

Smart UP
SCIENCE

A Textbook of Science

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Help Kit : 1-5

Plants Around Us

Exercise

A. Fill in the blanks with the right words from those given in the box:

1. Tall and strong plants are called **trees**.
2. Some plants are **small** and have **soft** stems.
3. Creepers grow along the **ground**.
4. Herbs have **small** stems.

B. Mark the sentences with a (3) or (7) :

1. 7 2. 7 3. 3 4. 3 5. 7

C. Match the following :

- | | | |
|-------------------------|---|------------------|
| 1. Plants | → | a. Big and small |
| 2. Small and bushy | → | b. climber |
| 3. Plant grows in water | → | c. trees |
| 4. Leaves | → | d. Shrubs |
| 5. Grapevine | → | e. Creeper |
| 6. Pumpkin | → | f. lotus |

D. Cross the odd one out :

1. (7) 2. (3) 3. (7) 4. (7)

E. Write the correct word under each picture :



1. Tall and strong plants are called trees.
2. Rose. It grows from a branch.
3. Some plants are small and have soft stems. They are called herbs.
4. Name the following:

a. any two shrubs	Rose	Jasmine
b. any two herbs	Spinach	Grass
c. any two climbers	Grape vine	Money plant
d. any two creepers	Water melon	Pumpkin

Things To Do

Do it Yourself

2

Parts of a Plant

Exercise

A. Fill in the blanks with the right words from those given in the box :

1. The **root** fixes the plant to the ground.
2. The stem carries **water** and **minerals** to all parts of the plant.
3. **Rose** and **jasmine** have good smells.
4. Fruits have **seeds** inside them.

B. Mark the sentences with (3) or (7) :

1. (7) 2. (7) 3. (3) 4. (3) 5. (7)

C. Give one word answer :

1. Carrot 2. Potato 3. Spinach
4. Chlorophyll 5. Mango

D. Match the following :

- | | | |
|----------------|---|-----------|
| 1. Root | → | a. potato |
| 2. Chlorophyll | → | b. carrot |
| 3. Stem | → | c. fruit |
| 4. Perfume | → | d. leaf |
| 5. Seeds | → | e. rose |

E. Identify the picture :

1.



Cactus

2.



Pomegranate

1.



Leaf

2.



Sunflower

1.



Root

2.



Banana leaf

F. Draw lines from the leaves to their trees and write correct number in the box :

1.



Mango

2.



Coconut

3.



Papaya

4.



Neem

a.



b.



c.



d.



G. Answer the following questions :

1. The root fixes the plant to the ground. It gives support to the plant. It takes in water from the ground and sends it to the upper part of the plant.
2. Chlorophyll
3. Braches, leaves, buds, flowers and fruits.
4. Banyan and neem.

Things To Do

Do it Yourself

3

Plants Grow From Seeds

Exercise

A. Fill in the blanks with the right words from those given in the box :

1. Seeds grow into **plant**.
2. A mango has **one** seed.
3. A banana has **no** seeds.
4. An apple has **few** seeds.

B. A seed needs four good friends to help it grow into a healthy plant. Name them :

- i. Water ii. Air iii. Soil iv. Warmth

C. Tick (3) the correct answer in each of the following :

1. Flowers change into seeds/**fruits**.
2. Plants grow from **seeds**/flowers.
3. The seed gets its warmth from fire/**sunlight**.
4. The seed swells because of **water**/food with soil.
5. Papaya has **many**/few seeds.

Things To Do

Do it Yourself

4

Plants Give Us Food

Exercise

A. Give three examples of each of the following :

1. **Food grains**
i. Wheat ii. Rice iii. Maize
2. **Vegetables**
i. Radish ii. Turnip iii. Brinjal
3. **Edible fruits**
i. Pineapple ii. Apple iii. Banana
4. **Nuts**
i. Almond ii. Walnut iii. Cashew
5. **Pulses**
i. Grams ii. Beans iii. Peas

B. Write V for vegetables, F for fruits and G for grains :



(F)



(G)



(F)



(V)



(F)



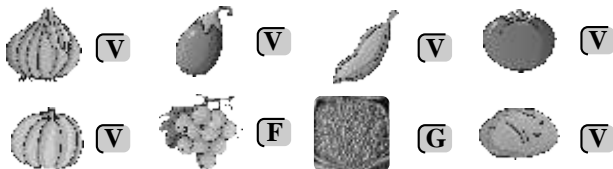
(V)



(F)



(V)



C. Mark the sentences with a (3) or (7) :

1. (7) 2. (3) 3. (7) 4. (3) 5. (3)

D. Answer the following questions :

1. Plants give us most of our food.
2. Pea, gram and green gram.

Things to Do

Do it yourself

Unit-II : Animal Life

5

Animals Around Us

Exercise

A. Answer yes or no :

1. Yes 2. No 3. Yes 4. Yes 5. No 6. Yes

B. Put the correct name under each picture.



Beak



Feather



Monkey



Bat



Beetle



Seahorse



Tortoise



Penguin

C. Give one word answer :

1. Insects 2. Fish 3. Reptiles
4. Mammals 5. Snakes 6. Birds

D. Tick (3) the correct answer in each of the following :

1. A bat is a bird/³mammal.
2. All insects have four/³six legs.
3. Webbed feet help frog in ³swimming/jumping.
4. Mammals have two/³four legs.

- 3
5. **Fins**/feathers help the fish in swimming.
6. Fish live in **water**/air.

E. Match the following :

- | | | |
|---------------------|---|--------------|
| 1. Beak | → | a. Insects |
| 2. Hair on the body | → | b. Swimming |
| 3. Webbed feet | → | c. Breathing |
| 4. Fins | → | d. Frog |
| 5. Six legs | → | e. Bird |
| 6. Gills | → | f. Mammals |

Things to Do

Do it Yourself



6

Food of Animals

Exercise

A. Name three animals for each of the following :

- | | | |
|----------------|-------------|-------------|
| 1. i. Cow | ii. Goat | iii. Rabbit |
| 2. i. Squirrel | ii. Sparrow | iii. Hen |
| 3. i. Tiger | ii. Lion | iii. Wolf |

B. Match the following :

- | | | |
|---------------|---|-----------|
| 1. Bird | → | a. Fish |
| 2. Zebra | → | b. Insect |
| 3. Lion | → | c. Grain |
| 4. Lizard | → | d. Grass |
| 5. Kingfisher | → | e. Deer |

C. Mark the sentences with a (3) or a (7) :

1. (3) 2. (7) 3. (3) 4. (7) 5. (7)

D. Fill in the blanks with the right words given in the box :

- | | | |
|--------------|-------------------|----------|
| 1. Sugercane | 2. fruits | 3. beaks |
| 4. flesh | 5. insects, worms | 6. Hyena |

E. Answer the following questions :

- | | | |
|--------------|--------------|---------|
| 1. Sugarcane | 2. Pigeon | 3. Lion |
| 4. Hyena | 5. Cow, goat | 6. Food |

Things To Do

Do it Yourself



7

Shelter for Animals

Exercise

A. Fill in the blanks with the right words from those given in the box :

1. A sparrow builds a **nest**.
2. A snake lives in a **burrow** made by other animals.
3. A spider makes a **web**.
4. A lion lives in a **den**.

B. Name the following :

- | | | |
|------------------|-----------------|--------------|
| 1. i. Elephant | ii. Giraffe | iii. Deer |
| 2. i. Woodpecker | ii. Tailor Bird | iii. Pigeon |
| 3. i. Sheds | ii. Stables | iii. Kennels |

Things To Do

Do it Yourself



8

Unit-III : Air, Water and Weather

The Air Around Us

Exercise

A. Answer the following in Yes or No.

1. No 2. No 3. Yes 4. Yes 5. Yes

B. Fill in the blanks with the right words from those given in the box :

1. We cannot live without **air**.
2. Moving air is called **wind**.
3. Air takes up **space**.
4. Air is present **everywhere**.

Things To Do

Do it Yourself



9

Air is Needed for Life

Exercise

A. Answer the following in Yes or No.

1. No 2. No 3. Yes 4. Yes 5. Yes

B. Fill in the blanks with the right words those given in the box :

1. All living things need air to **live**.
2. We feel very uneasy when we do not get **air** to breathe in.
3. Air is **necessary** for fire to burn.
4. **Air** is needed for breathing.

C. Mark the sentences with a (3) or (7) :

1. (3)
2. (7)
3. (3)
4. (7)

Things To Do

Do it Yourself



10

Water

Exercise

A. Fill in the blanks with the right words from those given in the box :

1. Water is the most important **substance** on Earth.
2. The main source of water is **rain**.
3. We use water in many **ways**.
4. In my house I get water from a **water-tank**.
5. I drink **water** when I am thirsty.

B. In our houses we use water for :

- | | | |
|-------------|-------------|------------|
| 1. Drinking | 2. Cooking | 3. Bathing |
| 4. Cleaning | 5. Watering | 6. Washing |

C. Name six sources of water :

- | | | |
|----------|---------|---------------|
| 1. Rain | 2. Pond | 3. Well |
| 4. River | 5. Lake | 6. Water tank |

D. Mark the sentences with a (3) or (7) :

1. (7)
2. (3)
3. (3)
4. (7)

Things To Do

Do it Yourself.



11

The Weather

Exercise

A. Fill in the blanks the right words from those given in the box :

1. It is **hot** on a sunny day.
2. The weather is **humid** on a rainy day.

3. There are **clouds** in the sky on a cloudy day.
4. When the wind blows strongly it is a **windy** day.

B. Mark the sentences with a (3) or a (7) :

1. (7)
2. (7)
3. (3)
4. (3)

Things To Do

Do it Yourself

Unit-IV : The Human Body, Health and Hygiene



12

Our Needs

Exercise

A. Fill in the blanks with the right words from those given in the box :

1. Green plants help to keep the air **clean**.
2. We must **boil** the water if it is not clean.
3. The food we eat should **fresh** and **clean**.
4. Clothes protect us from heat and **cold**.
5. The house protects us from the **cold**, rain and **wind**.

B. Answer these questions :

1. We need a good house to live in. The house protects us from the sun, rain, wind and cold.
2. Food helps us for our growth and strength.
3. To protect from dust, heat and cold we need clothes.

Things To Do

Do it yourself.



13

Good Habits

Exercise

A. Fill in the blanks with the right words from those given in the box :

1. We should wash our **hands** before and after meals.
2. We should **follow** good habits.
3. We should **close** the tap after use.
4. We should never **waste** food.
5. Use your **handkerchief** when you cough or sneeze.

B. Mark the sentences with a (3) or a (7) :

1. (3) 2. (7) 3. (7) 4. (3)

C. Write 'G' for good habit and 'B' for bad habit :

1. B 2. G 3. B 4. G 5. G 6. G

D. Answer the following questions:

1. We should keep our house clean.
2. We should not waste water. We should keep our class room clean.
3. We should not spit on the road.
4. We should serve and love our neighbours.
5. Handkerchief
6. We should close the tap.
7. To keep our surrounding clean.

Things To Do

Do it Yourself



14

Cleanliness for Good Health

Exercise

A. Write five good habits that keep you clean.

1. We should brush our teeth in the morning.
2. We should take a bath every day.
3. We should wash our hair while bathing.
4. We should keep our nose clean.
5. We should keep our ears clean.

B. Name five things that help you to keep clean.

1. Soap 2. Handkerchief 3. Clean clothes
4. Nail cutter 5. Shampoo

C. Fill in the blanks with the right words given in the box :

1. Cleanliness is necessary for good **health**.
2. We should brush our teeth in the **morning** and at **night**.
3. A daily **bath** helps us to keep our skin clean.
4. We should wash our eyes with **clean** and **cold** water.
5. We should wash our hands **before** and **after** every meal.

D. Mark the sentences with a (3) or (7).

1. (7) 2. (7) 3. (7) 4. (7) 5. (3)

E. Match the following :

- | | | |
|-----------------|---|----------|
| 1. Nail cutter | → | a. teeth |
| 2. Handkerchief | → | b. hair |
| 3. Comb | → | c. nose |
| 4. Brush | → | d. nails |

F. Answer the following questions :

1. We should brush our teeth in the morning and at night.
2. It helps us to keep our skin clean.
3. We should use a clean handkerchief to blow our nose.
4. We should use a clean nail cutter.
5. It keeps us happy.

Things To Do

Do it Yourself



15

Exercise, Recreation, Rest and Sleep

A. Answer the following questions :

1. Running, walking and games which are playing in the open are good exercises.
2. Recreation is necessary after work.
3. Rest after work is very useful.
4. Sleep gives us complete rest.

B. Fill in the blanks with the right words from those given in the box :

1. Exercise keeps the body **fit**.
2. Recreation is necessary after **work**.
3. Rest refreshes our **mind** and **body**.
4. Sleep gives us complete **rest**.
5. We should sleep **early** in the night.

C. Mark the sentences with a (3) or a (7) :

1. (7) 2. (3) 3. (7) 4. (3) 5. (7)

D. Match the following sentences :

- | | | |
|-----------------------|---|--------------------------|
| 1. Exercise keeps the | → | a. we feel hungry. |
| 2. After playing | → | b. is very useful. |
| 3. Recreation is | → | c. body fit. |
| 4. Rest after work | → | d. early in the morning. |
| 5. We should wake up | → | e. good for health. |

Things To Do
Do it yourself

Unit-V : Safety and First Aid



16

Safety Habits

Exercise

A. Pick out the correct words :

1. must 2. must not 3. green 4. report

B. Fill in the blanks with the right words given in the box :

1. We must follow traffic **lights** .
2. Cross the road at **zebra** crossing.
3. If there is red light, **stop**.
4. If there is green light, **move**.
5. Never **play** on the road.

Things To Do

Stop

Read

Go

Unit-VI : Housing



17

Our House

A. Answer the following questions :

1. We need a house for our safety. A house protects us from heat, cold, rain, storm and wild animals.
2. In our house we enjoy rest and sleep.

B. Write five lines about your house.

1. My house is the most important place in my life.
2. I feel fully safe and secure in my house.
3. My house is very beautiful.
4. It is surrounded by green trees, shrubs etc.
5. This is the place where I get full care.

Things To Do

Do it yourself



18 The Sun, the Moon and the Stars

Exercise

A. Tick (3) the correct answer in each of the following :

1. The Sun is a ³star/moon.
2. The Moon is ³smaller/larger than the Earth.
3. The Moon has ³no light/surface of its own.
4. We ³can/cannot count the stars.
5. The Moon ³changes/does not change its shape everyday.
6. The Sun gives us cold/³heat.
7. The stars shine at ³night/day.

B. Answer these questions in one word.

1. Round like a ball
2. The Sun
3. The Moon

C. Fill in the blanks with the right words from these given in the box :

1. The Sun gives us **heat** and **light**.
2. The Sun rises in the **east** and sets in the **west**.
3. The Sun is the star closest to the **Earth**.
4. The Moon goes round the **Earth**.

D. Mark the sentences with a (3) or a (7) :

1. (3)
2. (7)
3. (3)
4. (7)

E. Match the following :

- | | | |
|--------------|---|--------------------------------|
| 1. Sun | → | a. Complete shape |
| 2. Moon | → | b. Cannot be counted |
| 3. Full moon | → | c. Round like a ball |
| 4. Stars | → | d. Changes its shape everyday. |

Things To Do

Do it Yourself

Kinds of Plants

1

Exercise

A. Fill in the blanks with the words given below :

1. Trees have one main hard and woody stem called **trunk**.
2. Some seeds are **edible**.
3. Fibrous root consists of many **thin** and **bushy** roots.
4. Leaves are known as **kitchen** of the plant.
5. Herbs have **soft** and **green** stems.

B. Tick (3) the correct answer :

1. b. creepers (3)
2. b. shrub (3)
3. c. climbers (3)
4. c. Trunk (3)

C. Name the following :

1. shrub
2. herb
3. climbers
4. stem
5. seed

D. Give three examples of each of the following :

- | | | |
|----------------|----------|------------|
| 1. coriander | mint | lotus |
| 2. rose | Hibiscus | cotton |
| 3. moneyplant | bean | grapevine |
| 4. water melon | pumkin | musk melon |

E. Name these plants:



Grape vine



Banyan



Water melon



Rose

F. Circle the correct picture :

1. a fruit that grows on a tree
2. a flower that grows on a shrub
3. a herb that you eat



4. a vegetable that grows on a creeper



5. a vegetable that grows on a climber

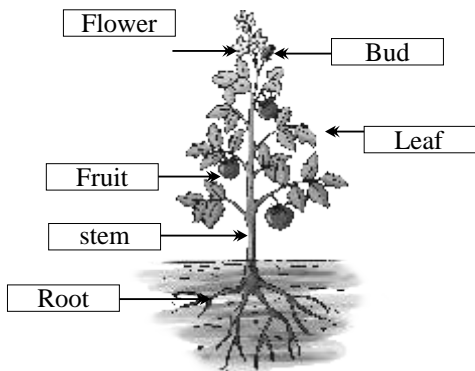


G. Answer the following questions :

1. Tall and big plants are called trees.
2. Plants that live for a few months or one season are called **seasonal plants**.
3. Trees like the banyan tree have a thick and strong stem called the **trunk**.
4. Wheat, rice and pulses are edible seeds.
5. Muskmelon and papaya.

