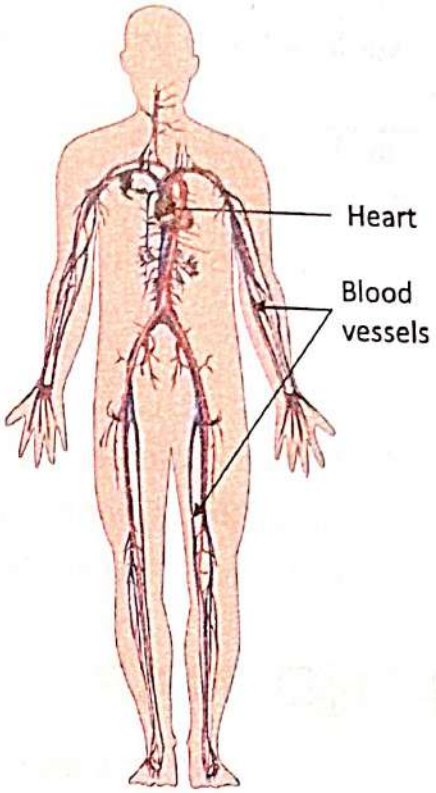
The circulatory system is responsible for transporting oxygen and nutrient to every cell, tissue and organ in the body. This system includes heart, blood and blood vessels.

Heart

The heart is a muscular organ consisting of cardiac muscle. The heart pumps continuously without resting and without becoming fatigued. Its function is to pump blood to the lungs and around the body. The heart is the key organ in the circulatory system.

Blood

Blood is a fluid that is carried by blood vessels to all parts of the body. It forms a medium through which nutrients, water, oxygen, and carbon dioxide are transported inside our body.



Circulatory system

Blood Vessels

Blood vessels are thin tubes that run through the entire body to transport blood. Arteries, veins and capillaries are the three types of blood vessels.

Arteries : carry blood away from the heart.

Veins : carry blood towards the heart.

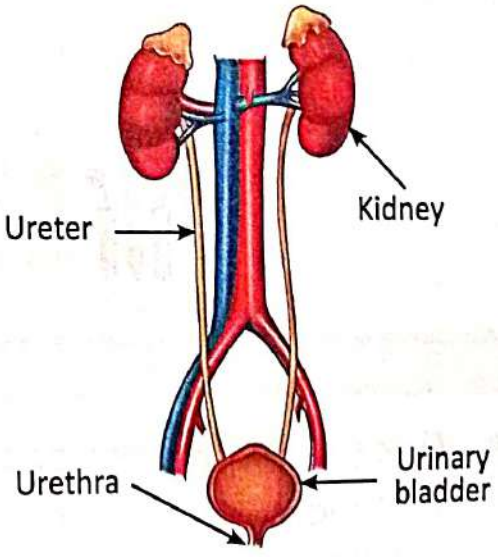
Capillaries : these are delicate blood vessels that exist throughout the body. They transport blood, nutrients and oxygen to cells in your organs and body systems. Capillaries are the smallest blood vessels in your vascular system.

EXCRETORY SYSTEM

The excretory system is an organ system that helps in getting rid of wastes formed inside our body.

The excretory system consists of a pair of kidneys, a urinary bladder, a pair of tubes called ureters, and a urethra.

The formation of urine takes place in kidneys. The urine contains harmful waste products formed inside the body. Ureters carry the urine from the kidneys to the urinary bladder. The urine is stored in the urinary bladder. The urethra helps to pass the urine out of the body.



Excretory system

PUT ON YOUR THINKING CAP

Find out the name of the chemical compound found in human body and also found in chocolates which causes the feel of ecstasy (extreme happiness)?

21st CS Critical Thinking

FUN Activity

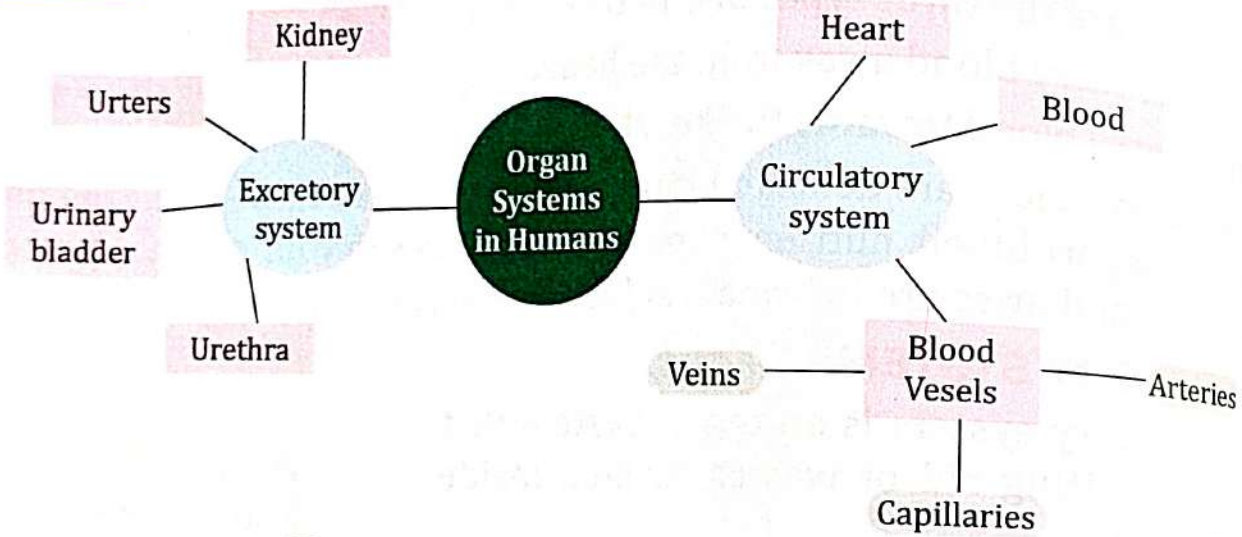
You will be surprised to know that only the human beings sleep on their back.
Now figure out, when does an owl sleep and how does a bat sleep?

QUICK TEST

Write two examples for each of the following.

1. Circulatory system consists of ....
2. Substances transported by blood ....

MIND MAP



EXERCISES

I. Objective Type Questions

A. Tick (✓) the correct option.

1. Which one of the following organ system helps to transport substances?

(a) Circulatory ☐ (b) Nervous ☐ (c) Skeletal ☐

2. Which one of the following is a part of the circulatory system?
(a) Blood ☐ (b) Urine ☐ (c) Ureter ☐

3. Which one of the following is a blood vessel?
(a) Vein ☐ (b) Heart ☐ (c) Urethra ☐

4. Which one of the following is a part of the excretory system?
(a) Blood ☐ (b) Heart ☐ (c) Kidneys ☐

5. Where is urine formed?
(a) Heart ☐ (b) Urethra ☐ (c) Kidneys ☐

Fill in the blanks with the correct words.

1. The human body is made up of many ..... .
2. The heart is the key organ in ..... system.
3. Blood vessels run through the entire body to transport ..... .
4. Blood is a fluid that is carried by blood ..... .
5. The formation of urine takes place in ..... .

Match the following.

1. Blood	(a) One pair
2. Heart	(b) Stored in the urinary bladder
3. Kidneys	(c) Medium to transport substances
4. Urine	(d) A muscular organ that pumps blood

II. Very Short Answer Type Questions

D. Write two examples for each of the following.

1. Organs of the excretory system ....
2. Blood vessels ....

E. Write one word for the following.

1. Blood vessels that carry blood from different organs back to the heart .....
2. Blood vessels that towards the heart .....
3. The body part where urine is stored .....

III. Short Answer Type Questions

F. Answer the following questions briefly.

1. Name any two organ systems of our body.
2. Define the circulatory system.
3. Name the parts of the circulatory systems.

IV. Long Answer Type Questions

G. Answer the following questions in detail.

1. Write a short note on the circulatory system and describe its functions.
2. What is excretory system? Describe the various parts of the excretory system.

CREATIVE CORNER

21st CS Critical Thinking

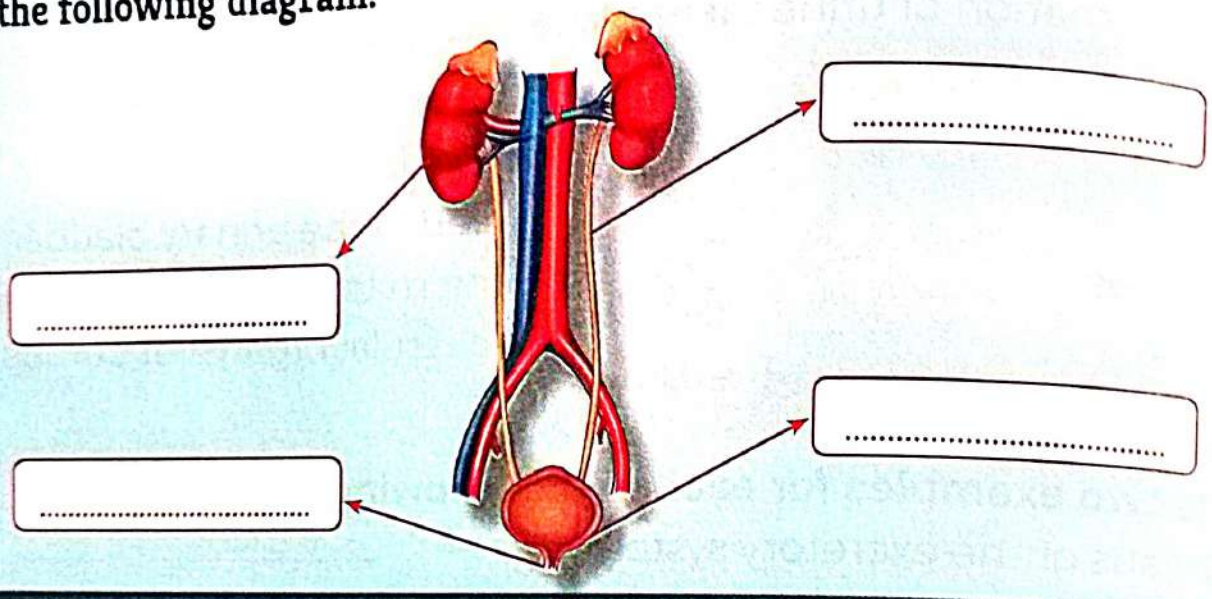
HOTS Question

Why does your heart beat faster when you exercise?

HD Problem Solving

Picture-based Activity

Label the following diagram.



Project WORK

AI Art Integration

Make a model of the excretory system using modelling clay. You can make shapes similar to the organs and colour them using paints. Assemble the different shapes to create an organ system and display it in class.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

CHAPTER 11

Force, Work and Energy

What We Have Learnt?

- Force

What We Will Learn?

- Types of forces
- Work
- Simple machines
- Energy and its sources

Get Set GO!

A push or pull acting on an object is called force. We can move objects or change their shapes by applying force.

Look at the pictures given below, they are applying forces for different purposes.

Force is applied to move a resting object.

Force is used to change the direction of a moving object.

Force is used to change the shape of an object.

Force is applied to slow down a moving object.

TYPES OF FORCES

In the nature, there are two types of forces that are acting all the time. These are frictional and gravitational forces.

Frictional Force

An opposite force that stops the movement of an object is called frictional force. When you ride a bicycle, you stop your bicycle by applying brakes. When brakes are applied, they rub against the wheels and the bicycle stops. It stops because of friction. Friction applies in between a moving object and surface. It slows down the movement of the object.

We apply brakes to stop vehicle

Friction is produced when two bodies comes in contact. It depends upon the nature of the surface. If the surface is rough, the friction will be high. If the surface is smooth, the friction will be less. It is difficult to walk on a very smooth surface as compared to a rough surface. We can slip on a smooth surface as it causes less friction.

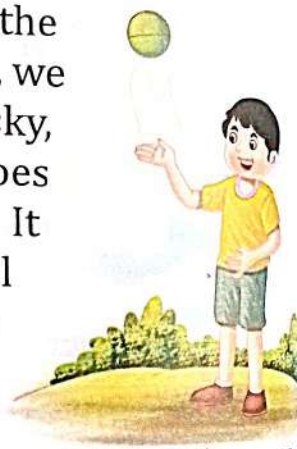
If there is no friction, the moving object will not stop. For example, glass or ice causes very less friction.

Knowledge ZONE

Force of gravity remains active on an object even if it is in rest.

Gravitational Force

Gravity is the force that acts downwards and pulls all the objects towards the centre of the earth. Without gravity, we would be floating around. If you throw a ball in the sky, it will come down to the ground. Everything that goes high, falls back to the ground. It is because of the gravitational force which pulls it towards the earth. This force is called gravitational force.



An object thrown up always comes down

A child kicking a football

WORK

Work is said to be done only when the force move body through a distance. If a force is applied and th object does not move, then it is said that no work i done. For example, when you kick a football, you ar applying force that causes it to move.

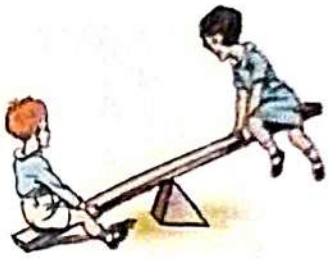
PUT ON YOUR THINKING CAP

Assume that you sit in a chair for 8 hours while working on a computer. But, according to science, your work cannot be termed as 'work'. Find out, why?

SIMPLE MACHINES

Machines are used to make our tasks easy. They can make a tough job seem easier by enabling a person to apply less force.

Some machines are very simple with few or no moving parts. These are called simple machines. There are six types of simple machines :



See-saw

Lever

A lever can help lift a heavy weight, open the lid of a tin or cut things. Bottle opener, a pair of scissors and a rod are the examples of lever. A see-saw on which one child lifts the other child is also a kind of lever.

Inclined plane

Inclined Plane

An inclined plane is a flat surface which is higher on one end. It helps move heavy objects from a high place to low place and from a low place to high place. A simple smooth flat board placed at angle can act as an inclined plane, which is often used to load heavy cartons onto a truck.

Pulley

A pulley is a simple machine with a wheel and a rope. The rope fits around the edge of the wheel. A pulley makes our work easy by changing the direction of the force applied. This means, instead of pulling the load up, you are now pulling the rope downwards.

Pulley

Wheel and axle

Wheel and Axle

A wheel and axle are simple machines made of a rod attached to the centre of a wheel. The axle or the rod turns or rotates when we rotate or put force on the wheel. These are used to carry loads around easily, for longer distance

and with very less effort. Almost all vehicles, roller skates, doorknob a screwdriver are the examples or wheel and axle.

Wedge

A wedge is a simple machine made of two inclined planes joined back to back. It is used to split or cut things. An axe and knife are good examples of a wedge.

Wedge

Screw

Screw

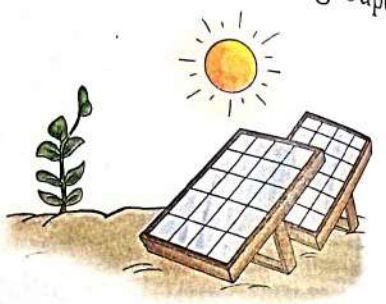
A screw is a simple machine used to hold objects togeth A screw is a pointed nail with grooves in it. This tread grooves is actually an inclined plane wrapped around a sha or cylinder.

ENERGY AND ITS SOURCES

The ability of doing work is known as energy. We need energy to do work We get energy from the food we eat. Energy is required for all works. Energy is used in simple work like walking, talking, reading, etc. It is also used in tough tasks like climbing, lifting, carrying, etc. Energy exists in different forms – solar, wind, heat, light, sound and electricity. It can also be grouped as chemical and mechanical.

Sun

The sun is the main source of energy on the earth. The energy that we get from the sun is called solar energy. We use solar energy in different ways. Plants use solar energy to make their food. This energy is saved in chemical form. Solar energy can be changed into electrical energy with the help of solar cell.



Solar cell

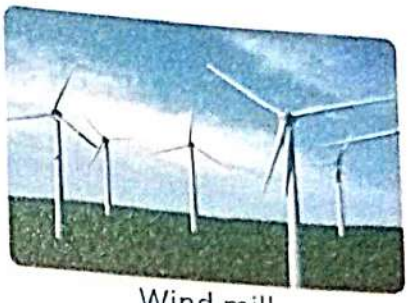
Hydroelectricity power plant

Water

Moving water also produces a lot of energy. This energy is called hydro energy. We build dams to utilize this energy. These dams allow the water to fall with force from a height on to turbines. Turbines in turn then move and help to produce electrical energy.

Wind

Energy from wind is called wind energy. Any moving object has wind energy in it. Wind energy can turn the wind mills. Wind mills in turn can move the machines called turbines. Turbines help to produce electrical energy.