Things To Do

- **Collect leaves of different plants. Collect only fallen leaves. Do not pluck leaves. Dry them between the folds of a news paper. Paste the dried leaves on the outline of the tree.**



2

Useful Plants

Exercise

A. Give three examples of each of the following :

- | | |
|--------------|--------|
| 1. Wheat | Rice |
| 2. Urad | Maize |
| 3. Potato | Turnip |
| 4. Mango | Apple |
| 5. Cardamonn | Cloves |

B. Tick (3) the correct answer :

1. a. Radish (3) 2. b. Clove (3)

C. Match the following :

- | | | |
|--------------|---|----------------|
| 1. Fruit | → | a. Cauliflower |
| 2. Nut | → | b. Cardamom |
| 3. Vegetable | → | c. Cinchona |
| 4. Cereal | → | d. Apple |
| 5. Spice | → | e. Jute |
| 6. Fibre | → | f. Almond |
| 7. Medicine | → | g. Maize |

D. Write 'T' for true and 'F' for false statements :

1. F 2. F 3. T 4. T 5. F

F. Answer the following questions :

1. We get many things from plants. Most of our food comes from plants.
We get fibres, wood, oil, paper, gum, rubber, medicines, tea, coffee, sugar and many more things from plants.
2. A spice is a dried seed, fruit, root or bark of some plants.
3. Plants give us wood. Wood is used to make chairs, tables, doors, windows and other furniture. We get wood from plants like teak and bamboo. Wood is used in villages as fuel to cook food.
4. We get gum from the acacia tree.
5. Cereals and pulses together are called foodgrains.
6. Clothes are made from fibres.

E. Name the following :

- | | | |
|----------------|------------|----------|
| 1. Cauliflower | 2. carrot | 3. Fibre |
| 4. Potato | 5. Spinach | |

Things To Do

Do it yourself



3

Unit-II : Animal Life

Uses of Animals

Exercise

A. Name the following :

- | | |
|---------------------------------|------------------------|
| 1. Cow, buffalo, goat, hen, dog | 2. Camel, oxen, donkey |
| 3. Goat, sheep, hen | |
| 4. Curd, ice-cream, butter | |

5. Meat, fish, egg

B. Tick (3) the correct answer :

1. a. useful (3) 2. c. sheep (3) 3. a. sheep (3)

C. Write 'T' for true and 'F' for false statements:

1. T 2. F 3. F 4. T 5. T

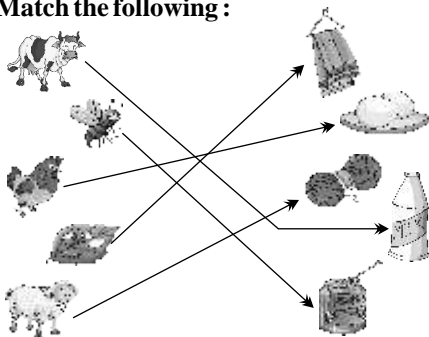
D. Fill in the blanks with the words given below :

1. The dung of animals is used as **manure**.
2. We get leather from the skin of **animals**.
3. We use **wool** to make clothes.
4. **Hens** and **ducks** give us eggs.
5. We get honey from **bees**.

E. Answer the following questions :

1. Sheep is useful to us because we get meat and wool from it.
2. We get honey as well as wax from beehives. Bee wax is used to make candles.
3. We get silk from threads or fibres given out by the silkworms.
4. Some animals help us move from one place to another. Such type of animals are also called beasts of burden.
5. Milk is a nutritious food for all of us. Milk contains all the food a baby needs.

F. Match the following :



G. Write the names of the animals given below :



Cow



Goat



Sheep



Duck



Bee

H. Colour the animals which carry loads for us:

Do Yourself

Things To Do

Do it yourself



4








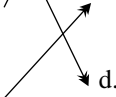


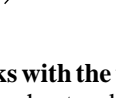

Wild Animals

Exercise

A. Name the following :

1. Lion, tiger, cheetah, elephant
2. Bear and jackal
3. Elephant, rhinoceros, zebra and kangaroo.
4. Elephant and giraffe and deer.
5. Lions, tigers and foxes.

B. Match the following animals with the food they eat :

1. 		a. 
2. 		b. 
3. 		c. 
4. 		d. 

C. Fill in the blanks with the words given below :

1. The deer, elephant and giraffe eat **plants**.
2. The vulture and jackal eat **dead animals**.
3. The bear and crow eat **plants and animals**.
4. Monkeys live on **trees**.

5. Lions live in **dens**.

D. Guess who I am ? Complete following words :

E L E P H A N T

L I O N

M O N K E Y

R A B B I T

E. Answer the following questions :

1. We can see wild animals in the jungles.
2. Plant eating animals are known as herbivores.
3. Some animals eat flesh of other animals are known as carnivores.
4. Some animals eat both plants and flesh of other animals are known as omnivores.

Things To Do

Do it yourself

Unit-III : The Human Body, Health and Hygiene



5

Our Body-A Wonderful Machine

Exercise

A. Fill in the blanks with the words given below :

1. There are **206** bones in our body.
2. There are **600** muscles in our body.
3. Bones and muscles **work** together.
4. Our heart is a muscular **pump**.
5. The **lungs** are like air filled balloons.

B. Tick (3) the correct answer :

1. a. 206
2. c. Heart
3. b. small

C. Give the main functions of the following :

1. Bones give support and strength to the body.
2. Muscles give proper shape to our body organs.
3. Our heart pumps blood all the parts of the body.
4. The lungs help in the breathing.
5. The stomach digests our food.

D. Write 'T' for true and 'F' for false statements :

1. F 2. F 3. F 4. T 5. T

E. Match the following :

- | | | |
|------------|---|--|
| 1. Stomach | → | a. pumping blood to all parts of the body |
| 2. Lungs | → | b. giving support and strength to the body |
| 3. Heart | → | c. giving proper shape to the body |
| 4. Bones | → | d. breathing |
| 5. Muscles | → | e. digestion |

F. Answer the following questions :

1. Bones give support and strength to the body. Muscles give proper shape to our body organs.
2. The heart of our body continue to work from the time of our birth.

Things To Do

- Do it yourself
- Name the following organs studying from the latter given.



LUNGS



HEART



STOMACH



INTESTINE

6

Exercise and Posture

Exercise

A. Write 'T' for true and 'F' for false statements :

1. F 2. T 3. F

B. Tick (3) the correct answer :

1. a. healthy 2. b. simple 3. c. properly

C. Answer the following questions :

1. The position of our body when we stand, set or walk is called posture.
2. Good postures help the bones grow well. Good postures keep the backbone straight and strong. Good postures make our body to work properly.
3. Regular exercise and games make us healthy. Body muscles

grow stronger with proper exercise. By exercise we sweat a lot. Sweating removes the waste matter from our body. After exercise we feel hungry. We eat well, we sleep well.

Things To Do

Did it yourself



7

Food for Health

Exercise

A. Name the following :

1. Sugar, wheat and rice.
2. Pulses, milk and meat.
3. Milk, vegetables and fruits.

B. Fill in the blanks with the words given below :

1. **Carbohydrates** and **fats** are energy-giving foods.
2. **Proteins** are body building food.
3. **Vitamins** and **minerals** come under protective foods.
4. **Balanced** diet is necessary for good health.
5. Fats provide us **extra** energy.

C. Answer the following questions :

1. Food gives us energy. Food makes us grow. Food keeps us healthy and strong.
2. We all need energy to do different activities such as play, work and study.
3. To protect our body from diseases we must take vegetables and fruits.
4. **Good Food Habits** : Good food habits are necessary for good health :
 - (i) Wash our hands and mouth before taking food.
 - (ii) Take all kinds of food necessary for the body.
 - (iii) Avoid over-eating.
5. Do it yourself

Things To Do

Do it yourself



8

Unit-IV : Safety and First Aid

Safety Habits

Exercise

Science-2/22

A. Fill in the blanks with the given words :

1. Walk only on the **footpath**.
2. Cross the road only at the **zebra** crossing.
3. We must follow **traffic** rules.
4. We must report our **injury** at once.

B. Tick (3) the correct answer :

1. a. safe
2. b. sharp objects
3. c. petrol bottle

C. Match the light signal with the action :

1. Green Signal → a. get ready
2. Yellow Signal → b. stop
3. Red Signal → c. go

D. Answer the following questions :

1. While crossing the road, we should first of all look to our right, then to our left, and then again to our right and cross the road only if it is clear.
2. We must walk on the left side of the road.
3. We must cross the road at the zebra crossing.
4. The help given to the injured, before the doctor arrives is known as first aid.

Things To Do

Do it yourself

Unit-V : Air, Water and Weather



9

What Does the Air Contain?

Exercise

A. Fill in the blanks with the words given below :

1. Heat changes water into **vapour**.
2. The vapour from boiling water is called **steam**.
3. The dust in the air may contain **germs** of disease.
4. When we sweep **dust** rises into the air.
5. Motor vehicles give out **smoke** into the air.

B. Tick (3) the correct answer :

1. c. water vapour
2. b. steam
3. b. fire

C. Answer the following questions :

1. Air contains water vapour, dust, smoke and germs.
2. When a sweeper sweeps the road, the dust rises up into the air. Dust also goes into the air when wind blows. The dust mixes

with the air.

3. The gaseous form of water is known as steam. When water boils, it sends out steam. Steam is very hot water vapour.
4. Dust and smoke make the air impure.

Things To Do

Do it yourself



10

Fresh Air

Exercise

A. Fill in the blanks with the words given below :

1. We must breathe in **fresh** air.
2. We should go for a walk **in the open**.
3. Dust and smoke are **harmful** to health.
4. Foul air from garbage contains **germs**.
5. The trees give out **oxygen**.

B. Tick (3) the correct answer :

1. c. ill
2. a. oxygen

C. A list of places is given below. Underline those where we get fresh air.

- | | |
|-------------------------|--------------------|
| 1. The bazaar | 2. <u>A hill</u> |
| 3. A crowded bus | 4. A closed room |
| 5. <u>A riverside</u> | 6. <u>A garden</u> |
| 7. <u>The sea shore</u> | 8. A theatre |

D. Match the following :

- | | | |
|-----------------|---|---------------------|
| 1. Trees | → | a. make air fresh. |
| 2. Foul air | → | b. is not clean. |
| 3. Green plants | → | c. give out oxygen. |
| 4. All the air | → | d. makes us ill. |

E. Answer the following questions :

1. We require fresh and clean air for good health.
2. Dust and smoke make the air impure.
3. We must live in a clean and airy house. We must keep the door and windows open. We must try to keep our surrounding air free from dust, smoke and germs.
4. Green plants help to make the air fresh and clean. Trees take in harmful gases from the environment and make it clean. We

must grow many trees to keep the air pure.

5. To take fresh and clean air we must go to parks regularly.

Things To Do

Do it yourself



11

Moving Air–Wind

Exercise

A. Fill in the blanks with the words given below :

1. **Moving** air is called wind.
2. Wind has **force**.
3. A **weather** cock on airports shows the direction of the wind.
4. Wind with great speed causes **storm**.
5. The **force** of wind is useful.

B. Tick (3) the correct answer :

1. a. wind
2. b. air
3. c. force

C. Answer the following questions :

1. The moving air is called **wind**.
2. Strong winds are called storms.
3. Wind helps ships to sail fast.
4. The force of the wind is useful to us. It makes things move. It helps in the movement of sail boats, gliders, parachutes and aircrafts. Wind makes a windmill work. Windmills are used for pumping water and for grinding corn.
5. Stormy winds can uproot trees and destroy buildings. Boats and ships overturn in the sea due to storm.

Things To Do

Do it yourself



12

Sources of Water

Exercise

A. Fill in the blanks with the words given below :

1. **Rain** is the main source of water.
2. Sea water is **Salty**.
3. We must **boil** and **filter** water before drinking.
4. We boil water to remove **impurities** from it.

5. A **well** is a source of underground water.

B. Answer the following questions :

1. Rain is the main source of water.
2. All water is not always fit for drinking and cooking purposes. Many impurities and germs may be present in it. In the rainy season water becomes muddy. It has many dissolved salts in it. The water from lakes is salty because it contains some salts. Such water is not safe for drinking.
3. We boil and filter water to kill germs and make water safe to drink.
4. Tap is the source of water in our house.

Things To Do

Do it yourself



13

Three Forms of Water

Exercise

A. Fill in the blanks with the words given below :

1. When water is heated, it changes into **steam**.
2. The change of water to water vapour is called **evaporation**.
3. The change of water vapour to water is called **condensation**.
4. Change of water to ice is called **freezing**.
5. Ice and snow melt on heating to form **water**.

B. Tick (3) the correct answer :

1. c. forms
2. a. evaporation
3. b. ice

C. Match the following :

- | | | |
|-----------|---|-----------------|
| 1. Solid | → | a. water |
| 2. Liquid | → | b. water vapour |
| 3. Gas | → | c. ice |

D. Choose the correct answer :

1. The change of water vapour into water on cooling is called **condensation**.
2. Change of water into ice is called **freezing**.
3. The water which we use in homes is the **liquid** form of water.
4. The changing of water into water vapour is called **evaporation**.

E. Answer the following questions :

1. The three forms of water are solid (ice), liquid (water), and gas

- (water vapour).
2. When we heat water, it changes into water vapour.
 3. The changing of water into vapour on heating is called **evaporation**.
 4. Water vapour converts into water on cooling.
 5. The water vapour is the gaseous form of water.

Things To Do

Do it yourself

Unit-VI: Housing and Clothing



14

Types of House

Exercise

A. Fill in the blanks with the words given below :

1. Our house is our **shelter**.
2. A tent is made of strong cloth called **canvas**.
3. Multistoreyed buildings are called **skyscrapers**.
4. Houses in the hills often have **sloping** roofs.

B. Tick (3) the correct answer :

1. b. Hut
2. a. Mobile

C. Write 'T' for true and 'F' for false statements :

1. F
2. T
3. T
4. F

D. Answer the following questions :

1. We need a house for protection against heat, cold, rains, wild beasts, birds and from thieves and robbers.
2. A Kutcha house is made of wood, bamboo, straw and mud.
3. A pucca house is made of bricks, stones and cement.
4. Sloping roofs and flat roofs.

Things To Do

Do it yourself

Unit-VII : Rocks, Soils and Minerals



15

Kinds of Rocks

Exercise

A. Name the rock which is used for :

1. Diamond
2. Limestone
3. Marble
4. Granite

B. Tick (3) the correct answer :

1. a. Granite 2. c. limestone

C. Give one important use of each of the following kinds of rocks :

1. It is used for building roads and houses.
2. It is used for making building, statues and floor.
3. It is used as a fuel.
4. Children write on the slate with a slate pencil.

D. Fill in the blanks with the words given below :

1. **Diamond** is the hardest rock.
2. **Chalk** is a soft, white limestone.
3. **Coal** is used as a fuel.
4. Granite is hard and **rough** rock.
5. **Slate** is a blackish, soft and smooth rock.

E. Answer the following questions ;

1. Our Earth is made up of a hard matter called **rocks**.
2. Granite, Marble 3. Slate, Limestone
4. We see rocks at many places. We get huge rocks in the mountains. We also get rocks near sea shores and along the banks of rivers.

Things To Do

Do it Yourself

Unit-VII: Housing and Clothing



16

Sunlight and Shadow

Exercise

A. Fill in the blanks with the words given below :

1. The Sun **rises** and the day begins.
2. The Sun emits bright **light** and **heat**.
3. The shadows are long in the **evening**.
4. When a thing is **near** the light, the shadow is large.
5. If you stand facing the sun your shadow falls **behind** you.

B. Write 'T' for true and 'F' for false statements :

1. T 2. F 3. T 4. F 5. F

C. Answer the following questions :

1. The Sun gives us light and heat.
2. In the morning and evening the shadows are longer.

3. The shadows are shortest at noon.
4. We do not see the shadows in the dark because a shadow is formed when there is a body comes in the way of the light. In the absence of light shadow cannot be formed.

D. Match the shadow with its object:



E. Match the shadow with its object:

Do it Yourself

Things To Do

Do it Yourself



Living and Non-living Things

Exercise

A. Fill in the blanks with the words given below :

1. A cat is a **living** thing.
2. **Birds** and **insects** move with their wings.
3. Babies grow into an **adult**.
4. Fish breathes through **gills**.
5. Animals respond to movement, sun and light because they have **life**.

B. Tick (3) the correct answer :

1. a. can move (3) 2. a. Lungs (3) 3. c. Reproduction (3)
4. c. by laying eggs or giving birth (3) 5. b. Into a tree (3)

C. Name the following :

1. F 2. T 3. F 4. T 5. F

D. Match the following :

- | | | |
|---------------------------|---|---------------------------------------|
| 1. Study of living things | → | a. Seeds |
| 2. Plants and animals | → | b. A period for which an animal lives |
| 3. Toy and television | → | c. Living things |
| 4. Plants reproduce with | → | d. Biology |
| 5. Lifespan | → | e. Non-living thing |

E. Answer from the picture :



A pen is a **non living** thing.

It **can't** move on its own.

It **can't** breathe.

It **can't** reproduce.

Bird is a **living** thing.

It **can** move on its own.

It **can** breathe.

It **can** reproduce.

F. See the pictures carefully and say which one of these can grow big. Colour the box in green for those that can grow and black for those that cannot grow :



G



B



G



G



G



B



G



B

G. Write L for living things and N for non-living things :

1. L 2. N 3. N 4. N 5. N 6. L

H. Answer the following questions :

1. Living and non living
2. Animals also move from one place to another in search of food, shelter and to protect themselves from their enemies.
3. Do yourself
4. Do yourself
- 5.