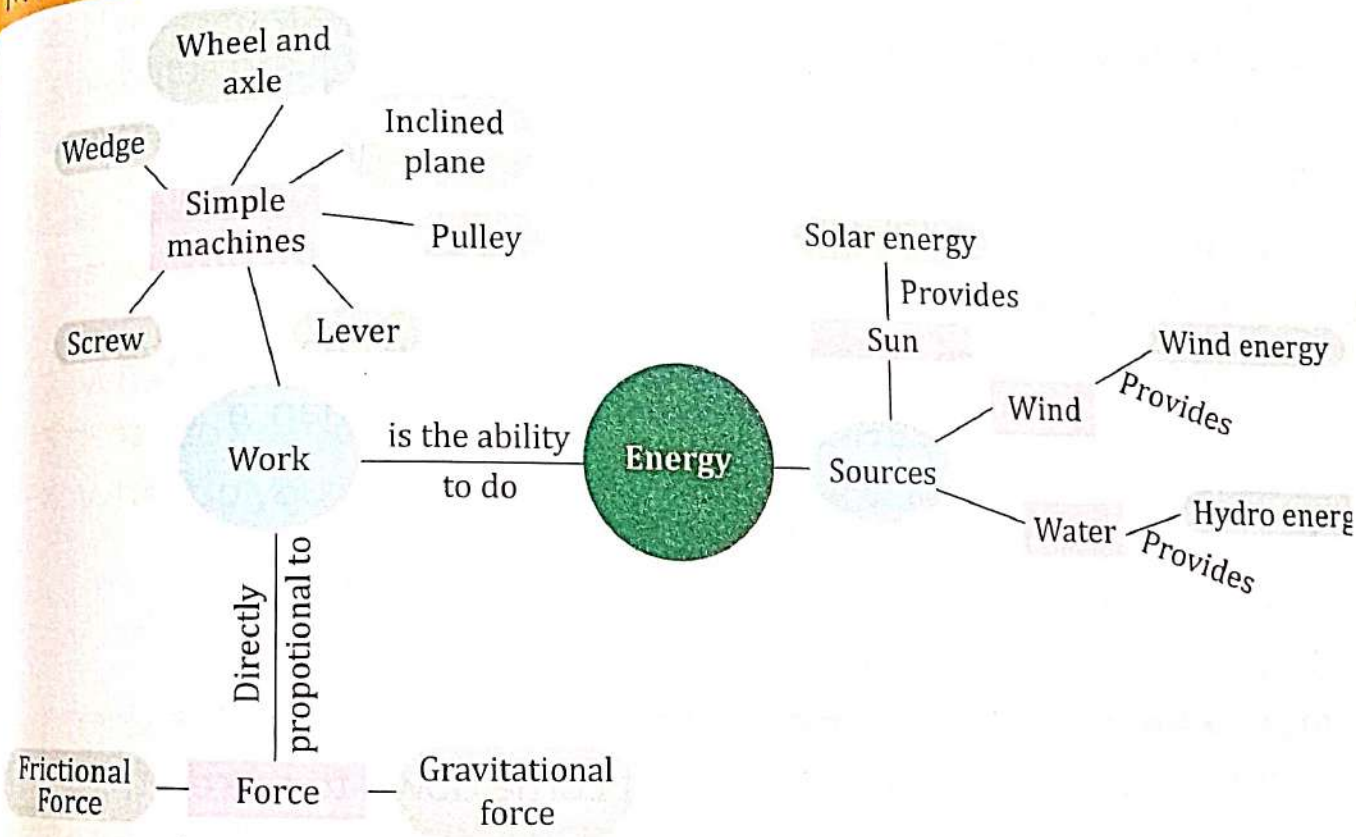
Wind mill

QUICK TEST E

Fill in the blanks with the correct words.

1. ..... are used to make our tasks easy.
2. An ..... is a flat surface which is higher on one end.
3. Energy from wind is called ..... .

MIND MAP



EXERCISES

I. Objective Type Questions

A. Tick (✓) the correct option.

1. A pull or push acting on an object is called :
   (a) force ☐ (b) gravity ☐ (c) work
2. Work is said to be done when the ..... moves from its place
   (a) object ☐ (b) force ☐ (c) energy
3. A pair of scissors is an example of :
   (a) pulley ☐ (b) lever ☐ (c) screw
4. Energy we get from the sun is called ..... energy.
   (a) water ☐ (b) solar ☐ (c) wind
5. Turbines move and help to produce ..... energy.
   (a) electrical ☐ (b) wind ☐ (c) heat

B. Fill in the blanks with the correct words.

1. ..... force pulls all objects towards the centre of the earth
2. A ..... surface produces less friction than a ..... surface.
3. ..... is the ability to do work.
4. A machine makes our work task ..... .
5. ..... is the main source of energy.

C. State whether the following statements are True or False.

1. Everything we throw high, does not come down to the earth. ☐
2. Work will be done only if force is applied. ☐
3. All machines make our work easier. ☐
4. Energy gives us ability to do work. ☐
5. Solar energy is the limited source of energy. ☐

II. Very Short Answer Type Questions

D. Write two examples for each of the following.

1. Types of forces ....
2. Types of simple machines ....
3. Sources of energy ....

E. Write one word for the following.

1. A push or pull acting on an object is called .....
2. The ability of doing work is known as .....
3. Energy from wind is called .....

III. Short Answer Type Questions

F. Answer the following questions briefly.

1. What is force?
2. Name two types of forces.
3. What is gravity?
4. What is work?

IV. Long Answer Type Questions

G. Answer the following questions in detail.

1. Explain the gravitational force.
2. What is friction? How does it work on a surface?
3. How do we get energy from the sun and water?
4. What do you mean by wind energy? How is it helpful to us?

CREATIVE CORNER

HOTS Question

When we sleep or think or just stand at a place, no work is done in terms of science. Why?

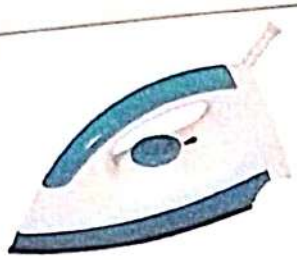
21st CS Critical Thinking

Picture-based Activity

HD Observation

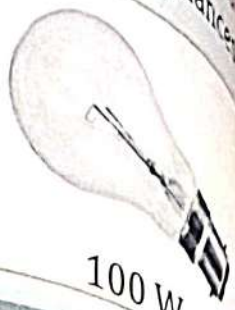
There would be many types of electrical appliances available at your home. Look at them one by one and check the power required in terms of watt to run those appliances.

200 W



1500 W

5 W



100 W

Crossword PUZZLE

HD Problem Solving

Encircle the names of five simple machines hidden in the word search below :

P	O	S	L	U	L	C	A
S	C	R	E	W	E	L	X
C	T	A	O	P	V	E	L
I	R	M	L	L	E	V	E
N	E	P	U	L	L	E	Y
W	E	D	G	E	E	R	S

Project WORK

21st CS Digital Resources

Collect information about the different types of energy. Make charts and models on their uses and organise a class exhibition with the help of your teacher.

Think Smart

HD Intellectual

Solar energy is the source of unlimited energy. But electrical energy is limited. What can you do to save electrical energy?

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

CHAPTER 12

Air, Water and Weather

What We Have Learnt?

- Air contains
- Water
- Water cycle
- Weather
- Seasons

What We Will Learn?

- Sun and weather
- Air
- More about water
- Water cycle
- Purification of water

Get Set GO!

Look at the pictures given below. Match the pictures with their weathers.

Hot Day

Cold Day

Rainy Day

Cloudy Day

Weather is the condition of a particular place at a particular time in terms of temperature, wind, air pressure and moisture.

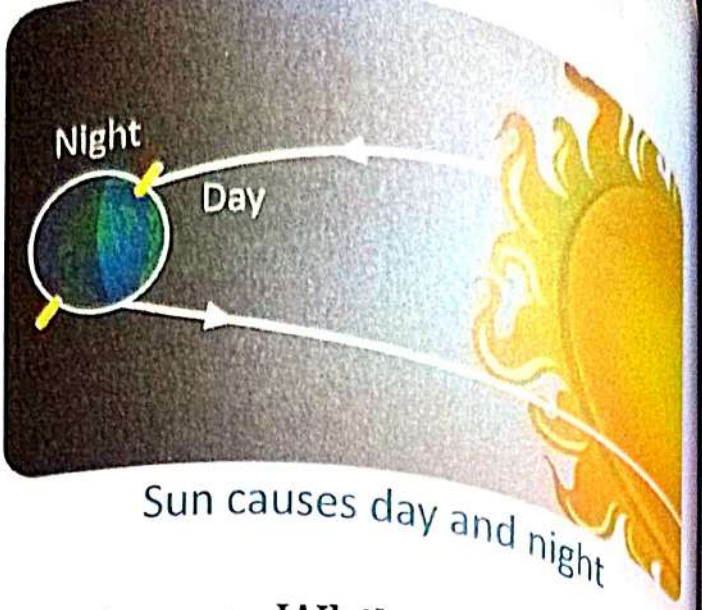
It is not the same everywhere. It might be a hot and sunny day where you live, but in other parts of the world it may be cloudy or snowing. Also, it may be sunny in the morning but it may rain in the afternoon.

Word Bank

Moisture : Very small drops of water present in air.

SUN AND WEATHER

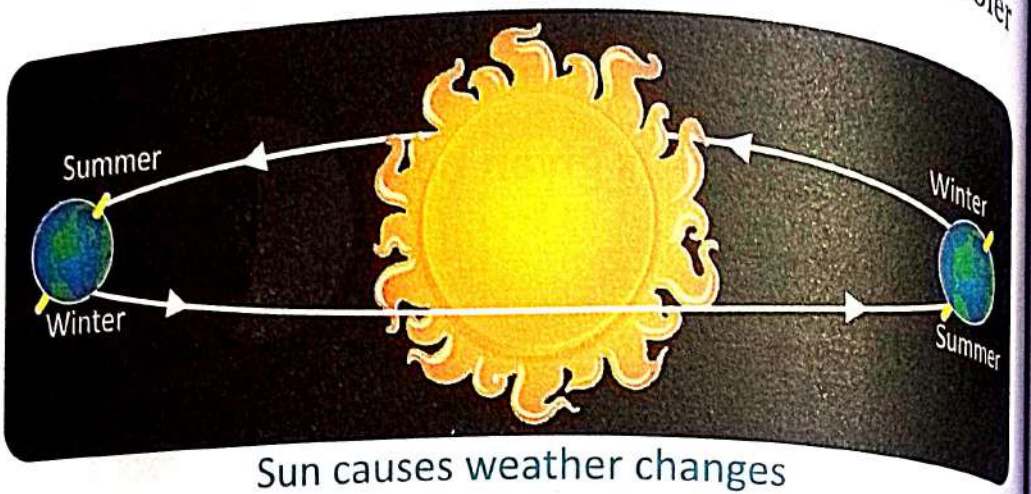
It is the sun that causes changes in the weather. The movement of air, formation of clouds or the change of forms of water is due to the heat of the sun.