Plants

Plants make their own food.

Plants show movement in some parts only.

Plants breathe through tiny pores called stomata. Plants take in carbon dioxide during day.

Plants reproduce mainly from seeds.

Plants do not have sense organs.

Most plants have the same parts-leaves, stem and roots.

Animals

Animals depend on plants and other animals for their food.

Animals can move from one place to another.

Land animals breathe in oxygen through lungs. Most water animals breathe through gills.

Animals reproduce by laying eggs or by giving birth to babies.

Animals have sense organs to feel, hear, see, smell and taste.

Animals are different in shape, size and colour. They have a large variety of body parts.

6. Cow, cat, dog, man.
7. All living things produce another living things of their own

kind. This is called reproduction.

8. Plants make their own food by using carbon dioxide which animals breathe out. If there was no carbon dioxide, the plants would not be able to make their food.

9. Food

Things To Do

Do it yourself

Unit-II : Plant Life



2

Parts of a Plant

A. Give three examples for each of the following :

1. Edible roots
 - a. Radish
 - b. Carrot
 - c. Turnip
2. Edible leaves
 - a. Spinach
 - b. Cabbage
 - c. Lettuce
3. Fruits with many seeds
 - a. Watermelon
 - b. Muskmelon
 - c. Papaya
4. Fruits with one seed
 - a. Mango
 - b. Litchi
 - c. Plum
5. Edible flowers
 - a. Cauliflower
 - b. Sunflower
 - c. Broccoli

B. Tick (3) the correct answer :

1. a. root
2. c. stem
3. c. fruits
4. a. Air
5. c. leaf blade

C. Fill in the blanks :

1. A plant consists of two main parts, the **shoot** and the root.
2. **Mango** plant has a tap root.
3. Neem trees have a strong woody stem called the **trunk**.
4. Potato is an edible **stem**.
5. Leaves contain a substance called **chlorophyll**, which makes them green.

D. Answer in one word :

1. root
2. Leaf blade
3. Midrib
4. seed

E. Answer the following questions :

1. The shoot grows above the ground. It has the stem, branches, leaves, buds, flowers and fruits.
2. **Tap root** : A tap root has a main root. The main root grows at the end of the stem into the soil. A number of thin roots grow

from it. Plants such as mango, mustard, balsam, carrot and neem have tap roots.

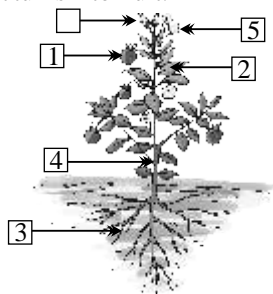
Fibrous root : Fibrous roots are thin and bushy. They grow from the end of the stem. There is no main root and the roots are spread out in the soil. Plants such as grass, rice, wheat and onion have fibrous roots.

3. Roots help a plant in many ways.
 - Roots hold the plant firmly to the soil.
 - Roots absorb water and minerals from the soil.
 - Roots of some plants store food. Roots such as carrot, radish and turnip are swollen as they have food stored in them. These roots are edible.
4. The stem is useful to the plant in many ways.
 - It holds the plant upright and supports branches.
 - Stems bear flowers, fruits, leaves and buds. New flowers and leaves arise from the buds on the stems.
 - The stem spreads out the branches and leaves so that the leaves get maximum sunlight to prepare food.
 - It carries water and minerals from the roots to the other parts of the plant.
 - The stem also carries the food prepared by the leaves to different parts of the plant.
 - Stems of sugarcane, potato and ginger are thick as they store food in them. They are edible.
 - The stems of some plants also help in reproduction.
5. Leaves are the kitchen of the plant. Green leaves prepare food in the presence of air, water and sunlight by a process called photosynthesis. Chlorophyll helps the leaves to prepare food. Thus, leaves help the plant survive.
6. Seeds have a baby plant inside them. A seed grows into a new plant when it gets the right amount of air, water and warmth. A seed also has food stored for the growing plant.

F. Put correct numbers in the boxes for the functions of different parts of a plant :

1. Have seeds which grow into new plant.
2. Takes energy from the sun to prepare food.
3. Fixes the plant to the ground.
4. Transports water, minerals and food to different parts of the plant.

5. It turns into fruit.



G. Label the diagram of leaf given below :

Do yourself

H. Circle the odd one out. Give reasons :

1. Beans, Grass, Wheat, Onion
2. Mustard, Rice, Mango, Grass
3. Stomata, Trunk, Leaf Blade, Veins
4. Light, Water, Sunlight, Dust
5. Mango, Watermelon, Papaya, Tomato

Things To Do

Do it yourself

Unit-III : Animal Life

3

Animals and their Feeding Habits

Exercise

A. Name the following

- | | | |
|------------|----------|-----------|
| 1. a. Cow | b. Horse | c. Deer |
| 2. a. Lion | b. Tiger | c. Wolf |
| 3. a. Crow | b. Bear | c. Monkey |
| 4. a. Goat | b. Sheep | c. Cow |

B. Fill in the blanks :

1. Herbivores have **sharp cutting teeth** in front **strong grinding teeth** at the back.
2. The omnivores have **cutting, tearing** and **chewing** teeth.
3. **Cow** and **zebra** are ruminants.
4. Birds have no **teeth** **Science-3/34** **re beaks.**

5. Birds do not **grind** their food.

C. Match the following :

- | | |
|--------------|----------------------|
| 1. Ruminant | a. Sucking tube |
| 2. Proboscis | b. Bird |
| 3. Beak | c. Stomach |
| 4. Lion | d. Swallowing whole |
| 5. Lizard | e. Flesh of the deer |

D. Write T for true or F for false statements :

1. F 2. T 3. F

E. Answer the following questions :

1. Lizard moves fast, opens its mouth, puts its tongue outside, catches the insect and swallows it. It has no teeth. So it does not chew or grind the food.
2. Birds eat different kinds of food such as seeds, grains, honey, nuts, fish, flesh, small worms and insects. Birds have no teeth but they have beaks. Birds do not grind or chew their food. They simply swallow their food.
3. Butterflies suck nectar from flowers. They visit many flowers. They have a long sucking tube for sucking nectar from the flowers which is known as proboscis.
4. The nectar is the food of a butterfly.
5. **Teeth of Herbivores :** The herbivores have two sets of teeth on the upper and lower jaw. The front teeth of these animals are suited to cut grass and leaves. They have sharp cutting teeth in the front and strong grinding teeth at the back for chewing the plant food.

Things To Do

Do it yourself



4

Ways of Moving in Animals

Exercise

A. Name the following :

1. Lizard, Tortoise, Chameleon.
2. Fish, Earthworm, Snake

B. Tick (3) the correct answer :

1. c. locomotion
2. a. crawling

C. Fill in the blanks :

1. The movement of animals from place to place is called **locomotion**.
2. Mammals move with their **legs**.
3. The **forlimbs** are modified as **wings** in birds.
4. The strong muscles attached to the breast bones are called **flight muscles**.

D. Answer the following questions :

1. The movement of animals from place to place is called locomotion.
2. Animals move from place to place in search of food, shelter and to escape from their enemies.
3. The strong muscles attached to the breast bones and move the wings up and down is known as flight muscles.
4. The body of the fish has certain special structures called fins. These are small projections at various parts of the body. Different fins help in different stages of swimming.
5. A snake moves very fast. It slides as it moves. We call this locomotion as crawling. Snakes move in a zigzag manner.

Things To Do

Do it yourself



5

Animals and their Homes

Exercise

A. Name the following :

- | | |
|-------------------|-------------|
| 1. a. Lion | b. Elephant |
| c. Monkey | |
| 2. a. Tailor bird | b. Parrot |
| c. Owl | |
| 3. a. Snake | b. Rat |
| c. Bandicoots | |

5. Pole Star is commonly called **North Star**.

B. Tick (3) the correct answer :

1. a. Sun 2. b. phases 3. c. constellations

C. Answer the following questions :

1. Sun and stars look so small as they are far, far away from the Earth.
2. We see a very bright star in the north. It is called the Pole Star or North Star.
3. There are many stars that appear together in groups. These groups of stars make some definite patterns. These groups of stars are called constellations.
4. Different shapes of the moon are called phases. On the full moon day, the full face of the moon can be seen. The moon is round, big and beautiful. On the new moon day, the moon lies between the Sun and the Earth. The rays of the Sun fall on the part of the moon which is away from the Earth. The Earth is behind the moon. It is dark on the new moon day.
5. The stars are seen in the sky at night only. They are there in the sky during the day also. But because of the bright light of the Sun, the light of the stars is dimmed out.
6. We use telescope to look at the stars.
7. As the moon grows from new to full, it is said to be waxing and after full it is said to be waning.

Things To Do

Do it yourself

Unit-V : Air, Water and Weather



7

Water : A Wonderful Liquid

Exercise

A. Fill in the blanks :

1. A solvent which contains a dissolved solute is called **solution**.
2. **Solubility** increases by stirring.
3. Some solids that are soluble in water are insoluble in **Kerosene**.
4. Tar dissolves in **Kerosene**.
5. Sand, clay and wax do not dissolve in **water**.

B. Tick (3) the correct answer :

rain.

2. When the Sun is hot and the day is bright, it is a **sunny** day.
3. Water when heated changes into water **vapour**.
4. **Evaporation** is a process by which a liquid changes into vapour.
5. **Condensation** is a process by which vapour changes into a liquid.
6. **Foggy** weather affects movement of vehicles on roads and aeroplanes in the air.

B. Tick (3) the correct answer :

1. a. time 2. a. evaporation 3. a. weather 4. c. sunny days

C. Match the following :

- | | | |
|---------------|---|--------------------|
| 1. Rainy day | → | a. Hidden sun |
| 2. Hot day | → | b. Umbrella |
| 3. Mid day | → | c. Uprooted trees |
| 4. Cloudy day | → | d. Cotton clothes |
| 5. Cold day | → | e. Woollen clothes |
| 6. Stormy day | → | f. Sun overhead |

D. Write 'T' for true and 'F' for false statements :

1. T 2. F 3. F 4. T 5. T 6. F

E. Answer the following questions :

1. Weather depends on the Sun, the wind, the clouds and the rain.
2. **Evaporation** : When sunlight falls on wet things, the water in them gets heated and changes into water vapour. This process by which a liquid changes into a gas on heating is called evaporation.
3. Water evaporates quickly when the temperature is high or when there is more heat. Water also evaporates faster when the weather is windy :
4. **Condensation** : If we cool water vapour or steam, it changes back into water. This process is known as condensation. Condensation is the process by which vapour changes back into a liquid.
5. **WEATHER FORECASTING** : Many of our activities are affected by sudden changes in weather. Farmers, fishermen, travellers and sailors depend very much on weather. So, man has been trying to know about the weather in advance. Knowledge of the weather on a future date is called weather forecasting.

6. Sunny days or hot weather is the suitable weather for travel and sports.

7. Water constantly evaporates from ponds, lakes, rivers and oceans by the heat of the sun. The water vapour moves upwards.

Water vapour cools and condenses on the dust and smoke particles and forms small droplets of water. These water droplets float in the air. Slowly these water droplets come closer to each other and form what is called a cloud.

As the clouds become cooler, more water condenses on the water droplets already formed. The water droplets become larger. They become too big to float in the air. So they fall to the ground as rain.

8. **WATER CYCLE :** By the heat of the Sun, water evaporates from ponds, rivers and seas to form water vapour. This water vapour forms rain clouds and the water again comes back to the Earth as rain. This cycle of events or this long journey of water Vapour from the sea and back to the sea through clouds and rain is called the water cycle.

Things To Do

Do it Yourself

Unit-VI : Human Body, Health and Hygiene



9

Human Body

Exercise

A. Name the following :

1. Skeletal System
2. Heart and blood vessels.
3. The kidneys, the lungs and the skin.
4. Brain, nerves and spinal cord
5. Eyes, Ears, Nose, Tongue, Skin

B. Tick (3) the correct answer :

- | | | |
|--------------|---------------|--------------|
| 1. b. system | 2. a. breathe | 3. c. Tongue |
|--------------|---------------|--------------|

C. Fill in the blanks :

1. In the **digestive** system the food becomes ready to be used by the body.
2. **The circulatory** system supplies oxygen and food to all the

parts of the body.

3. The **excretory** system helps to throw out waste materials from our body.
4. The big nerve connected to the brain is called **spinal cord**.
5. There are many **air sacs** in the lungs.

D. Match the following :

- | | | |
|------------|---|------------------------------------|
| 1. Kidneys | → | a. Digestion |
| 2. Heart | → | b. Respiration |
| 3. Lungs | → | c. Controlling the body activities |
| 4. Stomach | → | d. Circulation |
| 5. Brain | → | e. Excretion |

E. Answer the following questions :

1. Our body is like a machine. It is much more wonderful than any other machine. It has many parts. It can do many things which a machine cannot. Each part of our body has a special job to do.
2. The skeletal system gives form, shape and support to the body. It also protects some organs inside our body. It also protects some organs inside our body.
3. The Digestive System : We eat food. It is ground well in our mouth and swallowed. In this system the food becomes ready to be used by the body. The food we eat is in a complex form. The body cannot use it till it is broken down into a simple form. The organs forming the digestive system break down the food into a simple form. This can easily be used by the body.
4. We are able to know about the world with the help of our eyes, ears, nose, tongue and skin. These organs are called sense organs. We say that these are our windows to the world. The brain receives many kinds of messages through these organs.
5. The Nervous system consists of brain and nerves. A big nerve is connected to the brain. Many nerves are connected to the spinal cord. The brain receives messages from the sense organs and the other parts of our body. It sends out orders to the different parts and makes them work. The brain helps us to think, learn and remember.

Things To Do

Do it yourself



Exercise

A. Name the following :

- | | | |
|---------------------|-------------|--------------|
| 1. a. Carbohydrates | b. Proteins | c. Fats |
| 2. a. Sugar | b. Fruits | c. Oil seeds |
| 3. a. Milk | b. Pulses | c. Cereals |

B. Tick (3) the correct answer :

- | | |
|---------------------|------------------------|
| 1. a. Carbohydrates | 2. c. protective foods |
| 3. c. minerals | |

C. Fill in the blanks :

1. The essential things in our food are called the **nutrients**.
2. Energy-giving foods are **sugar** and **starch**.
3. Protective foods are **vitamins** and **minerals**.
4. Cooking makes food **soft, easily digestible** and **tasty**.
5. Cooking helps to kill the **germs**.

D. Match the following :

- | | | |
|------------------------|---|---------------------------|
| 1. Body-building foods | → | a. Milk |
| 2. Energy-giving foods | → | b. Vitamins and minerals |
| 3. Protective foods | → | c. Carbohydrates and fats |
| 4. Complete food | → | d. Proteins |

E. Answer the following questions :

1. We eat food because a food gives us energy and makes us strong. It builds the body and helps us to grow. It regulates the activities of the body and we work, study and play.
2. We eat different kinds of food. Every type of food contains some important things called nutrients. They are carbohydrates, proteins, fats, mineral salts, vitamins and water.
3. **Energy-giving Foods :** Foods containing carbohydrates and fats are called energy-giving foods. Sugar and starch are rich in carbohydrates. They give us heat and energy.
Fats give us more energy than carbohydrates. Oil seeds like cashewnuts, groundnuts, coconut, vanaspathi ghee, eggs, milk and butter have fat in them.
4. Foods rich in vitamins and minerals are called protective foods. Because they fight against diseases. They keep our skin

healthy and improve our eye-sight. They help in fighting against diseases.

5. Milk is superior to other foods. It helps us to grow, gives us energy, protects the body from diseases and heals wounds and injuries. It contains proteins, minerals, fats and vitamins. So it is called the complete food.

Things To Do

Do it yourself

Unit-VII : Safety and First Aid



11

Safety and First Aid

Exercise

A. Fill in the blanks :

1. **Carelessness** is a cause for accidents.
2. Be careful with **electric** appliances.
3. Do not **run** on the stairs.
4. Never get down from a bus while in **moving**.
5. We should know about **first** aid to help others.

B. Tick (3) the correct answer :

1. c. accidents
2. a. fire
3. b. first aid

C. Write 'T' for true and 'F' for false statements :

1. F
2. T
3. T
4. F
5. T

D. Answer the following questions :

1. Accidents take place when people are careless or are in a hurry.
2. We should wear tight and cotton clothes while working in the kitchen near the fire.
3. It is not good to fly kites from the terrace because you may fall down and hurt yourselves.
4. We should cross the road at zebra crossings only.
5. If the person is very badly hurt, send for a doctor at once. Follow the instructions of the doctor carefully.

Things To Do

Do it yourself

12

A Good House

Exercise

A. Fill in the blanks :

1. We cook our food in the **kitchen**.
2. The **doors** and **windows** should have proper bolts.
3. We should use **phenyl** to clean the drains.
4. Drains and dustbins should be kept **well covered**.
5. Thick walls and high roofs keep a house **cool in summer**.

B. Tick (3) the correct answer :

1. b. comfort
2. a. kitchen
3. c. thick

C. Answer the following questions :

1. Kitchen, dining room, store room, bedroom, toyroom, drawing room and bathroom.
2. We receive visitors and guests in the drawing room.
3. The walls of a good house should be thick; the roof must be high.
4. We should be used phenyl to clean the drain.
5. A good house should have all the basic things we need in our daily life. It should give us comfort. It should protect us from the hot sun, cold, strong winds and storm, rain etc. It should keep out animals and bad people like thieves. Such a house can be called a good house.

Things To Do

Do it yourself

13

Solids, Liquids and Gases

Exercise

A. Name the following :

- | | | | | |
|------------------|----------------|-----------------|--------------------|-----------------------|
| 1. Five solids. | Plastic | Wood | Iron | Tin |
| 2. Five liquids. | Petrol | Milk | Mustard oil | Water |
| 3. Five gases. | Oxygen | Hydrogen | Nitrogen | Carbon dioxide |

B. Fill in the blanks

1. A liquid takes the shape of the **container** .
2. A solid has a **definite** shape.
3. A liquid flows from a **high** level to **low** level.
4. Most of the food materials we take are **solids**.
6. Air is a **gas**.

C. Tick (3) the correct answer :

1. b. Three
2. c. Milk
3. a. hydrogen

D. What is formed when :

1. Water
2. Water vapour
3. Ice
4. Water

E. Define :

1. **Matter** : Anything that occupies space and has weight is called matter.
2. **Solids** : A solid is matter which has definite shape, and occupies a definite space. It is hard. It can be heaped. It can be easily transferred from one vessel to another. It has weight.
3. **Liquids** : A material like water is called a liquid. A liquid flows easily and takes the shape of the container in which it is kept. A liquid can flow more easily than a solid. A liquid has weight.
4. **Gases** : A gas has no definite shape of its own. It takes the shape of the container in which it is kept. It has weight.

F. Answer the following questions :

1. **Solids** : Occupies a definite space. It is hard. It can be heaped. It can be easily transferred from one vessel to another.
Liquids : A liquid flows easily and takes the shape of the container in which it is kept. A liquid can flow more easily than a solid.
Gases : It takes the shape of the container in which it is kept. It has weight.
2. Differences among solids, liquids and gases :

Solids	Liquids	Gases
1. All solids have definite shape of their own.	All liquids do not have definite shape and takes the shape of the container in which it is kept.	All gases do not have definite shape. It takes the shape of the container in which it is kept.
2. It can be easily transferred from one vessel to another.	It can flow more easily than a solid	It can be flow more easily than a liquid.

3. **Uses of Solids**

- Most of the food materials we take are solids. Wheat, rice, dals, vegetables, fruits, spices, nuts, sweets, salt and sugar are solids.
- Some solids are used as building materials for constructing buildings and dams e.g. sand, cement, mud, brick, etc.
- Iron is used for making the body of buses, cars, ships and other machines.

Uses of Liquids

- Water is the most important liquid, mainly used for drinking, cooking food and for cleaning.
- Water is very useful to plants. Plants absorb water from the soil and prepare their food (starch).

Uses of Gases

- Air is a gas found everywhere. Air is a mixture of oxygen, nitrogen, carbon dioxide and other gases. All living things, breathe in oxygen.
 - Plants use carbon dioxide for photosynthesis.
 - Hydrogen gas is used to fill hydrogen balloons.
 - Air is used to fill bicycle bus tyres and football bladders. Air is used to fill air pillows, balloons etc.
 - Some gases like 'gobar gas' and cooking gas are used as fuels for cooking.
4. Blow air into balloons of different shapes. Is the shape of the air in one balloon the same as that of the air in the other balloons? Air takes the shape of the balloon in which it is filled. By this activity we can show that air takes the shape of the container.
5. Take some ice-cubes from the refrigerator and keep them in a vessel. The ice cubes slowly melt and turn into water. Ice which is in the solid form has changed into liquid form called water.
- Now keep this vessel with water on the stove and heat it. Water boils and the steam rises into the air is in the form of a gas called water vapour. This steam is the gaseous form of water.

Things To Do

Do it yourself

Exercise

A. Fill in the blanks :

1. **Sandy** soil holds the least water.
2. **Loam** soil holds the most water.
3. Loam is a mixture of **sand** and **clay** with **humus**.
4. Plants grow **very well** in soil having mineral salts.
5. If plants do not grow well we add **fertilizers** to the soil.

B. Tick (3) the correct answer :

1. a. rocks
2. b. dark brown
3. c. Urea

C. Match the following :

- | | | |
|-----------|---|---------------------|
| 1. Stones | → | a. tiny particles. |
| 2. Sand | → | b. large particles. |
| 3. Clay | → | c. sand and clay. |
| 4. Loam | → | d. closely packed. |

D. Answer the following questions :

1. Soil is made up of gravel, sand, clay and humus.
2. The Sun, the wind and the rain act upon the rocks and break them into small pieces.
The Sun's heat causes cracks in the rocks. When it rains heavily, big drops of rain water strike the rocks with great force. The rocks are broke on town into smaller pieces.
The small pieces of the rocks are carried from one place to another by melting ice, rain and strong wind. Different kinds of rocks form different kinds of soil particles.
3. The small pieces of the rocks are carried from one place to another by melting ice, rain and strong wind.
4. Gravel, sand, clay and loam are four kinds of soils.
5. Dead leaves and decayed bodies of animals and plants form the humus. This is generally dark brown in colour.
6. In the beach and deserts we can find sand in very large quantities.
7. Clay is made up of very fine particles of soil. They are closely packed. They hold a lot of water. The air space is very little. Due to which waster can not pass through clay.

8. Loam is the best soil for growing plants.
9. In villages, farmers use fresh leaves, cow-dung and animal wastes as manure for their fields.

Things To Do

Do it yourself

Unit-XI : Measurements



15

Measurements

Exercise

A. Name the unit of each of the following :

- | | | | |
|-----------|---------------|----------------------|-----------------|
| 1. Length | Metres | 2. Weight | Kilogram |
| 3. Time | Second | 4. Volume of liquids | Litre |

B. Tick (3) the correct answer :

- | | | |
|------------------------|----------------|------------|
| 1. a. weighing machine | 2. c. kilogram | 3. b. 37°C |
|------------------------|----------------|------------|

C. Fill in the blanks :

1. Most of the things we use have to be **measured**.
2. **Length** is measured in metres and centimeter.
3. We use a **balance** or a **weighing** to measure weight.
4. We use **watches** and **clocks** to measure time.
5. **Rain guage** is used to measure rainfall.

D. Match the following :

- | | | |
|-------------------------|---|---------------------|
| 1. Balance | → | a. Volume |
| 2. Metre rod | → | b. Time |
| 3. Clinical thermometer | → | c. Weight |
| 4. Watches | → | d. Body temperature |
| 5. Measuring cylinder | → | e. Length |

E. Answer the following questions :

- | | | | |
|-------------|--------------------|--------------|-----------------|
| 1. a. Sugar | Kilogram | b. Silver | Kilogram |
| c. Firewood | Kilogram | d. Kerosene | Litre |
| e. Fever | Temperature | f. Rice bags | Kilogram |
2. 1000 grams equal to one kilogram.
 3. A Balance is a machine which is used to measure the weight of different things in grams or kilograms.
 4. Time is measured in seconds, minutes and hours. The unit of time is second. We use watches and clocks to measure time. Time is measured in days, months, weeks and years also.

5. The approximate normal body temperature of humans is 37°C (98.4°F)

Things To Do

Do it yourself



1

Leaves— The Food Factory of Plants

Exercise

A. Name the following :

1. Kitchen of a plant **Leaf**.
2. Lines on a leaf **Veins**
3. The process of preparation of food by plants **Photosynthesis**
4. Liquid used for testing starch **Iodine**
5. The flat broad part of a leaf **Leaf blade**

C. Tick (3) the correct answer :

1. c. Leaf
2. a. Leaf apex
3. b. Fungi
4. c. carbon dioxide

C. Write 'T' for true and 'F' for false statements :

1. T
2. T
3. F
4. F
5. T

D. Fill in the blanks :

1. Side veins carry **water, minerals** and **food** to all parts of a leaf.
2. **Photosynthesis** is the process by which leaves make their own food.
3. **Chlorophyll** and **sunlight** are necessary for plants to make food.
4. All living organisms need **food** to perform various activities.
5. Plants and animals are **interdependent** on each other for survival.

E. Match the following :

Column I

1. The process of preparing food
2. The flat surface of the leaf
3. Sun's energy is trapped in
4. Plants and animals
5. Gas given out during the process of photosynthesis

Column II

- a. Living organisms
- b. Chlorophyll
- c. Photosynthesis
- d. Oxygen
- e. Leaf blade

F. Answer the following questions :

1. Blade, petiole, stipules, midrib, vein.
2. The leaves of green plants contain a green substance called chlorophyll. Chlorophyll traps sunlight. Green leaves use the

energy of sunlight to prepare food from carbon dioxide and water.

3. Photosynthesis is the process by which green plants prepare their food in the presence of sunlight.
4. Do yourself
5. There are certain non-green plants that do not have chlorophyll and hence, cannot make their own food. These plants are called fungi. They depend on dead and decaying plants and animals for food. Mushroom, mould.

Things To Do

Do it yourself



2

Plants—Living and Surviving

A. Give two examples of each of the following :

- | | | |
|---------------------|------------|----------------|
| 1. Floating plants | Duckweed | Water Hyacinth |
| 2. Fixed plants | Water Lily | Lotus |
| 3. Submerged plants | Tape grass | Pond weed |

B. Tick (3) the correct option :

- | | | |
|------------|---------------------|----------------|
| 1. b. Pine | 2. b. Mangrove tree | 3. c. Duckweed |
|------------|---------------------|----------------|

C. Identify and name the following.

- | | | |
|--------------------|---------------|----------|
| 1. Coconut | 2. Payparus | 3. Lotus |
| 4. Breathing roots | 5. Adaptation | |

E. Write 'T' for true and 'F' for false statements :

- | | | | |
|------|------|------|------|
| 1. T | 2. F | 3. T | 4. F |
|------|------|------|------|

D. Fill in the blanks :

1. **Plants** grow almost everywhere.
2. Plants which need very less **water** can survive in a desert.
3. Mangroves have **breathing** roots.
4. The roots of the plants of the grass family help to **protect** soil.
5. **Grass** grows in wide open spaces.

F. Answer the following questions :

1. The plants that grow on land are called terrestrial plants.
2. Plants that grow in water are called aquatic plants.
3. Many trees grow in plains.
4. Plants that are fixed to the bed of the pond are called fixed plants.
5. Plants that grow under the water surface are called submerged

or underwater plants.

Things To Do

Do it yourself



3

Dispersal of Seeds

Exercise

A. Give two examples of each of the following :

- | | |
|-------------|-------------|
| 1. Cinchona | Drumstick |
| 2. Xanthium | Achyranthus |
| 3. Coconut | Lotus |
| 4. Pea | Balsam |

B. Tick (3) the correct answer :

- | | |
|---------------|----------------|
| 1. c. plants | 2. a. seed bed |
| 3. b. orchids | 4. a. water |

C. Fill in the blanks :

1. The scattering of seeds far from mother plant is called **dispersal**.
2. Seeds of orchids are dispersed by **wind**.
3. Drumstick seed has **wing** like expansion.
4. Coconut is dispersed by **water**.
5. Balsam spreads by **explosive mechanism**.

D. Write 'T' for true and 'F' for false statements :

- | | | | | |
|------|------|------|------|------|
| 1. T | 2. T | 3. T | 4. F | 5. T |
|------|------|------|------|------|

E. Match the following :

- | | | |
|--------------|---|------------------------|
| 1. Guava | → | a. Water dispersal |
| 2. Bauhinia | → | b. Animal dispersal |
| 3. Lotus | → | c. Wind dispersal |
| 4. Milk weed | → | d. Explosive mechanism |

F. Answer the following questions :

1. The distribution or spreading of seeds to far away places from the mother plant is called dispersal.
2. If all the seeds of a big tree fall under the tree and germinate and grow up you will see them crowded. There will be a struggle among the young plants for space. They will not be able to expose their leaves to the sunlight. Their roots may not

find enough space to go into the soil for water and mineral salts. The water and mineral salts in the soil will soon be exhausted. In the struggle to live on many may die. Some may die for want of sunlight. Some may die for want of water. Some may die for want of air. Only a few will be able to live.

Therefore, the seeds and fruits should fall far away from the mother plant. That is, the seeds should disperse.

3. Some seeds of grass, weeds orchids, cinchona, drumstick, gyrocarpus, seeds of silk, cotton, milk weed, sunflower, tridax and dandelion are dispersed by wind.
4. Many seeds like cinchona, drumstick and gyrocarpus and fruits have wing-like outgrowths which help them to fly in the air. These some are carried away to distant places.
Seeds of silk, cotton and milk weed (*Calotropis*) have fluffy hair. When the fruit bursts open, the seeds float in the air and are carried away to distant places.
Some seeds like sunflower, tridax and dandelion have hairy outgrowth called pappus. This pappus hair opens like an 'umbrella' and helps the seed to float. The seeds are carried away to distant places from the mother plant.
5. Many fruits have pointed and curved hooks, barbs, spines, stiff hairs on their body as organs of attachment. When animals pass that way or lie down on grass these stick on to their body surfaces. They also get attached to the clothes of human beings and are carried away to long distances.
6. Fruits like mangoes, tomatoes, guavas and many other fruits attract, birds. They eat the tasty juicy fruits and throw the hard seeds anywhere they like. Sometimes they swallow the seeds while eating the fruits. They digest the soft fruits. But the hard dry seeds are not digested and passed out in their faecal matter. Sometimes birds travel long distances and during their flight the seeds get deposited in several places.
7. Water is a very good medium for dispersal of seeds. Fruits that are dispersed by water are light, smooth and float on the surface of water. One such example is coconut. The outer surface of coconut is smooth and water-proof. The middle region is spongy and fibrous. This region traps the air and

makes it float.

8. Fruits of bean, pea, baubinia, balsam, castor and lady's finger show explosive mechanism. When ripe, they swell and burst at the slightest touch. These fruits are called explosive fruits and dispersal of seeds by this way is known as explosive mechanism.

Things To Do

Do it yourself

Unit-II : Human Body, Health and Hygiene



4

Food and Digestion

Exercise

A. Fill in the blanks :

1. Food gives us **energy** to work and play.
2. Digestion of food begins in the **mouth**.
3. The length of the small intestine is about **six** metres.
4. Digestion is completed in the **small intestine**.
5. The waste material is thrown out of our body through **anus**.

B. Tick (3) the correct answer :

1. a. carbohydrates 2. c. water 3. b. mouth

C. Write 'T' for true and 'F' for false statements :

1. F 2. T 3. T
4. T 5. F 6. F

D. Match the following :

- I
- | | | |
|--------------------|---|------------------------|
| 1. Mouth | → | a. Absorption of food |
| 2. Stomach | → | b. Absorption of water |
| 3. Liver | → | c. Saliva |
| 4. Small intestine | → | d. Gastric juice |
| 5. Large intestine | → | e. Bile |
- II
- | | | |
|------------------|---|-------------------------------------|
| 1. Starch | → | a. Keep the body healthy and strong |
| 2. Fats | → | b. Help our muscles to grow |
| 3. Proteins | → | c. Build our muscles to grow |
| 4. Mineral salts | → | d. Gives us energy |
| 5. Vitamins | → | e. Found in ghee and butter |

E. Answer the following questions :

1. The nutritious food contains proteins, carbohydrates, fats, vitamins and minerals in needed quantities. For healthy living, nutritious food is indispensable to us.
2. Nutrients are essential substances which are present in the food and essential for our body and healthy living. These are carbohydrates, fats, proteins, vitamins and minerals.
3. Malnutrition is a condition that results from eating a diet in which nutrients are either not enough or are too much such that the diet causes health problems. It may involve calories, protein, carbohydrates, vitamins or minerals.
4. The food we eat undergoes certain processes. These processes result in the formation of substances which can dissolve in blood. These processes are together called 'digestion of food'. Organs engaged in these processes are called digestive organs.
5. Mouth, stomach, small intestine, large intestine and anus are parts of alimentary canal.
6. The digestion starts in the mouth. We put the food in the mouth. Our teeth bite the food and grind the pieces of food well. Saliva (a liquid produced in some glands in the mouth) mixes with food when the teeth grind it. This juice (saliva) changes the starch contained in the food into sugar. The food is now soft and it is like a paste. Then the paste is swallowed and passed to the stomach.
7. The food paste made in the mouth and goes into the stomach through the food pipe.
The food reaches the stomach and remains there for nearly four hours. The stomach is like a bag. Its walls are made of muscles. These muscles expand and contract. The food is well-churned. There are some glands in the stomach which produce a digestive juice. An acid is also produced. These mix with the food. The juice acts on some parts of the food. The acid kills harmful germs, if any, in the food. The food from the stomach passes into small intestine little by little.
8. The small intestine is very long and thin. More digestive juices are produced here. One juice comes from liver. This is called bile. These juices act on the food. Digestion is completed in the small intestine.

9. Name foodstuffs rich in :
 - a. **Starch** : Wheat, rice, potatoes, bread.
 - b. **Fats** : Fats of animals, butter, ghee and oils.
 - c. **Proteins** : Meat, chicken, fish, eggs, beans, peas, milk and cheese.
 - d. **Mineral salts** : Meat, milk, fresh vegetables, cereals, eggs and fruits.
 - e. **Vitamins** : Green leafy vegetables, eggs, pumpkins, carrots, ghee Fruits like oranges and lemons Sunlight* and fish oils

Things To Do

Do it yourself



5

Food : Cooking and Preservation

A. Fill in the blanks :

1. **Chapatis** and **papads** are roasted on charcoal fire.
2. It is always better to cook food in just **sufficient** water.
3. Food gets **putrefied** quickly in summer than in winter.
4. **Salt** is a good preservative.
5. Drying prevents the growth of **bacteria** and other **micro-organisms**.