Sun causes day and night

We know that the rotation of the earth about its axis causes day and night. We also know that the sun shines very brightly overhead at noon as the sunlight falls directly on the earth. Thus, it is very hot at noon. While in the morning and evening, the rays of the sun are slanted and thus, the earth does not get heated up too much. This is the reason why mornings and evenings are cooler than afternoons.

We also know that the earth revolves around the sun. It is tilted on its axis at an angle. While revolving around the sun, one hemisphere is close to the sun, while the other hemisphere is away from the sun. The part that is closer to the sun has longer and warmer days and has summer. While the part that is away from the sun has shorter and cooler days and has winter. Thus, the revolution of the earth around the sun causes change in the seasons.



Sun causes weather changes

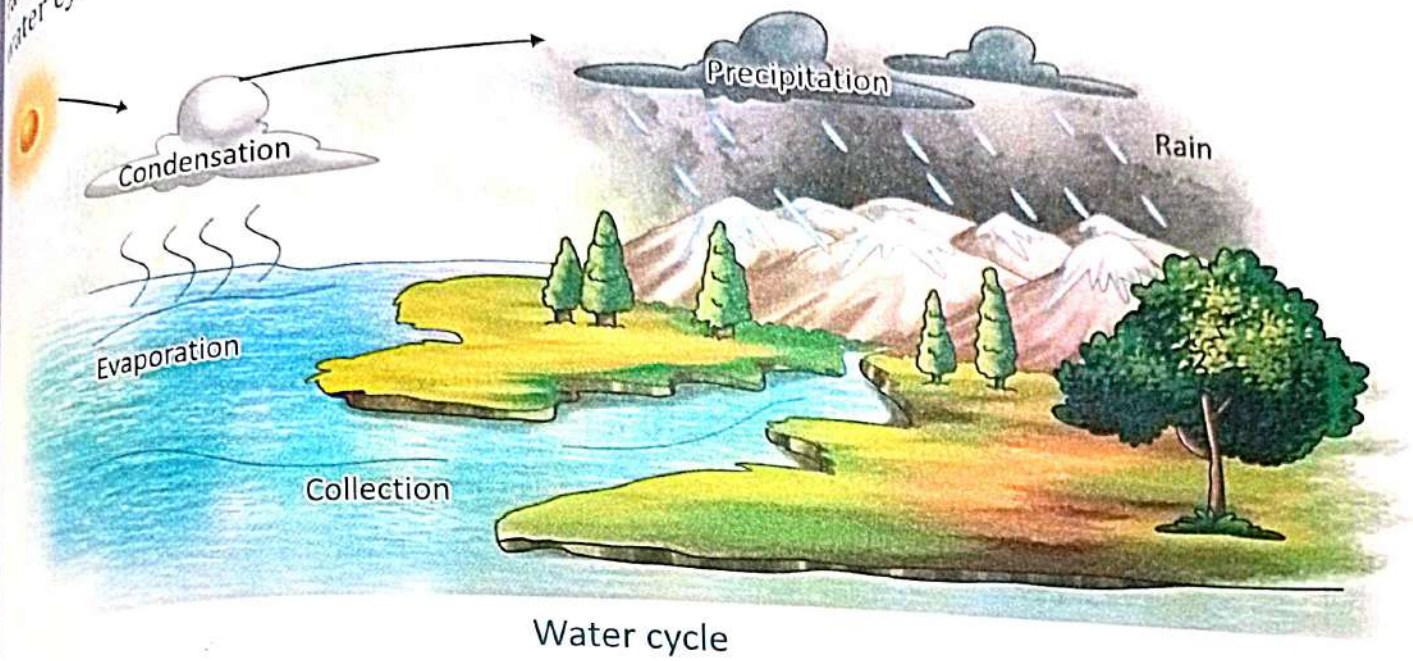
AIR

Air is all around us. It is a mixture of many gases. It contains nitrogen, oxygen, carbon dioxide, water vapour and dust particles. A blanket of air around the earth is called atmosphere. Moving air is called wind. When the wind is gentle and pleasant it is called breeze. A strong wind is called a gale. However, sometimes the wind is very strong and is followed by thunder and lightning. This is called storm.

Word Bank

Atmosphere : Mixture of gases that surround the earth.

rain, snow, etc. in the water bodies again. This whole process is called water cycle.

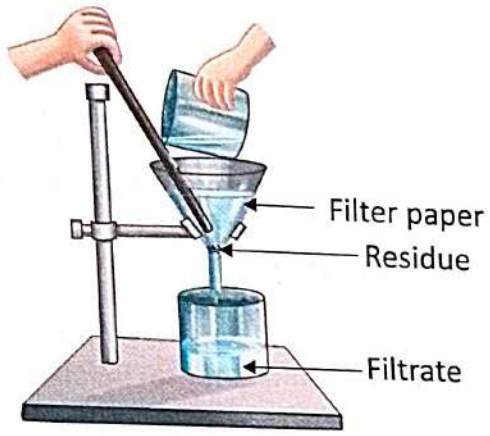


Water cycle

PURIFICATION OF WATER

Impure water can cause many diseases. So, we should drink only pure water. There are some ways to make water pure :

Filtration : Filtration is an easy process to purify the water. In this process, water is passed through a filter paper. The impurities are left behind on the filter paper and clean water is collected below. The process in which water is cleaned by passing it through filter paper is called filtration.

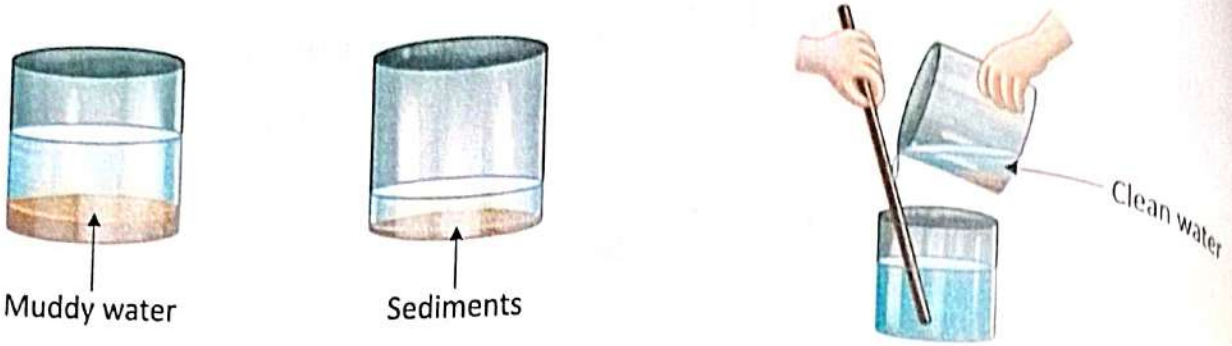


Filtration

Chlorination : In this method, chlorine is added to water to kill germs. So, chlorination is the process of adding chlorine to the water.

Boiling : Boiling of water is the easiest way to make water pure. Boil the water at least for 10 to 15 minutes to kill the germs in it. Boiled water should be stored in clean and covered utensils.

Sedimentation and Decantation : In this process, water is kept undisturbed for some time. The impurities settle down at the bottom of the container. This is called sedimentation. Pure water can be separated slowly by pouring out the clean water into another vessel. This is called decantation.



Sedimentation and decantation

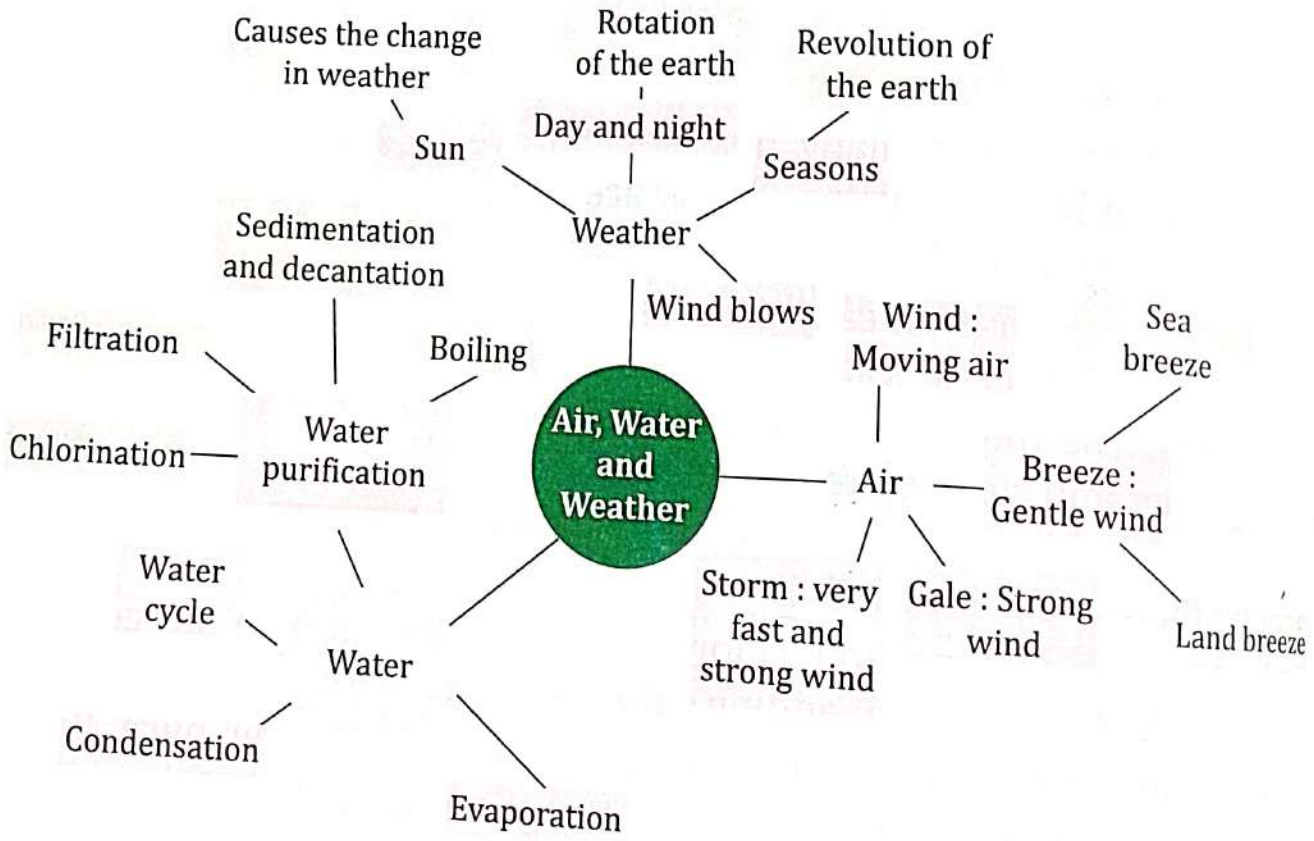
FUN Activity

EL Experiential Learning

Make some soap solution and take a straw.

Blow some water bubbles in front of glowing sun and try to find out 7 colours rainbow in the bubbles.

MIND MAP



EXERCISES

I. Objective Type Questions

A. Tick (✓) the correct option.

1. The ..... causes change in weather.
   (a) sun ☐ (b) wind ☐ (c) clouds
2. Which is the hottest time of the day ?
   (a) Morning ☐ (b) Evening ☐ (c) Noon
3. The rotation of the earth causes :
   (a) hot and cold ☐ (b) day and night ☐ (c) weather
4. The blanket of air around our earth is called :
   (a) wind ☐ (b) atmosphere ☐ (c) storm
5. The change of water into water vapour is called :
   (a) evaporation ☐ (b) decantation ☐ (c) condensation

B. Fill in the blanks with the correct words.

1. ..... is a mixture of many gases.
2. The wind that blows gently is called ..... .
3. Three-fourth part of our earth is covered with ..... .
4. The change of water vapour into water by cooling is called ..... .

C. State whether the following statements are True or False.

1. Temperature, wind, air pressure, moisture and clouds are components of weather. ☐
2. Moving smooth air is called storm. ☐
3. Sea breeze can be experienced only at night. ☐
4. Water vapour in the air causes humidity. ☐

D. Match the following.

1. Rotation of the earth	(a) drinking
2. Land breeze	(b) water vapour changes into water
3. Use of water	(c) day-night
4. Condensation	(d) at nights

II. Very Short Answer Type Questions

E. Write two examples for each of the following.

1. Components of weather .....
2. Methods by which we can purify water .....

F. Write one word for the following.

1. The movement of the earth on its own tilted axis .....
2. Very fast and strong wind .....
3. The process of adding chlorine to water to kill germs .....

III. Short Answer Type Questions

G. Answer the following questions briefly.

1. Define weather.
2. What do you mean by evaporation?
3. Name the simplest method to purify water.
4. What is condensation?

IV. Long Answer Type Questions

H. Answer the following questions in detail.

1. What do you mean by weather? What are the components of weather?
2. What do you mean by land breeze and sea breeze?
3. How does the water cycle continue in nature?
4. What are the different ways of purifying water?

CREATIVE CORNER

HOTS Question

Why do wet clothes dry faster in the summer season?

21st CS Critical Thinking

Project WORK

Collect information and pictures of different types of weather separately. Paste the pictures in your scrapbook and write the information below the pictures.

21st CS Digital Resources

Think Smart

21st CS Life Skills

To understand the importance of water, let us do an activity:

- Take 19 litres of water in a bucket and imagine that the water in the bucket is all the water on the earth.
- Now take out 25 tablespoons of water from the bucket and place it in the jar labelled "Fresh Water". This represents all the fresh water on the earth (water contained in the atmosphere, icecaps, rivers, ponds, lakes and groundwater). Now the water in the bucket represents all the salt water on the earth.

- Next, take out 8 tablespoons from the freshwater jar and place it in the cup labelled "Groundwater". This represents all the groundwater on the earth.
- Finally, take out one-tenth of a tablespoon from the freshwater jar and pour it in a small glass labelled "Rivers and Lakes". This represents all the water in rivers and lakes.

This Activity shows 'How Precious Water Is!',

Therefore, each of us has a responsibility to save water on the earth.

CHAPTER 13

The Solar System

What We Have Learnt?

- The earth
- The sun
- The moon
- Stars
- Astronomers

What We Will Learn?

- The solar system
- Moon and satellites
- Stars
- Movement of the earth
- Changing of seasons

Get Set GO!

Name these famous personalities.

.....

.....

.....

The solar system consists of the sun, moon, planets, etc. All the eight planets move around the sun. Let us learn more about solar system.

THE SOLAR SYSTEM

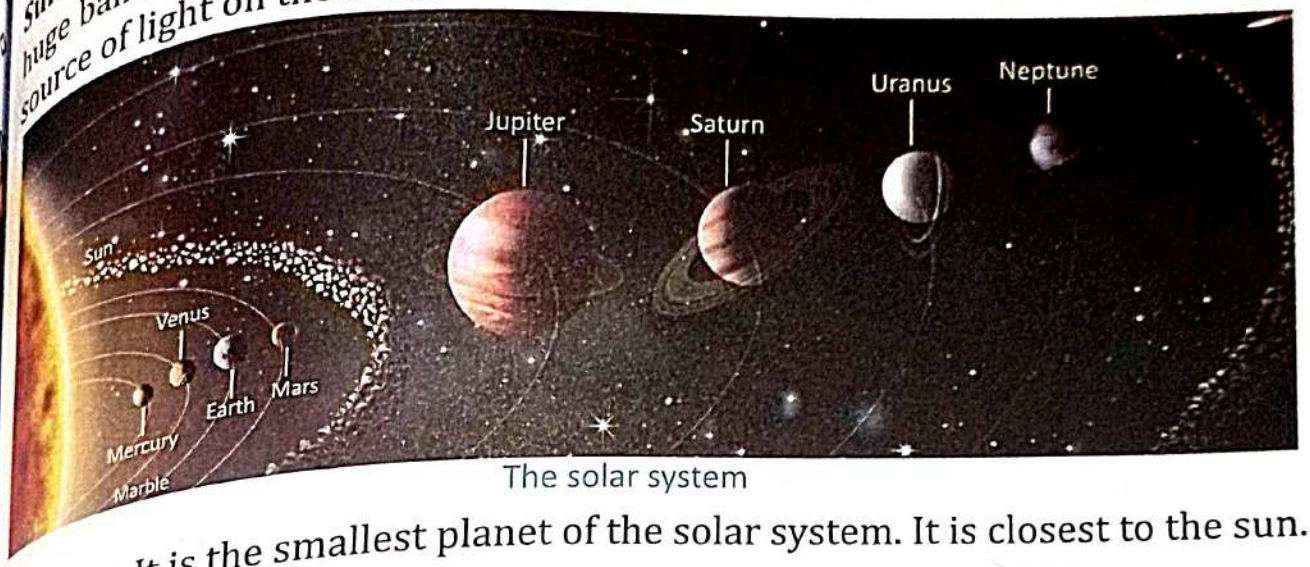
The sun, the eight planets, their moons and the dwarf planets form the solar system.

All the planets of the solar system revolve around the sun in a fixed path. This path is called orbit. The eight planets according to the increasing distance from the sun are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Neptune, Uranus. Let us read about them.

Word Bank

Orbit : Fixed path in which planets revolve around the sun

Sun : The sun is at the centre of the solar system. It is actually a star. It is a huge ball made up of gases. It gives heat and light to the earth. It is the main source of light on the earth.



The solar system

Mercury : It is the smallest planet of the solar system. It is closest to the sun. It is very hot.

Venus : It is the hottest planet of the solar system. It is also called evening or morning star. It is also known as the earth's twin.

Earth : It is the third planet from the sun. It is the only planet where life is possible. It is also called blue planet due to the presence of water. It is the only planet that has greenery.

Mars : It is the fourth planet from the sun. It is also called the red planet because it has red soil and rocks. It resembles the earth. Scientists believe that it is the only planet after the earth where life may exist. But no living thing has been discovered here.

Jupiter : It is the fifth and the largest planet of the solar system. It spins very fast, pulling the clouds surrounding it to form a striped pattern. This is why, we see a striped pattern on Jupiter when we look carefully.

Saturn : It is the planet with rings. It is a beautiful planet due to the seven shining rings around it.

Uranus : It is the seventh planet from the sun. It is the fastest revolving planet.