B. Tick (3) the correct answer :

1. a. steaming 2. c. microorganisms
3. b. carbon dioxide

C. Write 'T' for true and 'F' for false statements :

1. T 2. F 3. T 4. F 5. T

D. Name the following :

1. Rice Vegetables 2. Sweets Savouries
3. Fruits Nuts 4. Bacteria Yeast
5. Fruits Vegetables

E. Match the following :

- | | | |
|-------------------------|---|--|
| 1. Sweets and savouries | → | a. Destroys the vitamins |
| 2. Vitamin B and C | → | b. Become inactive of very low temperature |
| 3. Overcooking | → | c. Frying |
| 4. Bacteria | → | d. Food stuff containing sugar |
| 5. Fruit jams | → | e. Water soluble |

F. Give reasons :

1. Most of the food we eat is well cooked. Cooking makes the food tasty, easily digestible and free from germs.
2. Cut fruits from hawkers should not be eaten. Such cut fruits are exposed to flies. They deposit harmful germs on them. Roadside dust also collects on them.
3. Preservation helps to avoid wastage of food. If food is preserved properly, we can make seasonal food available throughout the year.

G. Answer the following questions :

1. Rules To Be Observed In Cooking

- Some vegetables like cauliflower, cabbage, tomatoes, carrots and leafy vegetables should not be overcooked. Overcooking destroys the vitamins contained in them.
 - Vitamins are lost by our various methods of cooking.
 - Cooking at high temperature and over a long period of time destroys the vitamins.
 - Some vitamins and mineral salts are water soluble. If vegetables or cereals are soaked in water for a long time, the vitamins and mineral salts dissolve in it. So this water should not be thrown away. We can use the excess water for soup preparation or for preparing sauce or gravy. It is always better to cook food in just sufficient water.
2. Boiling, steaming, frying, baking and roasting are different methods of cooking.
 3. Food is generally preserved by the following methods : keeping it in a refrigerator or cold storage, canning, pickling, salting, adding sugar, drying, boiling and storing in air-tight containers.
 4. **Salting :** Salt is a good preservative because microorganisms cannot live in salt solution. Some vegetables and fruits can be salted and preserved for some time. Dry fish is salted and

preserved.

5. **Canning** : Foods like fruits, vegetables and fish are boiled, excess water is removed, sterilised and put into sterile germ free containers and tins. They are closed air-tight and sealed cans and this method is known as canning.

This method is mostly used in cold countries. Canned foodstuffs remain safe from the action of bacteria and moisture. Tinned foodstuffs last longer.

6. Food-grains like rice, wheat, maize, bajra, jowar and pulses like gram, peas, beans are dried well in the Sun to remove the moisture. They are then kept in dry containers. Once in a while they should be exposed to sunlight.

Things To Do

Do it yourself



6

Our Teeth

A. Fill in the blanks :

1. A newborn baby has **no** teeth.
2. As the baby grows older, the teeth that come out one by one are called **milk teeth**.
3. Eating hard foods like **vegetables, cereals** and **fruits** provides exercise to the gums.
4. Milk teeth are **twenty** in number.
5. Permanent teeth are **32** in number.

B. Tick (3) the correct answer :

1. c. permanent
2. b. tearing teeth
3. a. pain

C. Which of the following will happen if we do not brush our teeth?

1. 7
2. 3
3. 3
4. 3
5. 7

D. Match the following :

- | | | |
|--------------------|---|------------------------|
| 1. Milk teeth | → | a. Ten in each jaw |
| 2. Permanent teeth | → | b. Four in each jaw |
| 3. Cutting teeth | → | c. Two in each jaw |
| 4. Tearing teeth | → | d. Sixteen in each jaw |
| 5. Grinding teeth | → | e. Twenty in number |

E. Rewrite the following sentences correctly :

1. Milk teeth are **temporary**.
2. Decay of food in the mouth provides the **toothache and diseases**.
3. We must use **good** toothpaste for brushing our teeth.
4. To let our teeth and gums remain **clean** is to take good care of our teeth.

F. Which of the following is right? Why?

1. Wrong
2. Wrong
3. Right brushing removes the food particles sticking in the teeth.

G. Answer the following questions :

1. The teeth help us to break the food into bits and chew them. Our teeth help us to pronounce the words correctly when we speak. The natural shape and appearance of our face are due to the teeth in our mouth. Thus, the teeth are useful to us.
2. As the child grows older and older these drop out and new, big, strong teeth come out in their places. These are permanent teeth. There are thirty-two teeth in the mouth of a grown up man, sixteen in the upper jaw and sixteen in the lower jaw.
3. Toothache, teeth decay and cavities are common dental problems.
4. To prevent tooth decay and remain clean is known as teeth care. If by accident or by carelessness if a person loses his permanent teeth, they cannot be replaced by new natural teeth. So, we must take good care of our teeth.
5. Follow simple rules to avoid tooth decay :
 - (i) Brush your teeth in the morning and before going to bed. Brushing removes the food particles sticking in the teeth.
 - (ii) Use a good toothpaste or tooth powder.
 - (iii) Rub your teeth clean from all sides with your fingers when you rinse your mouth.
 - (iv) Avoid eating too much sweets and chocolates. Chocolates and sweets harm the teeth.
 - (v) Do not allow chocolates and sweets to stick to the teeth.
 - (vi) Do not eat when the food is too hot or too cold. Avoid cool drinks and ice creams. These will affect the enamel and cause tooth decay.
 - (vii) Drink plenty of milk. This will help you to have strong

teeth.

(viii) Visit your dentist regularly and get his advice. This will help you to be a healthy person.

6. Incisors, canines, pre-molars and molars.

Things To Do

Do it yourself

Unit-III : Animals Life



7

Reproduction in Animals

Exercise

A. Name the following :

1. Birds, snakes, lizards, turtles, fish
2. Cow, horse, lion, deer, dog
3. Snakes, lizard, frogs, insects
4. Egg, larva, pupa and adult.

B. Tick (3) the correct answer :

1. b. reproduction
2. a. yolk
3. c. wriggler

C. Fill in the blanks :

1. Frog lays its eggs in **water**.
2. The mother bird brings food and feeds its **young ones**.
3. The **yolk** is a thick yellow liquid inside the eggs.
4. Wingless young ones of a cockroach are called **nymphs**.
5. The **parents** take care of their children.

D. Write 'T' for true and 'F' for false statements :

1. T
2. F
3. F
4. T
5. F

E. Match the following :

- | | | |
|--------------|---|------------------------------|
| 1. Cockroach | → | a. Gives birth to young ones |
| 2. Birds | → | b. Tadpole |
| 3. Insect | → | c. Nymph |
| 4. Frog | → | d. Nests |
| 5. Cow | → | e. Caterpillar |

F. Answer the following questions :

1. All living things such as animals increase in number. They are able to produce their own kind. This process of producing one's own kind is known as reproduction.

2. Our parents look after us and take care of our needs. This is called parental care.
3. Some animals look after their young ones right from the time of birth. You might have observed your pet dog looking after its pups or the mother cat taking care of its young kittens. They do not allow any one to go near their young ones. Parent birds do not allow their enemies to come anywhere near their nests. Mammals show much parental care.

Things to Do

Do it yourself



8

The Uses of Animals

Exercise

A. Fill in the blanks :

1. We get **milk** from the cow.
2. **Animals** are useful for labour.
3. We get **wool** from sheep.
4. We get **eggs** from the hen.
5. Skin of dead animals are tanned to make **leather**.
6. Gobar gas is a gas produced from **cowdung**.

B. Tick (3) the correct answer :

- | | | |
|-------------|---------------|--------------|
| 1. a. cats | 2. c. poultry | 3. b. camels |
| 4. a. sheep | 5. c. nectar | |

C. Write 'T' for true and 'F' for false statements :

- | | | |
|------|------|------|
| 1. F | 2. T | 3. T |
| 4. F | 5. F | 6. T |

D. Is it right or wrong to :

- | | | |
|----------|----------|----------|
| 1. right | 2. right | 3. right |
| 4. right | 5. right | |

E. Match the following :

- | | | |
|--------------------|---|----------------|
| 1. Milk | → | a. Cattle dung |
| 2. Farm labour | → | b. Hen |
| 3. Make soil loose | → | c. Cow |
| 4. Eggs | → | d. Bullock |
| 5. Biogas | → | e. Earthworm |

F. Answer the following questions :

1. Cows, buffaloes, hens and goats.

2. Hen, duck.
3. The domestic animals which help in carrying the loads are called beasts of burden. We domesticate horses, donkeys, mules and camels to carry loads and pull vehicles. Elephants are used to carry timber in forests. Camels are used to carry loads in the desert for long distances for many days. In our country bullocks pull the cart.
4. Skin is the outer covering of the animals. The skins of animals are used for various purposes. They are made to undergo certain changes with chemicals and converted into hides in tanneries. These hides help in the preparation of leather. We make suitcases, bags, belts, purses, shoes, footwear and other things out of leather.
5. Wool is the soft curly hair of animals like sheep, goat, llama and alpaca. The wool is converted and produced into woollen threads. From these woollen threads shawls, blankets and woollen clothes are made. People in winter wear woollen clothing.
6. The dung of certain animals is useful to us. It is not a waste. Cowdung and the dung of buffalo are made into farmyard manure.

Things To Do

Do it yourself

Unit-IV : Matter and Materials



9

Matter and its Properties

Exercise

A. Fill in the blanks :

1. Matter exists in **three** different states.
2. The molecules of the **gases** are free to move.
3. **Transparent** things allow light to pass through them.
4. All matter is made up of **molecules**.
5. In **gases** molecules are very loosely packed.

B. Tick (3) the correct answer :

1. b. conductors 2. b. transparent 3. c. sulphur

C. Classify the following materials as transparent and opaque :

Transparent : air, water, a mirror, polythene, cellophane.

Opaque : Thick cotton cloth, plank of wood, a sheet of aluminium, metal sheet, cardboard, asbestos sheet.

D. Write 'T' for true and 'F' for false statements :

1. F 2. F 3. T 4. F 5. T

E. Match the following :

- | | | |
|--------------------------|---|----------------|
| 1. Glass | → | a. Copper |
| 2. Cotton | → | b. Wood |
| 3. Iron | → | c. Transparent |
| 4. Non-conductor of heat | → | d. Soft |
| 5. Conductor of heat | → | e. Unbreakable |

F. Name three examples in each of the following :

1. **Solids :** Stone, wood, rubber
2. **Liquids :** Milk, water, cooking oil
3. **Gases :** Oxygen, hydrogen, carbon dioxide
4. **Soft matter :** Flower, cotton, silk
5. **Hard matter :** Glass, an iron ball, a stone
6. **Transparent things :** Cellophan, glass, mica
7. **Conductors of heat :** Iron, copper, aluminium
8. **Non-conductors of heat :** Wood, glass, cork
9. **Substances that dissolve in water :** Sugar, common salt, chlorime

G. Answer the following questions :

1. Matter is made up of very small particles called molecules. Matter may be living or non-living. Matter exists in three different states. They are solids, liquids and gases.
2. The three states of matter are solids, liquids and gases.
3. Solids have a fixed shape and volume. In solids the molecules are very closely packed. That is why, they have definite shape.
4. Matter is made up of very small particles called molecules.
5. All matter whether solid, liquid or gas is made up of tiny particles called molecules.

Things To Do

Do it Yourself



Soil Erosion and Conservation

Exercise

A. Fill in the blanks :

1. Soil is formed by the disintegration of **rocks**.
2. The soil is eroded by the action of **rain** and **strong wind**.
3. The soil loses plant nutrients because of **soil erosion**.
4. By checking the speed of the flowing water on land **soil erosion** can be prevented.
5. **Terrace** cultivation is carried on the slopes of the hills.

B. Tick (3) the correct answer :

1. a. centimetres 2. b. silt 3. c. hill slopes

C. Write 'T' for true and 'F' for false statements :

1. T 2. T 3. T 4. T 5. T

D. Match the following :

- | | | |
|--------------------------|---|--|
| 1. Top soil | → | a. Cutting down the trees in the forests |
| 2. Soil erosion | → | b. Conservation of soil |
| 3. Deforestation | → | c. The uppermost layer |
| 4. Bunds and embankments | → | d. Cause obstruction to the strong winds |
| 5. Trees | → | e. The removal of the soil |

E. Answer the following questions :

1. Loamy soil is suitable for cultivation of plants.
2. Rocks which cover the major surface of the Earth are exposed to the hot Sun. During day time the rocks are heated by the Sun's rays. Heat expands bodies. So the heat of the day expands rock's surfaces. During the night time the rocks become cold. So they contract. This alternate expansion and contraction of rock surfaces break up the rocks into smaller rocks. The action of expanding and contracting of the rocks is called weathering.
3. Soil erosion cannot take place in forest areas. The speed of the wind and the flow of the water are arrested by trees. Cutting down the trees in the forests is called deforestation. Deforestation enables rain and wind to erode the soil.
4. The top-soil is loose and light. The rain, the rivers and strong

winds carry away the loose top-soil and deposit them at other places. By this soil lose plant nutrients.

5. Construction of bunds and embankments will help to conserve soil. The running water can be checked by making thick and strong bunds. Bunds will obstruct the speedy flow of water. They also change the direction of the flow of water. In this way soil erosion can be prevented.
6. Water flows down a slope with great force and erodes a lot of soil. To make the water flow slowly, terraces are made along the hill slopes. These terraces weaken the force of water coming down from the top of hills. Most of the soil in the water is left behind on the terraces. The edge of the terraces can also be raised. Soil erosion is thus, reduced. People living on the slopes of hills make terraces, conserve the soil and grow crops on the slopes of hills.

Things To Do

Do it yourself

Unit-VI : Air, Water and Weather

Drinking Water

11

Exercise

A. Fill in the blanks :

1. Water is lost from our body as **urine** and **sweat**.
2. In the towns and cities drinking water is supplied from **storage tanks**.
3. Purification of water in reservoir is done by **filtration**, **sedimentation** and **chlorination**.
4. Boiling kills the **germs** in the water.
5. In the towns and cities water is first stored in the **reservoirs**.
6. Over population causes **pollution** of water.

B. Tick (3) the correct answer :

1. a. Three-fourths 2. c. sea
3. b. clean and pure 4. c. the sources of water are unlimited

C. Write 'T' for true and 'F' for false statements :

1. T 2. T 3. T 4. F 5. T 6. T 7. T

D. Match the following :

- | | |
|---------------------|-------------------------------------|
| 1. Water | a. Contains germs |
| 2. Rivers and lakes | b. Underground water |
| 3. Polluted water | c. Purification of water |
| 4. Handpumps | d. One of the most useful substance |
| 5. Boiling | e. Shortage of water |
| 6. Over population | f. Sources of water |

E. Answer the following questions :

- Drainage water from the towns and cities flows into lakes and rivers and pollute them. The industrial wastes from factories, tanneries, breweries and other industrial centres flow into the lakes and rivers and pollute the water.
The rain water washes the wastes of plant and animal matter and carry them to the lakes and rivers. In these ways the drinking water gets polluted.
Water for drinking taken from tanks or rivers gets polluted in several ways. People wash their dirty clothes and vessels in the water. Animals too bathe in the water in the tanks and rivers. Once these things happen very near to the water resources water gets polluted.
- Lake, river and under ground water.
- We must take special care to purify the drinking water. Diseases such as cholera, typhoid, dysentery, jaundice and diarrhoea are spread through pollute water. So we should drink clean water which is necessary for health.
- In the towns and cities water is first stored in reservoirs. From there it is taken to the storage tanks by the water works. There chemicals are added to the water. The sediments in the water go down and settle at the bottom of the tanks. Then it is passed through filter beds. At first it passes through sand, then small pebbles and finally through ground. Thus the water gets filtered. Then it is treated with chlorine gas. It kills the germs in the water. At last it is distributed through pipes.
- The increased population may cause increased wastes. These wastes may be washed by the rain water into the open wells, ponds, rivers, streams, etc. Thus, increased population leads to pollution of water.
- Over population causes shortage of water. So water becomes precious. It should not be wasted. It should be saved as much as possible. We should not open the tap and wash our hands or our vessels. We should take water from the tap in vessel and then wash either our hands or our vessels. We should not take

too much of water and drink half of it and pour out the other half. We should not open the tap and take bath in the water. We have to take water in a tub and then use it for bathing. In these ways wastage of water could be avoided.

Things To Do

Do it Yourself



12

The Changes in Weather

Exercise

A. Fill in the blanks :

1. The **Sun** is the chief source of heat.
2. During the **winter** days are shorter.
3. Sand warms **faster** than water.
4. The presence of water vapour in the air is known as **humidity**.
5. Weather affects the life of **people, plants and animals**.

B. Tick (3) the correct answer :

1. a. hot
2. c. summer
3. c. hailstones

C. Write 'T' for true and 'F' for false statements :

1. T
2. F
3. F
4. T
5. T

D. Answer the following questions :

1. Sand
2. The volume of air increases when it is warmed.
3. Hot air
4. **Sea breeze** : During the day the land near the sea gets heated faster than the sea. So the air above the hot land also heats up becomes lighter and rises up. The cold air above the sea rushes towards land to take the place of the warm air. This gives rise to a constant flow of air from the sea to the land. This is called the sea breeze.
5. **Land breeze** : At night the land cools down faster than the sea. So the air above the sea which is hotter rises, up and the cooler air above the land rushes to take its place. This gives rise to a constant flow of air from the land towards the sea called the land breeze.