Neptune : It is the coldest planet. It is the farthest planet from the sun.

Knowledge ZONE

Earlier, Pluto was the ninth planet of the solar system, but now it is considered as dwarf planet and it is not the part of the solar system.

QUICK TEST E

Answer these questions.

1. What is the solar system?
2. Which is the smallest planet of the solar system?

MOON AND SATELLITES

An object that moves around a planet in an orbit is called its moon or satellites. All planets except mercury and venus have moons.

The moon is a natural satellite of the Earth. It moves around the Earth in an orbit. It has no light of its own. It shines because it reflects the light of the sun. It is about 384,400 km away from the earth. The moon takes 27.3 days to complete one revolution around the Earth.

Moon does not have an atmosphere to protect it from extreme heat or cold. So, the temperature on the moon can be as high as 100°C at noon and as low –173°C at night.

Word Bank

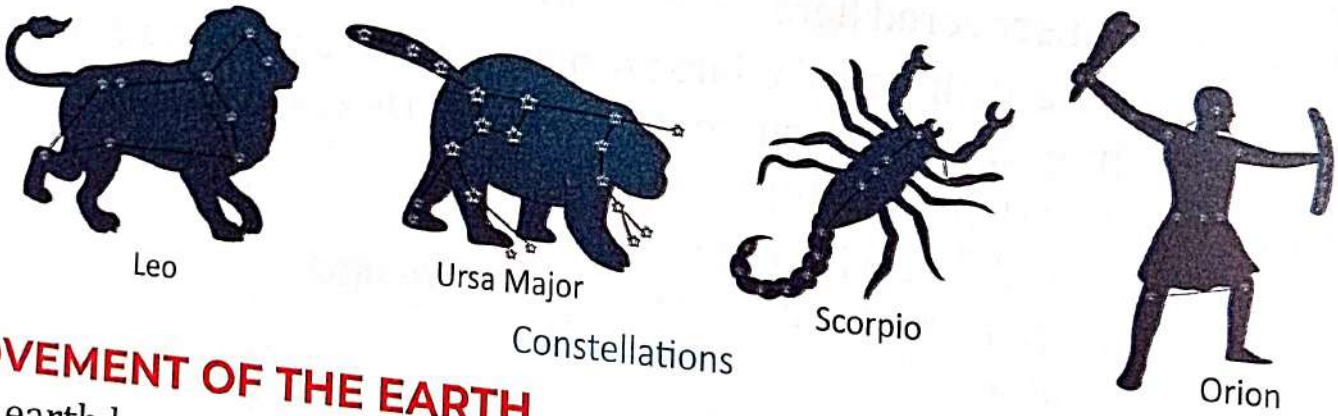
Reflect : To throw back light, heat etc. from a surface.

STARS

A star is a huge ball of hot gases. It emits its own light and heat. However, we cannot feel their heat as they are very far away from the earth. This is also the reason that they appear very small to us. On a clear night, we can see countless twinkling stars in the sky.

Constellations

Groups of stars are called constellations. They have been given different names such as the Leo, Uras Major, Scorpio, orion etc.



Constellations

MOVEMENT OF THE EARTH

The earth has two movements – Rotation and Revolution.

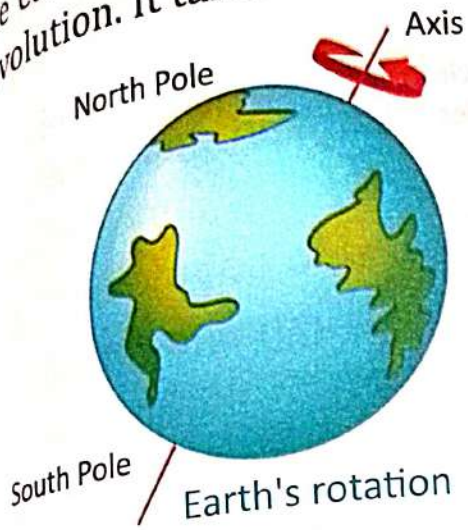
Rotation : The spinning of the earth around its own axis is called rotation. It takes about 24 hours to complete one rotation, moving from west to east

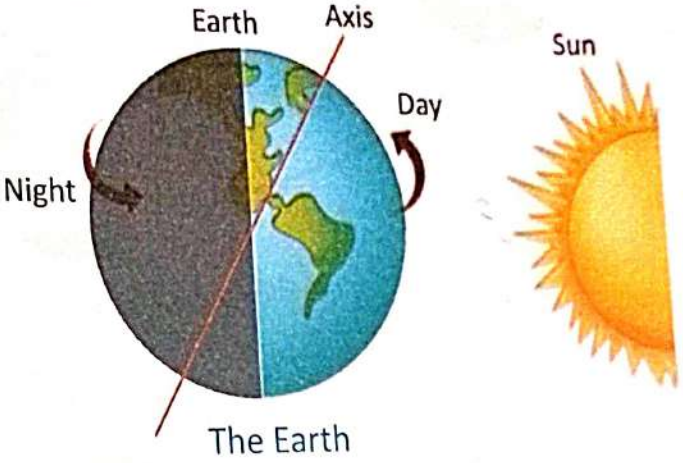
direction. The earth's axis is also slightly tilted. The rotation of the earth causes day and night.

Revolution : The earth also moves around the sun. The movement of the earth around the sun is called revolution. It takes 365 days and 6 hours to complete one revolution.

Knowledge ZONE

The study of the sun, moon, stars and planets is called Astronomy. People who study them are called Astronomers.





HD Problem Solving

FUN Activity

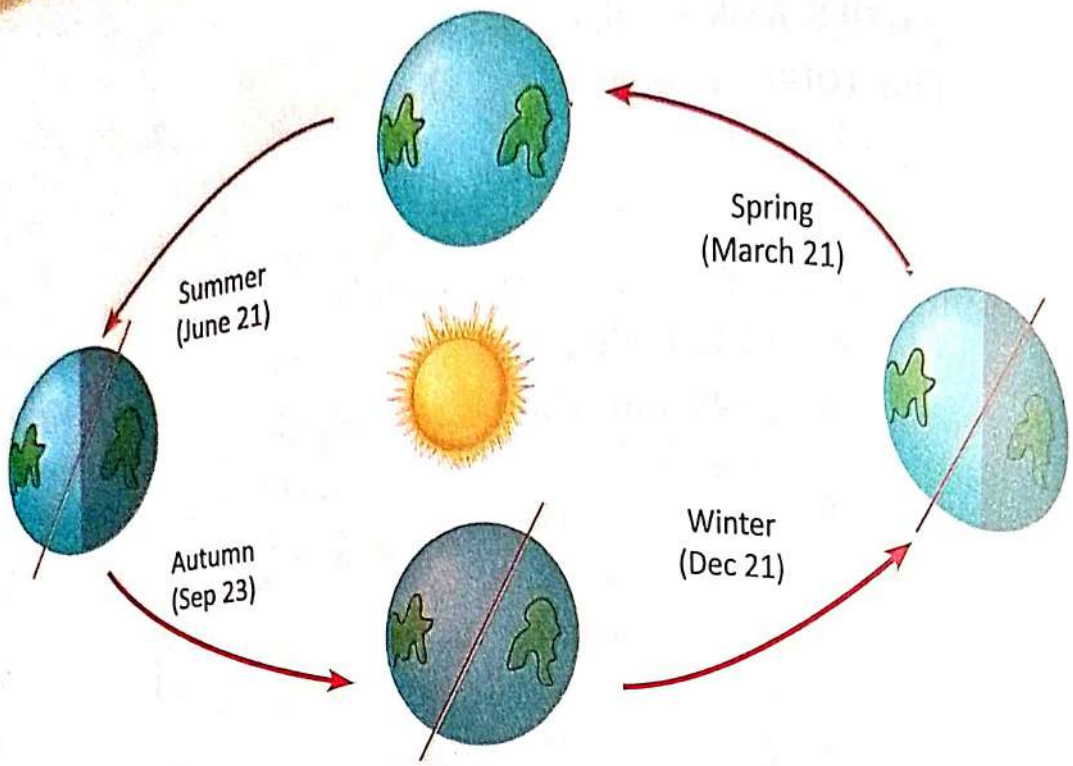
Our calendar shows days, months and years. If a day indicates the rotation of the earth in 24 hours, and a year indicates the revolution of the earth in 365 days. Then, what do the months suggest? Why do we have them in calendars?

CHANGING OF SEASONS

The revolution of the earth causes change in seasons. The earth remains tilted on its axis. As the earth moves around the sun, the tilt causes the sun's rays to fall more directly on either the northern hemisphere or the southern hemisphere, depending on the position on the earth.

The hemisphere which is tilted towards the sun gets the direct sun rays, so it is warmer and has the summer season. The other half has winter. These situations change within six months of time.

Autumn comes between summer and winter and spring comes between winter and summer. These two seasons are neither very hot nor very cold.



Changing of seasons

QUICK TEST E

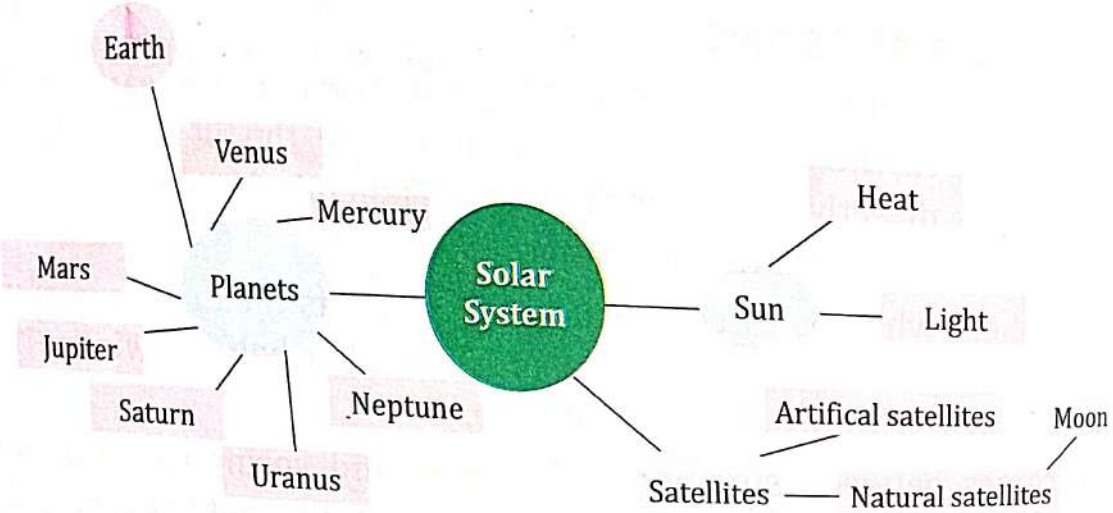
Fill in the blanks with the correct words.

1. A ..... is a huge ball of hot gases.
2. The ..... is a natural satellite of the Earth.
3. The ..... of the earth causes in seasons.

PUT ON YOUR THINKING CAP

Find out the difference between astronomers and astronauts.

MIND MAP



EXERCISES

1. Objective Type Questions

A. Tick (✓) the correct option.

1. How many planets are there in the solar system ?
   (a) Seven ☐ (b) Eight ☐ (c) Nine ☐
2. Which of the following is at the centre of the solar system ?
   (a) Venus ☐ (b) Mars ☐ (c) Sun ☐
3. The rotation of the earth causes :
   (a) day and night ☐ (b) seasons ☐
   (c) eclipses ☐
4. What is the cause of change in the seasons ?
   (a) Earth's revolution ☐ (b) Earth's rotation ☐
   (c) Planet's rotation ☐

B. Fill in the blanks with the correct words.

1. ..... is the hottest planet of the solar system.
2. All the planets of the solar system revolve around the sun in a ..... .
3. ..... is also called as evening star.
4. Group of stars is called ..... .
5. ..... comes between summer and winter.

C. State whether the following statements are True or False.

1. Life exists only on earth. ☐
2. All the planets of the solar system revolve around the sun in different paths. ☐
3. The earth is the closest planet to the sun. ☐
4. Mercury is the farthest planet from the sun. ☐
5. Satellites are the groups of stars. ☐

D. Match the following.

1. Evening star	(a) Saturn
2. Red planet	(b) Earth
3. Seven rings	(c) Mars
4. Blue planet	(d) Mercury
5. Very hot planet	(e) Venus

II. Very Short Answer Type Questions

E. Write one word for the following.

1. The smallest planet in the solar system
2. The natural satellite of the Earth
3. Number of days to complete one revolution
4. The red planet

III. Short Answer Type Questions

F. Answer the following questions briefly.

1. Name the eight planets.
2. Define satellite. Name the earth's natural satellite.
3. What are stars?

IV. Long Answer Type Questions

G. Answer the following questions in detail.

1. What is the Solar System?
2. What is a constellation? Give two examples.
3. What are the different movements of the earth? Explain with example
4. What are the causes of changes in the seasons?

HOTS Question

CREATIVE CORNER

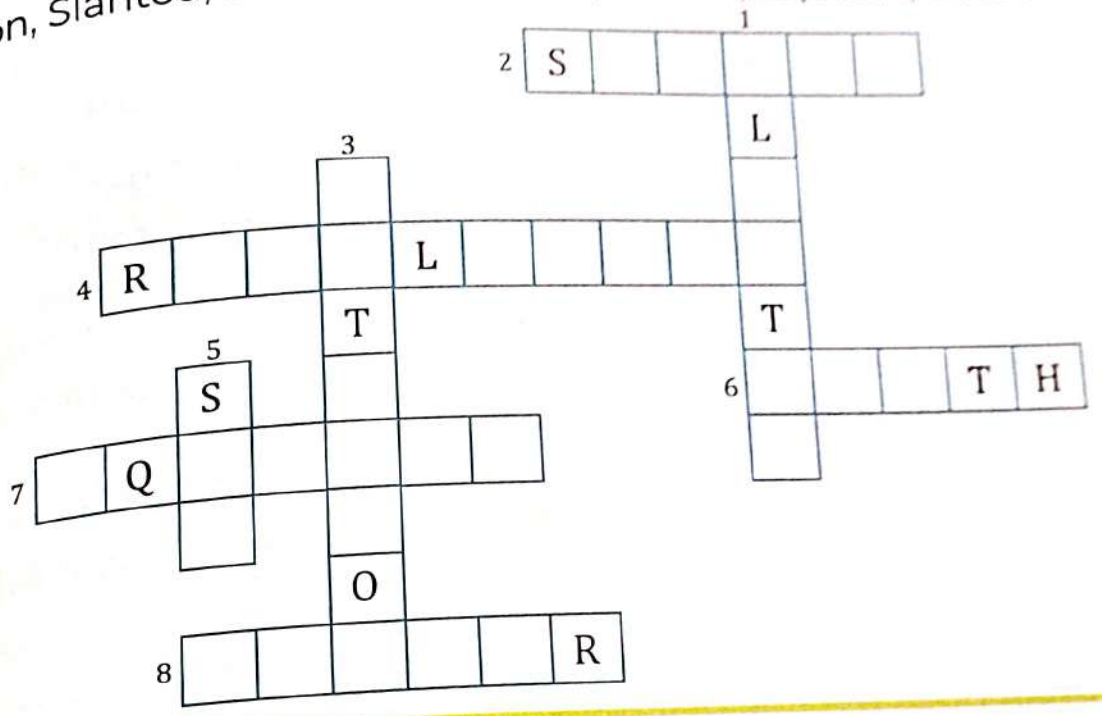
21st CS Critical Thinking

Our planet earth is considered to be a unique planet. Why?

Crossword PUZZLE

HD Problem Solving

Revolution, Slanted, Season, Sun, Earth, Winter, Equator, Rotation



AI Art Integration

Project WORK

Make a model of the solar system using thermocol and coloured papers.

HD Abstract Thinking

Think Smart

Leap year occurs once in every four years. This is because the one-fourth of a day (6 hours) is added and becomes one day causing one extra day in February of every fourth year.

QuickTEST 3

Based on Chapters 9 to 13

A. Tick (✓) the correct option.

1. Which of the following is an extinct animal?
   (a) Dodo ☐ (b) Elephant ☐ (c) Tiger
2. Which one of the following is a part of the excretory system?
   (a) Blood ☐ (b) Heart ☐ (c) Kidneys
3. The ..... causes change in water.
   (a) Sun ☐ (b) Wind ☐ (c) Clouds
4. A pair of scissors is an example of :
   (a) pulley ☐ (b) lever ☐ (c) screw

B. Fill in the blanks with the correct words.

1. ..... is also called as evening star.
2. A machine makes our task ..... .
3. The wind that blows gently is called ..... .
4. The human body is made up of many ..... .

C. State whether the following statements are True or False.

1. The natural environment in which an animal lives called its habitat. ☐
2. Energy gives us ability to do work. ☐
3. Moving smooth air is called storm. ☐
4. The earth is the closest plant to the sun. ☐

D. Write two examples for each of the following.

1. Terrestrial animals ....
2. Components of weather ....
3. Blood vessels ....
4. Sources of energy ....

E. Answer the following questions briefly.

1. What is camouflaging?
2. Name two types of forces.
3. What is evaporation?
4. Name the eight planets.

F. Answer the following questions in detail.

1. What is a constellation? Give two examples.
2. Explain the gravitational force.
3. What do you mean by land breeze and sea breeze?
4. Write a short note on the circulatory system and describe its functions.

HALF-YEARLY Assessment Paper

Based on CBE

A. Tick (✓) the correct option.

1. Which of the following is a rich source of carbohydrate?
   (a) Butter ☐ (b) Ghee ☐ (c) Potato ☐
2. Clothes protect us from :
   (a) rain ☐ (b) dust ☐ (c) all of these ☐
3. Which of the following soils is found in deserts?
   (a) Sandy soil ☐ (b) Clayey soil ☐ (c) Loamy soil ☐
4. Which of the following is found in coastal area?
   (a) Rubber ☐ (b) Neem ☐ (c) Water lily ☐

B. Fill in the blanks with the correct words.

1. ..... help us to grow and repair the different parts of our body.
2. ..... do not have fixed volume.
3. Early men covered themselves with leaves and ..... .
4. Animals and plants are ..... on each other.