Things To Do

Did it yourself



Force, Work and Energy

Exercise

A. Fill in the blanks.

1. Pulling or pushing sets the body in **movement**.
2. **Force** is needed to push or pull.
3. Force can stop a **moving** body.
4. The main source of heat is the **Sun**.
5. The mixie works with the help of **electrical** energy.
6. Kerosene burns in the stove and releases **fuel** energy.
7. Refrigerator works with the help **electrical** energy.
8. The **sun** is the birth place of all kinds of energy.
9. The **solar** energy is used in solar cookers.
10. Fuels are capable of supplying **energy**.

B. Tick (3) the correct answer :

1. c. the earth 2. c. force 3. a. muscular force 4. b. Energy

C. Write 'T' for true and 'F' for false statements :

1. T 2. T 3. T 4. F 5. F
6. T 7. F 8. T 9. F 10. T

D. Match the following.

- | | | |
|----------------------|---|-------------------|
| 1. Solar energy | → | a. Sewing machine |
| 2. Electrical energy | → | b. Seeing things |
| 3. Heat energy | → | c. Catapult |
| 4. Chemical energy | → | d. Windmill |
| 5. Wind energy | → | e. Match stick |
| 6. Elastic energy | → | f. Kerosene |
| 7. Light energy | → | g. Refrigerator |
| 8. Mechanical energy | → | h. The sun |

E. Answer the following questions :

1. A push or pull is called force.
2. Capacity to do work is called energy. We go from one place to another. We require energy to walk. We carry load. We need energy to carry load. We require energy to write, to lift things and even when we are sleeping.
3. The different kinds of energy are mechanical energy, muscular energy, heat energy, light energy, magnetic energy, chemical

energy, electrical energy, wind energy, etc.

4. We use our arms to draw water from a well, to lift load, to play a catapult and many such activities. We are able to do such work because our arm muscles give us the energy to do work. The energy to do the work is supplied by the muscles. So it is called the muscular energy.

5. We use the fuel like petrol or diesel for the automobiles to run.

6. Say whether a 'push' or 'pull' is used in the following :

(1) Pull (2) Push (3) Push (4) Pull

7. **Electrical energy** : In our homes we use electric lights, electric heaters, radio, television, refrigerators and washing machines. These work with the help of electricity which supplies electrical energy.

Mechanical energy : The energy produced by moving objects is known as mechanical energy. Moving air and water is used to run wind mills.

8. **Biogas**—Biogas typically refers to a mixture of different gases produced by the breakdown of organic matter in the absence of oxygen. Biogas can be produced from raw materials such as agricultural waste, manure, municipal waste, plant material, sewage, green waste or food waste.

9. Human population is increasing day by day. The number of dwellings is increasing. Industries are increasing. New townships are springing up. With the increase of population there is increase in the demand for energy. We need more of food and fuels like wood, coal, petrol and kerosene. The present supply of these fuels is not enough to meet the needs of the increasing population. Due to increasing population there is shortage of food, fuels, water, etc. So there is energy shortage due to increasing population.

10. Give one example of each of the following :

(a) Oven (b) Light Bulb (c) Electric locomotive

11. The Sun, the food we eat and the fuels are the sources of energy. We also get energy from water and wind. The Sun is the main source of energy. The Sun gives us heat and light. The Sun's energy is the main cause of rain, wind and weather. The Sun's energy is the cause of fuel and fire.

Things To Do

Do it yourself

A. Fill in the blanks :

1. Clothes **protect** our body.
2. Clothes make us look **smart**.
3. Nylon is a **man-made** fibre.
4. **Cotton** is the most important textile fibre.
5. **Woollen** clothes keep us warm in winter.
6. **Jute fibre** is generally used to make gunny bags.

B. Tick (3) the correct answer :

- | | |
|--------------|--------------------|
| 1. a. cool | 2. b. silk |
| 3. a. costly | 4. c. dry-cleaning |

C. Write 'T' for true and 'F' for false statements :

- | | | | | |
|------|------|------|------|------|
| 1. F | 2. F | 3. T | 4. T | 5. T |
|------|------|------|------|------|

D. Name the following :

- | | | | |
|--------------|----------|----------|---------|
| 1. Cotton | Jute | 2. Sheep | Camel |
| 3. Rayon | Nylon | 4. Takli | Charkha |
| 5. Dry-clean | Handwash | | |

E. Match the following.

- | | | |
|------------|---|--------------------------|
| 1. Wool | → | a. Animal's skin. |
| 2. Silk | → | b. Artificial fibre. |
| 3. Jute | → | c. Obtained from sheep. |
| 4. Nylon | → | d. Has great lustre. |
| 5. Leather | → | e. Made into gunny bags. |

F. Answer the following questions :

1. Clothes protect us from heat, cold and rain. They also protect us from dust and insects.
2. We get fibres or raw materials for cloth from plants and animals.
3. We wear cotton clothes in summer because cotton clothes are light and they keep our body cool. They protect us from heat.
4. We wear woollen clothes in winter to protect us from cold weather. Woollen clothes keep us warm.

5. Caring For Clothes

We should take good care of our clothes. This will make them

look clean. They will also last longer. Here are certain ways we can look after our clothes.

- Clothes should be washed regularly.
- Clothes should be dried in the Sun. Sunlight kills the germs. After drying, clothes should be ironed.
- Woollen, silk and expensive clothes should be dry-cleaned or hand washed carefully.
- Woollen and silk clothes should be stored properly when not in use. They should be kept with moth balls or dried neem leaves in dry, closed boxes or almirahs. If they are not stored properly, insects such as silverfish can damage them.

Things To Do

Do it yourself

Unit-IX : Safety and First Aid



15

Safety and First Aid

Exercise

A. Fill in the blanks :

1. If we are **careful** we can prevent accident.
2. Never play with **sharp** instruments.
3. Electrical switches should be put **off** after use.
4. Never wear dress made of **synthetic materials** when near fire.
5. When an accident occurs we must get the help of a **doctor**.
6. Always keep the wounds **covered** by a bandage.

B. Tick (3) the correct answer :

1. c. happy
2. a. fire
3. c. road

C. Write 'T' for true and 'F' for false statements :

1. T
2. T
3. T
4. T
5. F

D. Answer the following questions :

1. Safety Rules On The Road

- Do not walk in the middle of the road. Always walk on the pavements of the road.
- Always cross the roads at the “pedestrians cross” marked on the road. Before crossing, look first to your right and then to your left and if the road is clear, cross the road. Never run to cross the road.

- When you have to cross the road at corners wait till all the vehicles have completed turns at the corners. Then cross it.
 - Never cross the road from behind a standing vehicle.
 - Do not walk in between vehicles parked on the road.
 - Do not play on the road.
 - In busy places, obey the traffic signals.
2.
 - All electrical equipments should be handled very carefully.
 - All equipments should be in good working condition. There should be no leak anywhere.
 - Switches must be put off after use.
 - Do not touch the electric stove, kettle or heater before switching off the current.
 - When you are heating water with an electric rod, do not touch the bucket or the water in it before switching off the current.
 - While the current is 'on' never touch the vessels.
 - Do not touch a plug, a switch or a wire with wet hands.
 - If you receive a shock, immediately switch off the current.
 3. Before crossing, a busy road we look first to our right and then to our left and if the road is clear, cross the road. Never run to cross the road.
 When we have to cross the road at corners wait till all the vehicles have completed turns at the corners. Then cross it.
 Never cross the road from behind a standing vehicle.
 4. If any person receives a shock, immediately switch off the current.
 5. **First Aid :** When accidents occur, we must try to get the help of a doctor, and send for him immediately. Before the arrival of the doctor, or before we take the person to the doctor or hospital some temporary aid is to be given. This aid is called First Aid.
 6. If there is bleeding from a cut or a wound, put a clean wet cloth over it and press a bit.
 - Tie a bandage over the wound.
 - Keep the wounded part at a higher level than the heart.
 - If it is possible, place a piece of ice over the wound to hasten clotting of blood.

7. **Insect bites :** Some insects may bite you. Insect bites are very painful. A bee or a wasp may sting you. Sometimes the end of the sting is broken and left sticking in the wound. (i) Press both sides of the wound with your fingers. Thus the broken end of the sting can be removed. (ii) Wash the injured part with lime water or a solution of ammonia. (iii) Ice may be placed over the injured part. (iv) When a scorpion stings you the poison spreads to other parts of the body and causes great pain. (v) Remove the broken end of the sting (if you see it sticking in the place) where you have been stung (vi) Put a mixture of potassium permanganate and tartaric acid on the wounded part (vii) Pour a few drops of water over the mixture.
8. **First Aid Box :** It is always better to keep a first aid box in the house. This may contain :
- | | |
|----------------------------------|-----------------------------|
| 1. A pair of scissors | 2. Some safety pins |
| 3. A sterilized cotton roll | 4. Rolls of cotton bandages |
| 5. Tincture of iodine or benzoin | |
| 6. Dettol | 7. Nebasulf powder |
| 8. Cibazol | 9. Burnol |
| 10. Band-aid plasters | |

Things To Do

Do it yourself

Unit-X : The Universe



16 Our Earth and the Sky-Solar System

Exercise

A. Fill in the blanks :

1. The Sun is a **star**.
2. **Planets** do not produce light of their own.
3. The light reflected by the **moon** is known as moonlight.
4. The Earth's satellite is the **moon**.
5. The Earth spins on its own axis from **west** to **east**.

B. Tick (3) the correct answer :

- | | | |
|-------------------------|---------------|-----------------|
| 1. a. hot glowing gases | 2. c. Jupiter | 3. b. Aryabhata |
|-------------------------|---------------|-----------------|

C. Write 'T' for true and 'F' for false statements :

1. F 2. T 3. F 4. T 5. F

D. Match the following :

- | | | |
|------------|---|------------------------------------|
| 1. Venus | → | a. Largest planet |
| 2. Earth | → | b. Second largest planet |
| 3. Jupiter | → | c. Planet appears blue-green |
| 4. Saturn | → | d. Natural satellite of the earth. |
| 5. Moon | → | e. Closest planet to the earth |

E. Answer the following questions :

1. **Planets :** There are a few heavy bodies which reflect light continuously but do not twinkle. These bodies are called planets. They do not produce light of their own, but only reflect the light of the Sun. So they are said to be non-luminous. There are eight planets in the family of the Sun. Our Earth is also a planet. Each planet moves round the Sun on its own path called an orbit. Each planet remains in its own orbit. There are eight planets in the sun's family (Solar System). They are : Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.

The Stars : You all must have seen stars twinkling in the sky at night. We can see thousands of stars on a clear, cloudless night. They may look very close but actually they are very far away from us. The stars are hot glowing balls of fire and produce their own light all the time. So they are known as luminous. But during the day, due to the bright light of the sun, the light of the stars is dimmed out. So we cannot see the stars during day-time.

2. The Sun is a star. The Sun is seen in the sky at day time. The Sun is the nearest star to our Earth. The Sun is a large sphere of hot glowing gases. It gives of its own bright light and great heat. The Sun is the chief source of all energy. Plants need sunlight to photosynthesis or produce the food. We can say that the sun is the chief source of energy on the earth.
3. A satellite is a heavenly body (object) which goes around another bigger heavenly body along its own orbit. Any object that orbits round planets is called its satellite.
4. **Uses of artificial satellites**
- (i) Weather forecasting.

- (ii) Television and radio transmission.
 - (iii) Communication to make long distance telephone calls or send and receive emails.
 - (iv) Improvement of agricultural production.
 - (v) Locating ground water and mineral resources.
 - (vi) Maps drawn and compiled by satellites help pilots, sailors, builders, soldiers, geologists and tourists.
5. A comet is a temporary visitor in our solar system. Generally comets have round head and long tail like broomstick. They revolve round the sun. Their tails are formed when they come very near to the Sun. Their tails disappear when they are apart from the Sun.
- We are familiar with the Halley's comet which visited in 1986. It is seen in our solar system after about every 75 years. Before 1986 it appeared in 1910 will again be seen in 2062.

Things To Do

Do it Yourself

More About Plants

Exercise

A. Fill in the blanks :

- Reproduction** is an important process for the continuity of life on the Earth.
- Seeds need adequate **water** and **sunlight** to grow into healthy plants.
- Sweet potato and carrot are **roots** that store food.
- Crops that are grown in the summer season are called **Kharif** crops.
- Wheat** and **gram** are rabi crops.

B. Tick (3) the correct option :

- a. Cotyledons 2. c. Begonia
- b. Wheat 4. c. wind

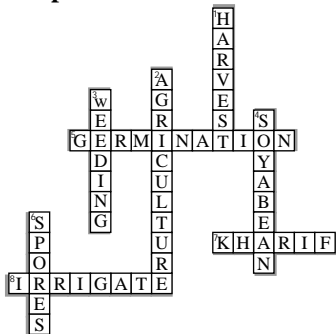
C. Write 'T' for true and 'F' for false statements :

- F 2. T 3. F 4. T 5. T

D. How are these seeds dispersed? Tick (3) the correct option :

- Coconut : wind ☒ water ☐ animal ☐ explosion ☐
- Drumsticks : wind ☒ water ☐ animal ☐ explosion ☐
- Peas : wind ☐ water ☐ animal ☐ explosion ☒
- Jacaranda : wind ☒ water ☐ animal ☐ explosion ☐
- Mango : wind ☐ water ☒ animal ☐ explosion ☐

E. Complete the crossword with the help of the given clues :



F. The following vegetables have got mixed up. Separate them into summer and winter crops :

Summer crops

Brinjal
Pumpkin
Carrot Bitter gourd

Winter crops

Radish
Cabbage
Lady's finger

G. Match the following :

- | | |
|--------------------------|-----------------------------|
| 1. Spores | → a. thick and fleshy |
| 2. Bryophyllum | → b. sori |
| 3. Roots that store food | → c. cotton and jute |
| 4. Fibre crops | → d. sunflower and soyabean |
| 5. Food crops | → e. potato and carrot |
| 6. Oil-producing crops | → f. wheat and sugarcane |

H. Answer the following questions :







1. Plants produce from seeds and parts of plants.
2. The process by which seeds come back to growth and activity is called germination.
3. The process by which seeds are scattered away from the parent plant is called seed dispersal.
They may be carried far away by wind, water or animals. These are called agents of dispersal.
4. Cuttings of stems are taken from parent plants that have buds on them. New plants grow from these buds.
5. After eating litchi, peach, papaya, orange and other fruits, we throw away their seeds. When these seeds fall on the ground, they germinate. In this way, we help in their dispersal.
6. Seeds that are small and light in weight are usually dispersed by wind. Cotton and dandelion seeds have fine, long hair around them. So they are easily carried away by the wind. Some seeds have wing-like structures that help them float in the air. Seeds of plants such as drumstick, jacaranda and maple have wings.
7. Some plants reproduce from their leaves. The leaves of Bryophyllum are thick and fleshy, and also have many buds along their edges. New plants grow from these buds.
8. In India, crops that are grown in the summer season are called kharif crops. Rice, jowar, bajra, jute, hemp, peanuts, millet, maize and pulses are kharif crops.
9. Plants that are grown in large quantities to provide food and

other useful substances are called crops.

Crops need proper care so that they can produce a better yield. Here are some tips for growing healthy crops.

- The crop to be grown should be selected after considering the kind of soil in the area. For example, rice grows well in wet, clayey soil, but groundnut needs porous, sandy soil.
- Manure and fertilisers should be added regularly to the soil in sufficient quantities. This would make the soil fertile.
- The seeds sown should be mature and of good quality. Also, seeds should not be planted too close to each other or too deep in the soil.
- Adequate water should be provided at the different stages of plant growth.
- Crops should be sprayed with insecticides and pesticides to keep them free from pests, diseases and harmful animals.
- Weeding (removal of unwanted plants) should be done regularly.

10. Stages of Agriculture

- | | | |
|--|--|--|
| 1.  | 2.  | 3.  |
| The field is ploughed. | Manure is added to the soil. | After this, seeds are sown. |
| 4.  | 5.  | 6.  |
| The field is supplied with water. This is called irrigation. | To protect the crops, they are sprayed with pesticides. | The crops are then cut and gathered. This is called harvesting. |

After the crop is harvested, the grains are stored in granaries.

Things To Do

Do it yourself



2

How Plants Survive

A. Fill in the blanks :

1. The trees and plants of the plains have many **branches** and numerous **leaves**.

2. **Mangrove** trees grow in marshy places or swamps.
3. **Lotus** and **water lily** are fixed plants.
4. The leaves of a sundew plant are covered with sticky **tentacles**.
5. **Plants** are the largest providers of textile fabric.