C. State whether the following statements are True or False.

1. We should drink 12 to 14 glasses of water every day. ☐
2. Mangroves have breathing roots. ☐
3. All the things have weight and occupy space. ☐
4. Croton and maple are decorative plants. ☐

D. Match the following

1. Calcium	(a) salad
2. Rayon	(b) soil conservation
3. Roughage	(c) strong bones
4. Crop rotation	(d) synthetic fabric

E. Write two examples for each of the following.

1. Parts of a leaf ....
2. Floating plants ....
3. Protein-rich food items ....
4. Food for strong teeth ....

F. Answer the following questions briefly.

1. What id plaque?
2. What do we call the green pigment present in a leaf?
3. What type of clothes do we wear in summer?
4. What is soil erosion?

F. Answer the following questions in detail.

1. What is a balanced diet?
2. Explain the different parts of a tooth.
3. Explain condensation and freezing.
4. Write the difference between terrestrial plants and aquatic plants.

ANNUAL Assessment Paper

Based on CBE

A. Tick (✓) the correct option.

1. How many nutrients of food are there?
   (a) Five ☐ (b) Four ☐ (c) Six ☐
2. The breathing organ of fish is :
   (a) gills ☐ (b) lungs ☐ (c) fins ☐
3. Turbines move and help to produce ..... energy.
   (a) electrical ☐ (b) wind ☐ (c) heat ☐
4. Which of the following is at the centre of the solar system?
   (a) Venus ☐ (b) Mars ☐ (c) Sun ☐

B. Fill in the blanks with the correct words.

1. In ....., molecules are loosely packed as compared to soils and liquids.
2. Human beings and dogs are the examples of ..... .
3. The heart is the key organ in ..... system.
4. Three-fourth part of our earth is covered with ..... .

C. State whether the following statements are True or False.

1. Plant eating animals are called carnivorous animals. ☐
2. Water hyacinth is a floating plant. ☐
3. Work will be done only if force is applied. ☐
4. Water vapour in the air causes humidity. ☐

D. Write two examples for each of the following.

1. Solutes ....
2. Parasites ....
3. Egg-laying animals ....
4. Organs of the excretory system ....

E. Write one word for the following.

1. A push or pull acting on an object is called .....
2. Breakdown of rocks into tiny pieces .....
3. Animals that live mostly on trees. .....
4. The growing chick is called .....

F. Answer the following questions briefly.

1. What is evaporation?
2. Name a saprophytic plant.
3. Define the circulatory system.
4. What do you mean by incubation?

G. Answer the following questions in detail.

1. How do plants prepare their own food?
2. What are the causes of changes in the seasons?
3. Write the features of arboreal animals.
4. How do we get energy from the sun and water?

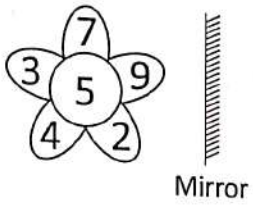
OLYMPIAD Model Paper

Tick (✓) the correct option.

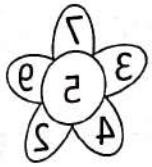
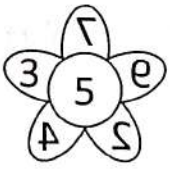
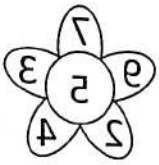
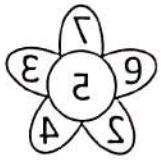
1. If ◯ is coded as 0, △ is coded as 3, then ..... is coded as 5.

(a) ⬡ ☐ (b) □ ☐ (c) ⬠ ☐ (d) ⊠ ☐

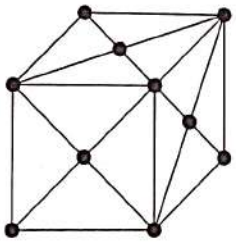
2. Find the correct image of the given figure :

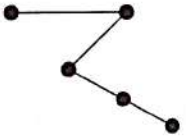
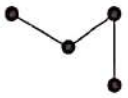


Mirror

(a)  ☐ (b)  ☐ (c)  ☐ (d)  ☐

3. Which of the following options is NOT correctly embedded or hidden in the given figure?



(a)  ☐ (b)  ☐ (c)  ☐ (d)  ☐

4. Meena planted tape grass in a port of soil and watered it regularly. After a few days, the plant died. Which of the following is the most appropriate reason of it?

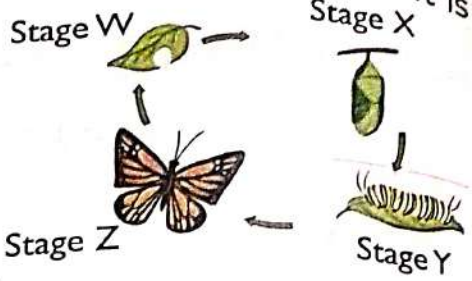
(a) Tape grass flourishes more on ground than in pot. ☐

(b) Tape grass is an aquatic plant. ☐

(c) Tape grass does not require regular watering. ☐

(d) Water might be of bad quality. ☐

5. Chetan drew the life cycle of a butterfly as shown in the figure. It is incorrect because ..... .



(a) Stage Z should come before Stage Y
(b) Stage W should come before Stage Z
(c) Stage X should come before Stage Y
(d) Stage Y should come before Stage Z

6. Who was the first man to step on the Moon?
(a) Rakesh Sharma ☐ (b) Kalpana Chawla ☐
(c) Neil Armstrong ☐ (d) Yuri Gagarin ☐

7. It takes 365 days for one revolution by ..... .
(a) Sun on its axis ☐ (b) Earth on its axis ☐
(c) Moon in its orbit ☐ (d) Earth in its orbit ☐

8. Which of the following is INCORRECTLY matched with the materials of which it is made?

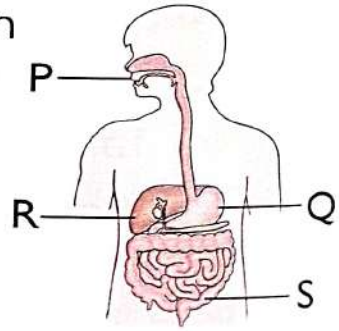
	Wood	Plastic	Metal	Glass	Clay	
(a) Cooking pot	✓	✓	✓	✗	✓	☐
(b) Comb	✓	✓	✗	✗	✗	☐
(c) Spoon	✓	✓	✓	✓	✓	☐
(d) Container	✓	✓	✓	✓	✓	☐

9. Study the given figure. Which plant part(s) has/have been INCORRECTLY matched with its function?

Parts	Functions
X	Makes food for the plant
Y	Holds the plant firmly to the ground
Z	Absorbs water for the plant

(a) X only ☐ (b) X and Z ☐ (c) Y only ☐ (d) Y and Z ☐

10. In which labelled part of the human digestive system does the water get absorbed the most.



(a) Q ☐ (b) R ☐
(c) P ☐ (d) S ☐

GETTING AHEAD IN SCIENCE

About

The series **Getting Ahead in Science** has been designed to enhance the competency based approach among the learners. The aim of the series is to achieve the prime goals laid in **NIPUN Bharat Programme** and **SAFAL scheme.**

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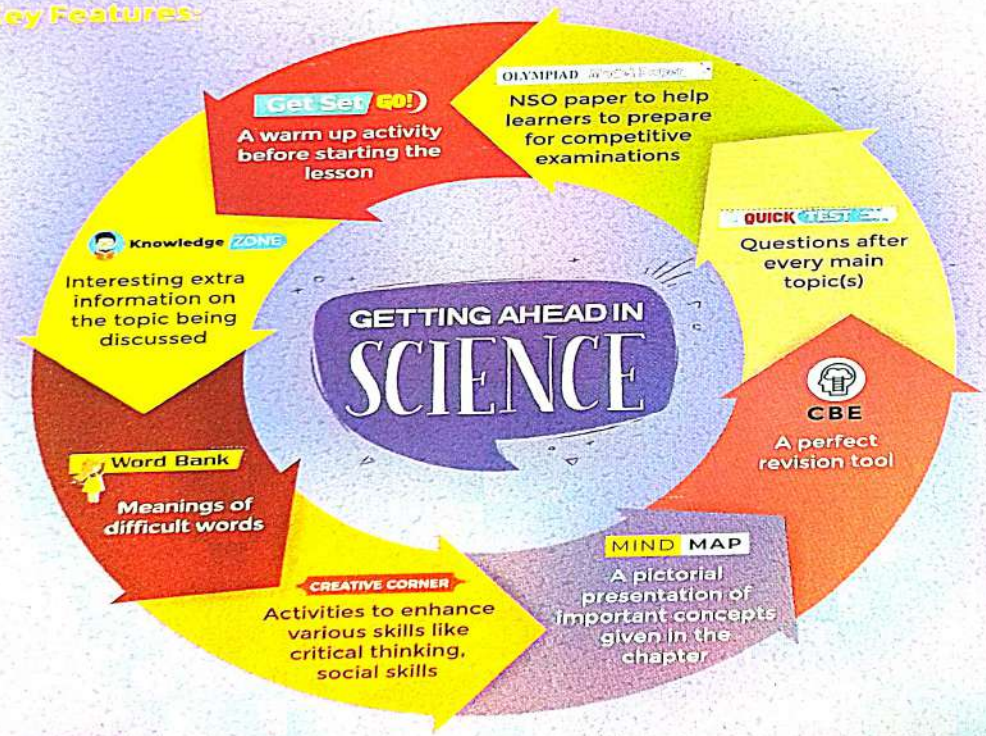

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