B. Tick (3) the correct option :

- | | | |
|---------------------|---------------|-------------|
| 1. b. Fir | 2. b. aquatic | 3. b. fixed |
| 4. a. pitcher plant | 5. b. leaves | |

C. Write 'T' for true and 'F' for false statements :

- | | | |
|------|------|------|
| 1. F | 2. F | 3. F |
| 4. T | 5. T | |

D. Answer the following questions :

1. Over millions of years, plants have slowly changed themselves to suit the place/surroundings in which they lived. These changes are called adaptations.
2. Trees of mountains do not shed all their leaves at the same time. A few leaves fall and new ones grow. So, they are always green. As such, these trees are called evergreen trees.
3. In mountains and hilly places like Ooty, Kashmir, Darjeeling and the Himalayan ranges including Himachal Pradesh, it is very cold during winters. There is snowfall in some areas. The trees that grow here have to survive the cold and snowfall. Instead of flowers they have cones and are called conifers. The cones have seeds in them.
Conifers have needle-like leaves which have a waxy coating and can survive the cold and snow.
4. The trees that have straight and tall trunks and needle-like leaves are called coniferous trees.
5. These plants are spongy and filled with air. This makes the plants very light and helps them float on water. Examples : Water hyacinth, Water lettuce (Pistia), Duckweed (Wolffia).
6. These plants have roots that fix the plant in the mud at the bottom of the pond. Their stems are hollow and have air spaces.
This helps the flowers and leaves to float on water. The broad and flat leaves spread over the surface of water to trap maximum sunlight. The leaves have stomata only on its upper side. The leaves have a waxy coating to repel water. Examples : Lotus, Water lily.

7. Some plants like mosses, ferns, and many orchids grow on other plants. This allows them to reach positions where they can have better access to sunlight. These plants are known as epiphytes.
8. Do yourself
9. There are some places that have clayey soil and plenty of water. But, since, water cannot drain away, it collects on the ground. Mangrove trees grow in such marshy places or swamps. In such areas, roots of the plants grow above the ground so as to breathe. This is because they are not able to breathe under the soil. Such roots are called aerial or breathing roots.

10. **Food :** Plants are the main source of food for humans. The food is in the form of vegetables, fruits, grains, cereals, leaves, seeds, mushrooms, etc.

They provide the complete food comprising of all the essential nutrients, namely, carbohydrates, fats, proteins, vitamins and minerals.

Medicines : Plants are a great source of medicines. For example, juice of tulsi leaves is used for cough and cold. Turmeric is used in cooking and also as an anti-inflammatory. Amla juice is good for the stomach. Aloe vera juice is good for the skin.

Source of Vitamins : Plants are the largest sources of essential vitamins to the body.

Clothing : Plants are the largest providers of textile fabric.

These materials are eco-friendly, compatible and less expensive. The plant materials like cotton, jute, etc., contribute to manufacturing of yarn and other clothing fibre.

Furniture and Shelter : Plants are an important source of furniture. Plants are also home to many animals.

Flowers : Flowers are used widely by humans. They are used for enhancing beauty, to convey feelings and also for their fragrance as in scents or perfumes.

Rubber and Plastic : We obtain rubber required for tyre, wiring, seats, etc., from plants.

Our body needs vitamins (essential nutrients for normal growth) since it cannot manufacture it on its own.

Biofuels : Some plants are also grown for the sake of biofuels.

The plant fuel is less toxic as it does not emit harmful gases and is also less expensive. The plant waste is also used to generate electricity.

11. Do yourself
12. Some plants like pitcher plant, sundew and venus flytrap are carnivorous. Their leaves are modified to trap insects. Therefore, they are known as insectivorous plants.
13. The leaves of cactus are like sharp spines. This prevents loss of water from the leaves.
14. Do yourself

Things To Do

Do it yourself

Unit II : Air, Water and Weather



3

Understanding Air

Exercise

A. Fill in the blanks :

- Ans.**
1. Air occupies **space** and exerts **pressure**.
 2. Air is a **mixture** of gases that are **useful** to man.
 3. Green plants take in **carbon dioxide** from the air and **water** from the soil to prepare their food in presence of **sunlight**.
 4. When green plants make food, **oxygen** is given out.
 5. Fertilizers rich in nitrogen are called **nitrogenous** fertilizers.

B. Tick (3) the correct option :

- Ans.**
- | | |
|-------------------|----------------------|
| 1. b. pollution | 2. a. carbon dioxide |
| 3. c. suffocation | |

C. Name the following :

- Ans.**
1. Fountain-pen, medicine dropper, syringes, straws.
 2. Oxygen, carbon dioxide, nitrogen and water vapour.
 3. Carbon monoxide and sulphur dioxide.
 4. Urea, ammonium sulphate and ammonium chloride.
 5. Smoke, dust and carbon monoxide.

D. Match the following :

- Ans.**
- | | | |
|--------------------|---|--|
| 1. Carbon dioxide | → | a. A poisonous gas |
| 2. Oxygen | → | b. The gas which increases the fertility of the soil |
| 3. Nitrogen | → | c. The gas essential for burning. |
| 4. Carbon monoxide | → | d. The gas useful for preparing food for plants. |

E. Answer the following questions :

- Ans.**
1. Oxygen is the active part of air (20%). It is essential for life. No life can exist on the Earth without oxygen. Oxygen is also essential for burning. Nitrogen is the main constituent of air (79%). It is an inactive gas. So it serves to dilute the highly active gas oxygen.
 2. When poisonous gases and harmful substances mix up with the atmospheric air to make it impure, it is called air pollution. The impure air is called polluted air. Air gets polluted by smoke, dust, oxides of nitrogen, sulphur dioxide, carbon monoxide and carbon dioxide. Air also gets polluted by the smoke emitted by running automobiles and chimneys of industries. The substances which pollute the air are called air pollutants.
 3. Fertilizer is synthetic substance that added to the soil in order to increase crop production. Common nitrogenous fertilizers are urea, ammonium sulphate, ammonium chloride and calcium ammonium nitrate. These fertilizers are used to grow more cereals, pulses, oil seeds, sugar cane and vegetables.
 4. When we go to high altitudes, the density of air decreases, and it becomes difficult to live there. Therefore, mountaineers take oxygen cylinders with them while climbing mountains.
 5. Take a medicine dropper. Dip its tip into liquid medicine or water in a small bottle. Press the rubber bulb. Air bubbles come out of it. The air pressure in the dropper becomes less than the outside air pressure on the surface of the liquid. Due to outside air pressure, the liquid rises into the dropper. Thus, a medicine dropper works on atmospheric pressure. It is useful for the purpose of giving medicine to a sick person.
 6. Air pressure is used in many ways. It is used to draw liquids in

fountain pen, medicine dropper, injection syringe, a drinking straw, fountain, siphon, common lift pump etc.

7. A common lift pump has two valves which open only upward and prevent water from going down.
- (a) When the piston is pulled up, the air pressure inside the barrel of the pump is reduced. The valve at the bottom opens. The water rushes up and occupies the space above the valve.
 - (b) When the piston is moved down, the valve at the bottom closes and the piston valve opens. Water rises up and fills the space in the barrel above the piston.
 - (c) When the piston is moved up, the piston valve closes and the water flows out through the opening at the top of the barrel.

Things To Do

Do it yourself

Unit-III : Human Body, Health and Hygiene



4

Bones and Muscles

Exercise

A. Fill in the blanks :

1. There are **206** bones in our body.
2. There are about **600** different muscles in our body.
3. The skull protects the **brain**.
4. A **joint** is a meeting place to two bones.
5. Muscles which work under the control of our will are called **voluntary**.

B. Tick (3) the correct option :

- | | |
|----------------|----------------------|
| 1. b. skeletal | 2. c. bone to muscle |
| 3. a. heart | 4. a. shoulders |

C. Match the following :

- | | |
|----------------------|-------------------------------|
| 1. Bones | → a. Long bones |
| 2. Backbone | → b. Muscles of arms and legs |
| 3. Legs and arms | → c. Spinal cord |
| 4. Hinge joint | → d. Skeleton |
| 5. Voluntary muscles | → e. Knees and elbows |

D. Write 'T' for true and 'F' for false statements :

1. T 2. F 3. F 4. F 5. T

E. Classify the following movements into voluntary and involuntary movements :

Voluntary movements : Running, speaking, chewing the food in the mouth, laughing, solving examples in a notebook.

Involuntary movements : Breathing fast, churning of the food in the stomach, removing the hand quickly after touching a hot plate, flow of blood from the heart to the lungs.

F. Define

1. **Joint :** A joint is formed where two or more bones meet. Joints are of two types—movable or immovable.
2. **Involuntary muscle :** The muscles whose actions are not under the control of our will are called involuntary muscles.
3. **Cardiac muscle :** The muscles of the heart are called cardiac muscles. They have cells with strips on them and are branched. These muscles are also not under the control of our will.
4. **Skeleton :** Skeleton general framework of bones that supports our body. With the help of this framework, one can stand erect and move about.
5. **Tendons :** Tendons are strong strips of tissue that joins muscle to bone.

G. Answer the following questions :

1. **Bones perform the following functions :**

- (i) They give definite shape to the body.
- (ii) They provide surface for the attachment of muscles.
- (iii) They protect the delicate organs like the brain, the spinal cord, the heart and the lungs.

2. The muscular system helps the body in movement. Some muscles are attached to the bones. These muscles pull the bones and help in movement. The leg muscles help to walk and jump. The arm muscles help to lift things. The face muscles help to smile, blink and wink. Muscles which are not attached to the bones do things like pushing food into the alimentary canal, pumping the blood etc.

3. The four types of movable joints are as follows :

- (i) **The Ball and Socket Joints :** These are found in shoulders and hips. We are able to swing our arms like a wheel because the head of the upper arm bone is like a ball fitted into a cavity of the shoulder. Swinging, rotating,

spinning and bowling are the possible movements of this joint.

- (ii) **The Hinge Joints** : The joints in knees, elbows and fingers which move like a hinge are called hinge joints. These joints allow movement only in our plane.
 - (iii) **The Pivot Joint** : It is found between the skull and first two bones of the backbone (vertebrae) which facilitates the rotatory movement. We can turn our head from one side to the other and move our head up and down due to pivot joint.
 - (iv) **The Gliding Joints** : The bones of backbone, ankle and wrist which allow gliding movements are called gliding joints. They allow only a slight movement. We can able to play, dance, twist, turn and handle things due to gliding or sliding movements of the bones of ankle and wrist.
- 4. Heart and lungs.
 - 5. (i) **Voluntary muscles** : The muscles whose actions are under the control of our will are called voluntary muscles. Their cells have bands or strips on them, so they are also called striped muscles. The muscles of hands and legs are voluntary muscles.
 - (ii) **Involuntary muscles** : The muscles whose actions are not under the control of our will are called involuntary muscles. The cells of these involuntary muscles are smooth or unstriped. These are not attached to the bones. They work continuously.

Things To Do

Do it yourself



5

The Nervous System

Exercise

A. Fill in the blanks :

- 1. The nervous system consists of **brain, spinal cord** and **nerves**.
- 2. The liquid that surrounds the brain protects it from **absorbing** and the **mechanical shocks**.
- 3. At the bottom of the brain is the **spinal cord**.
- 4. **Reflex actions** are the various forces that act on the body.

5. The **reflex action** of the spinal cord is the automatic reaction.

B. Tick (3) the correct option :

1. b. Kidneys 2. a. Motor nerves
3. c. receptors

C. Write 'T' for true and 'F' for false statements :

1. F 2. T 3. T 4. T 5. F

D. Match the following :

- | | | |
|----------------|---|------------------------|
| 1. Cerebrum | → | a. Voluntary actions |
| 2. Cerebellum | → | b. Involuntary actions |
| 3. Medulla | → | c. Balance |
| 4. Spinal cord | → | d. Memory |
| 5. Brain | → | e. Breathing |

E. Define the following :

1. **Brain :** The brain is the main control and coordination center of the human body. It coordinates all the actions and reactions of the body by receiving different messages through the nerves, recognising them and sending messages through the nerves to different parts of the body to respond as required.
2. **Nervous System :** The system that brings out the coordination between the organs of the body is the nervous system. The nervous system is a two way communication between the brain and the organs of the body. This system is also called the Master system.
3. **Cerebrum :** The cerebrum is the largest part of the brain. It is also called big brain. It weighs about 995 grams. It occupies the upper part of the brain.
The cerebrum helps us to learn, think, remember things, speak and feel. It also helps us to hear, smell, taste, know about the roughness or smoothness.
4. **Cerebellum :** The cerebellum or the small brain is situated at the back of the head. It control and coordinates the movement of the voluntary muscles. It helps to balanced the body while walking, running, cycling and even helps to keep us to upright position.
5. **Medulla :** The medulla oblongata is below the cerebellum. This is the smallest part. It is broad anteriorly and gradually narrows posteriorly. It is roughly triangular. Medulla oblongata is the link between the brain and the spinal cord.
The medulla oblongata controls the heart beat, the breathing

movements and the work of many internal organs. It serves as a conductor of impulses between the brain and the spinal cord.

6. **The Spinal Cord :** The spinal cord is the continuation of the medulla oblongata. It is about one cm in diameter. It passes downwards into the trunk through the neck. In the trunk, spinal cord is enclosed by vertebral column. A canal called spinal canal, travels throughout the length of spinal cord.

F. Answer the following questions :

1. The brain is externally covered with three membranes called meninges. There is a fluid called as cerebrospinal fluid between the middle and inner meninges. This fluid protects the brain by absorbing the mechanical shocks. Brain contains cavities called ventricles.
The brain has 3 major parts. They are : 1. Cerebrum 2. Cerebellum and 3. Medulla oblongata.
2. The cerebrum helps us to learn, think, remember things, speak and feel. It also helps us to hear, smell, taste, know about the roughness or smoothness.
3. **Cerebellum :** It coordinates the working of the muscles. It helps to maintain our balance. It sends all the impulses that come from the organs of the back part of the body to the cerebrum.
4. The medulla oblongata controls the heart beat, the breathing movements and the work of many internal organs. It serves as a conductor of impulses between the brain and the spinal cord.
5. When intense light falls on the eye, immediately the eyelids close to protect the eye. When we touch any hot substance, our hand is immediately withdrawn from it. When we heard somebody shouting for help, we immediately run to him. The closing of the eye, the withdrawal of the hand from a hot object and running to the person in distress are not planned actions or responses. They are sudden responses and do not involve the activity of the brain. They are involuntary in nature. All such sudden and involuntary actions are called reflex actions. They help the body to protect itself from forces that cause damage or injury.
6. Our walking, talking, writing and other activities are possible because of the coordination of a number of systems in the body. The system that brings out the coordination between the organs of the body is the nervous system. The nervous system

is a two way communication between the brain and the organs of the body. This system is called the Master system.

7. The Spinal Cord has two main functions. One is communication between the brain and all the parts of the body. The other is reflex action.

Things To Do

Do it yourself.



6

Deficiency Diseases

Exercise

A. Fill in the blanks :

1. **Nutritious food** is the need of all human beings.
2. Many children in slums can be seen having **protein deficiency**.
3. **Iron** is needed for blood formation.
4. We must eat enough **green vegetables** for good health.
5. A **balanced diet** is necessary for every member of the family.

B. Tick (3) the correct option :

1. b. Kidneys
2. a. Motor nerves

C. Name the following :

1. Carbohydrate.
2. Vitamin D.
3. Night blindness.
4. Anaemia.
5. Deficiency of vitamin B.

D. Match the following :

- | | | |
|----------------------|---|--------------|
| 1. Night blindness | → | a. Vitamin B |
| 2. Bleeding of gums | → | b. Vitamin D |
| 3. Bending of bones | → | c. Vitamin A |
| 4. Roughness of skin | → | d. Vitamin C |
| 5. Goitre | → | f. Iodine. |

E. Explain the following terms :

1. **The balanced diet** : A diet which contains all the nutrients of the food in proper proportions necessary growth and normal health is known as balanced diet.
2. **Malnutrition** : We should eat a balanced diet daily to keep active and to maintain good health. The diet which is not balanced causes malnutrition. It is a condition of bad health that arises when we don't get enough food or water.
3. **Night blindness** : Night blindness is caused due to the

deficiency of vitamin A. The affected person cannot see properly in dim light. Should take a diet rich in green leafy vegetables, mango, milk, sweet potato, butter, fish and eggs.

4. **Anaemia** : A person with anaemia looks pale and bloodless. Anaemic person feels tired very soon. He/she does not have appetite. Anaemic condition develops due to the deficiency of iron in the food.

F. Answer the following questions :

1. Nutritious food is the need of all human beings. We need to eat a balanced diet for our proper growth and to keep healthy. Our daily food should contain the various nutrients like carbohydrates, fats, proteins, minerals, vitamins and water in proper proportions.

If there is shortage of nutrients in our food, we lose our resistance against diseases. Consequently we are attacked by many diseases.

2. Carbohydrates, fats, proteins, minerals, vitamins and water are the various constituents of food.
3. The diseases caused due to the shortage of nutrients in the food are called deficiency diseases. Protein deficiency, carbohydrate deficiency, vitamin deficiency and mineral deficiency are deficiency diseases.

4. **Protein Deficiency**

Lack of proteins in the normal meals of children results in anaemia, diarrhoea and enlarged liver. The children have potted bellies and very thin legs and hands due to the deficiency of proteins. This disease is more common in the children having age group between six months and three years.

Many children in slums can be seen having protein deficiency. Such children should be given soft boiled additional food like mashed vegetables and fruits along with the milk of their mother.

5. Common diseases caused due to deficiency of vitamins are given in the following table—

Deficient Vitamin	Deficiency diseases with symptoms	Preventive measure
A	Night blindness.	Inclusion of green leafy vegetables, carrots, papayas.
B	Redness of the tongue,	Inclusion of pulses, green leafy

	roughness of skin.	vegetables, milk in the diet.
C	Bleeding of gums, shaky teeth.	Inclusion of amla, lemons, oranges, sprouted pulses in the diet.
D	Bending of the bones of the legs and of the backbone.	Exposure to sunlight early in the mornings.

Things To Do

Do it yourself



7

Micro-organisms and Spread of Diseases

Exercise

A. Fill in the blanks :

1. Diseases that spread by contact are called **communicable** diseases.
2. **Bacteria** are single-celled plants without chlorophyll.
3. Viruses cause **flu** and **measles**.
4. Skin diseases like **ringworm** are caused by **fungi**.
5. Cholera and dysentery are caused through **contaminated food** and **water**.
6. Diarrhoea can cause the loss of **water** and **salts**.
7. There are no vaccines for **flu** and **malaria** yet.
8. Our government has eradicated **smallpox**.
9. BCG is taken against **tuberculosis**.
10. Isolation of **patient** avoids the spread of **contagious disease**.

B. Tick (3) the correct option :

1. b. germs
2. a. typhoid
3. c. tuberculosis

C. Write 'T' for true and 'F' for false statements :

1. T
2. F
3. T
4. F
5. F

D. Name two diseases of each type :

- | | | | |
|--------------|-----------------|------------|-----------|
| 1. Pneumonia | Tuberculosis | 2. Flu | Measles |
| 3. Ringworm | Sores on tongue | 4. Malaria | Dysentery |
| 5. Cholera | Typhoid | 6. Flu | Cold |
| 7. Malaria | Dengue fever | | |

E. Match the following :

- | | | |
|--------------|---|----------------------------|
| 1. Cholera | → | a. Virus |
| 2. Measles | → | b. Fungus |
| 3. Dysentery | → | c. Bacteria |
| 4. Ringworm | → | d. Loss of water and salts |
| 5. Diarrhoea | → | e. Protozoa |

F. Encircle the correct answer from those given in the brackets :

1. Diphtheria is caused by (bacteria, virus, fungus).
2. Malaria spreads through (mosquitoes, flesh, lice).
3. Whooping cough spreads through (water, food, air).
4. Typhoid spreads through (mosquitoes, flies, dog-bite).
5. Defecating near the source of drinking water helps to spread (chicken-pox, whooping cough, cholera).
6. Eating food exposed to flies may cause (tuberculosis, polio, diarrhoea).

G. Answer the following questions :

1. Most diseases are caused by very tiny organisms called germs. These micro-organisms or microbes are very small living bodies. Microbes are so small that one cannot see them with naked eye.
Contagious diseases are caused by four main kinds of germs namely bacteri, viruses, protozoa and fungi.
2. The diseases which spread from one person to another by contact are called contagious diseases. These diseases which are communicable by contact are also called communicable diseases or infectious diseases. Tuberculosis, pneumononia, cholera, diphthera, measles, flu, dysentery, malaria and skin diseases like ringworm are main contagious diseases.
3. Diseases of digestive system may also spread through the polluted water. Water gets polluted due to the following activities :
 - a. Washing of clothes and utensils in or near drinking water.
 - b. Bathing of human beings and animals near water source.
 - c. Improper disposal of sewage and industrial wastes.
 - d. Defective drainage.
4. Tuberculosis is spread through flies.
5. Insects such as mosquitoes, lice and bugs suck the blood of a person when they bite him/her. When they bite a sick person, they suck the blood having disease causing germs. These germs are further passed on to another person through biting.

In this way malaria, spreads from one person to another.

6. Flies play an important role in contaminating the food. Flies are the carriers of germs of tuberculosis which spread diseases. They sit on the rubbish heaps and pick up disease germs in their legs. Then they sit on our food and transfer the germs to the food. Eating of the contaminated food causes disease such as tuberculosis.
7. We can thus, prevent contagious diseases by taking certain precautions. The spreading of communicable diseases can be checked in the following ways :

a. Isolating the patient :

- (i) The patient suffering from contagious disease must be kept in a separate room.
- (ii) Only the person who looks after the patient should be allowed to go near and attend him/her.
- (iii) All articles used by the patient such as clothes, towel, comb and utensils should be kept separate. They should be disinfected properly. They should not be used by anybody else.

b. By keeping home and the environment clean :

Following steps can be taken to check the growth and multiplication of germs :

- (i) The house and its surroundings should always be kept neat and clean.
- (ii) Do not spit and pass stool anywhere and everywhere. Wash your hands with soap or dry ash after defecation.
- (iii) Washrooms and toilets should always be kept clean and washed with enough water and phenyl or dettol.

c. By preventive inoculation and vaccination :

Inoculation and vaccination increase the power to fight disease in the body. Resistance to disease increases in the body by preventive inoculation. Communicable diseases have been controlled to a great extent with the help of these preventive measures.

Whenever there is an epidemic of cholera, typhoid or plague, it is in the fitness of things to get inoculated against them. Inoculation protects us against these diseases. Vaccination against smallpox should also be taken as a preventive measure.

d. Government plans

The Government Health Department has the responsibility to fight against the infectious diseases. We should help it in this fight. Our country has undertaken a big programme of immunization. It is expected that all children will be immunized against childhood diseases. We should actively participate to help the government to carry out its plans to check the spread of contagious diseases successfully. We should take vaccination and other precautions against diseases.

Things To Do

Do it Yourself

Unit-IV : Animal Life

8

Adaptations in Animals

Exercise

A. Fill in the blanks :

1. Fishes breathe through **gills**.
2. Monkey is an **arboreal** animal.
3. Camels live in **desert**.
4. The camel is called the **ship** of the desert.
5. Frogs breathe through the **skin** in water.
6. The insects which move along the surface of pond water are called water **skaters**.
7. The **tail feathers** help the bird to change the direction.
8. The chameleon is a **reptile** similar to lizard.

B. Choose the correct answer :

1. a. Fish
2. b. webbed feet
3. c. Camel
4. c. Monkey

C. Name two animals in the following groups :

- | | | | |
|------------------|------|-----------|----------|
| 1. Fish | Frog | 2. Camel | Scorpion |
| 3. Mountain goat | Yak | 4. Monkey | Squirrel |
| 5. Chameleon | Wasp | | |

D. Write 'T' for true and 'F' for false statements:

1. T
2. T
3. F
4. T
5. F
6. T

E. Rewrite the underlined words correctly :

1. Animals living in water are called aquatic animals.
2. The fish has water proof scales on its entire body to protect it.

- Camels are most commonly found in Rajasthan in our country.
- Monkeys and squirrels are called arboreal animals.
- Houseflies have spongy mouth-parts.

F. Explain what are the following :

- Arboreal animals :** These are those animals which live on trees. Examples : Monkeys and squirrels.
- Terrestrial animals :** Animals which live on land are called terrestrial animals. Such as cow, horses, etc.
- Aerial animals :** Birds fly to move from one place to another. They adapt to aerial mode of life due to their body structure. They are known as aerial animal.
- Aquatic animals :** Animals living in water are called aquatic animals.
- Protective Colouration :** The chameleon, a reptile similar to lizard is known for changing its colour to resemble to that of its surrounding. This is known as protective colouration.
- Protective resemblance :** Some animals like turtles and most molluscus have protective body in the form of shells. Many animals like scorpions, wasps, bees have poison glands and stings. Some snakes are highly poisonous. This is known as protective resemblance.

G. Match the following :

- | | | |
|---------------|---|----------------------------|
| 1. Frog | → | a. Thick fold of skin. |
| 2. Fish | → | b. Thick fur on the body. |
| 3. Chameleon | → | c. The ship of the desert. |
| 4. Camel | → | d. Webbed feet. |
| 5. Polar bear | → | e. Gills for breathing. |
| 6. Bat | → | f. Protective colouration. |

H. Answer the following question :

- A fish has a boat like body. It is broad and flat in the middle and narrow at both ends. It is also called streamlined body. This shape of the body helps the fish to move smoothly and quickly in water.
The fish has water proof scales on its entire body to protect it. Due to these scales, water does not stick on to the surface of the body.
A fish has fins at the side and posteriorly which help it in swimming. The tail fin helps the fish in maintaining balance and to change the direction in water.

Fishes have special respiratory organs known as gills which help them in oxygen uptake. A fish opens and closes its mouth frequently. When a fish opens its mouth, water enters it and flows over the gills. The oxygen dissolved in water is absorbed by the gills.

2. A camel shows the following adaptations :

- It has a very thick skin to bear the heat of the desert.
- It has one or two humps in its body. The hump is a storehouse of fat. The camel uses the fat of its hump as food in emergency.
- It has thick skin which prevents the loss of water through evaporation or perspiration.

It has padded feet which act as cushions which help the camel to walk comfortably on the sand. The padded feet do not allow it to sink in the sand.

It has special pouches to store water in them. So a camel can live without water for many days.

It excretes little urine to maintain water balance.

It can travel long distances without water and food in hot and dry deserts.

3. A camel has padded feet which act as cushions which help it to walk comfortably on the sand. The padded feet do not allow it to sink in the sand.
4. The tail fin helps the fish in maintaining balance and to change the direction in water.
5. Animals like yak, polar bear, musk ox, arctic hair sheep and mountain goat live in cold regions. They have skin with thick woolly hair to bear cold. These hairs keep the body warm. They also have hard hoofs or claws to walk on snow. The animals of mountain regions have skin with woolly hair or fur to withstand cold.
6. Birds fly to move from one place to another. They adapt to aerial mode of life due to their body structure. The special features of birds to suit to fly in the air are as under :
- Birds have boat like body. It helps them to float easily in the air
 - They have very light and hollow bones. Therefore, birds have light bodies
 - They have powerful muscles attached to their wings. The wings are also light and move up and down easily.
 - They have light feathers on their wings. The feathers help

birds to fly. The tail feathers help birds to change their direction while flying.

Things to Do

Do it yourself

Unit : V-Rocks, Soils and Minerals



9

Kinds and Formation of Rocks

Exercise

A. Fill in the blanks :

- Ans. 1. **Rocks** make up large portion of the Earth's crust.
2. **Sandstone** is an example of sedimentary rock.
3. The hot molten rock material is called **magma**.
4. When lava cools down **rock** is formed.
5. **Marble** is an example of metamorphic rock.
6. **Slate** easily splits up into slabs.

B. Tick (3) the correct option :

- Ans. 1. a. Igneous 2. c. Slate 3. c. both a. and b. 4. b. Marble

C. Write 'T' for true and 'F' for false statements :

- Ans. 1. T 2. F 2. F 3. F 4. T 5. T

D. Give three examples of each of the following :

- Ans. 1. Granite Quartz Pumice
2. Sandstone Shale Limestone
3. Slate Marble Coal
4. Quartz Feldspar Mica
5. Diamonds Rabies emeralds

E. Match the following :

- Ans. 1. Magma → a. Many buildings in Jaipur
2. Coal → b. The Taj Mahal at Agra
3. Diamond → c. Molten rock
4. Marble → d. Fuel
5. Sandstone → e. Jewellery

F. Write the names of the rocks under the kind to which they belong :

- Ans. 1. **Sedimentary** : Granite, Limestone
2. **Igneous** : Pumice, Sandstone, Obsidian
3. **Metamorphic** : Slate, Marble, Coal, Gneiss

G. Answer the following questions :

Ans. 1. Rocks are the large masses of material that makes up the Earth's crust.

Rocks are of three kinds : igneous, sedimentary and metamorphic.

2. Sedimentary rocks are formed by the deposition of sediments on the beds of seas and oceans. Small pieces of rocks, pebbles, gravel, sand, mud etc., are carried away by water in rivers. When the speed of running water decreases, the substances brought by water are deposited. There will be many layers of such deposits. More and more substances continue to pile up on the top. In the course of many number of years on account of pressure of upper layers the lower layers become hard and form rocks. These are called sedimentary rocks.
3. Molten rock material comes out from the deepest part of the Earth, where it is very hot. This hot molten rock material is called magma. This comes out to the Earth's surface through cracks in the surface. When this material cools down rocks are formed. These are called igneous rocks. Minerals like mica, quartz, copper, tin, aluminium, iron and magnesium are found in these rocks. One of the most abundant of igneous rocks is granite. Obsidian is another igneous rock which breaks like glass.
4. Gold, platinum, silver, iron, nickel, copper, zinc, tin, mercury, aluminium, etc. are contained in the form of ores in rocks.
5. Some rocks contain gems like diamonds, rubies and emeralds which are used in making ornaments.
6. Nitrogen, phosphorus, potassium, calcium, magnesium, sulphur, copper, iron, manganese, zinc and boron are some minerals that used for making fertilizers.
7. Millions of years ago dense forests and swamps got buried in the Earth. Many layers of sedimentary rocks were formed on them. Due to great pressure and high temperature the dead vegetable matter got changed into peat, lignite and coal. We dig deep to get coal. This is called a coal mine.
8. Petroleum is mineral oil found in beneath the sedimentary rocks. The intense heat and the pressure inside the Earth melted and squeezed out the oil in the animals and plants that were under buried the Earth millions of years ago. That is how

Things To Do

Unit : VI-Our Universe



10

Moving Around The Earth

Exercise

Ans.

1. The first satellite sent up by Russian scientists is called **Sputnik I**.
2. The first Russian astronaut to go round the Earth in space is **Colonel Yuri Gagarin**.
3. Rakesh Sharma travelled into space by the spacecraft called **Soyuz T-11**.
4. **Lt. Col. Valentina Tareshkova** became the first woman astronaut.
5. The name of India's first satellite is **Aryabhata**.

Ans. 1. b. Sun 2. b. Neil Armstrong.

Ans. 1.F 2.T 3.F 4.T 5.T.

Ans.

1.	Sputnik	→	a. India
2.	Vostok	→	b. Russia
3.	Apollo 11	→	c. A space shuttle
4.	PSLV-D2	→	d. Yuri Gagarin
5.	Columbia	→	e. Neil Armstrong and Edwin Aldrin

Ans.

1. On 21 July 1969, Neil Armstrong and Edwin Aldrin, two Americans travelled into space by Apollo 11 spacecraft and reached the moon ! Neil Armstrong came out of the craft and landed on the surface of the moon. He was the first man to set his feet on the moon.
2. **Artificial Satellites** : Artificial satellites are man-made objects that orbit the earth. They are launched into space with

the help of rockets. Once the satellite has been launched, the job of a rocket is over. Such rockets are used only once.

Space probes : A space probe is a robotic spacecraft that does not orbit the Earth, but, instead, explores further into outer space. A space probe may approach the Moon, travel through interplanetary space, flyby, orbit, or land on other planetary bodies or enter interstellar space.

3. **Uses of Space travel :** Space travel has always fascinated humans. With advances in science and technology, the dream of humans to go into space was realised. Outer space is an extremely hostile place. During the training, the person learns about space, how to conduct experiments in space and how to live in weightlessness. A person who is trained to travel in a spacecraft is called as astronaut. To protect themselves from the harsh conditions, astronauts have to wear special suits called spacesuits. These spacesuits create an earth-like atmosphere for them. The spacesuits also enable them to float. Astronauts go into space using space shuttles.

Astronauts conduct research, collect information and repair satellites while they are in space. After completing the mission, astronauts return to earth in the space shuttles. The space shuttles can be used repeatedly.

Things To Do

Did it yourself



11

Light, Shadow and Eclipses

Exercise

A. Fill in the blanks :

- Ans.**
1. If the source of light moves towards the object its shadow becomes **bigger**.
 2. The shape of the shadow depends on the **direction** from which the light rays fall on the object.
 3. If the Earth is between the Sun and the moon a **lunar** eclipse occurs.
 4. During the solar eclipse the shadow of the **moon** falls on the Earth.

5. The solar eclipse is seen during **new moon** while a lunar eclipse is seen at **full moon**.

B. Tick (3) the correct option :

Ans. 1. c. photography 2. a. Wood 3. c. solar eclipse.

C. From the list given against each item, cross the odd one out :

- Ans.** 1. Source of light, screen opaque object, ~~transparent~~ object.
(Formation of a shadow)
2. Size of the object, size of the screen, distance between the object and the source of light, ~~distance between the screen and the~~ (Size of the shadow)
3. Full moon light, the Earth is between the ~~Sun~~ and the moon, ~~new moon~~ day, the centres of the Sun, the Earth and the moon are approximately in a straight line (Lunar eclipse)
4. ~~New moon~~ day, full ~~moon~~ night, the moon is between the Sun and the Earth the centre of the Sun, the moon and the Earth are approximately in a ~~straight~~ line. (Solar eclipse)

D. Which of the following substances cast a shadow ?

- Ans.** 1. water 2. glass 3. wood 3
4. stone 3 5. air 6. cardboard 3

E. Distinguish between :

- Ans.** 1. **Solar eclipse :** On that new moon day on which the Sun, the moon and the Earth come approximately in a straight line, a certain portion of the Sun cannot be seen from the Earth. This is called a solar eclipse. During a solar eclipse, the moon casts a shadow on the Earth.

Lunar eclipse : A lunar eclipse occurs on that full moon day on which the centres of the Sun, the Earth and the moon come approximately in a straight line and the shadow of the Earth falls on the moon.

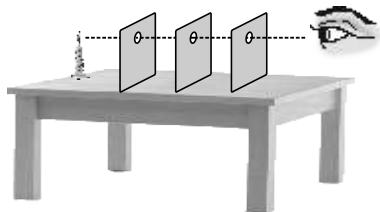
2. **Transparent object :** Substances which allow light rays to pass through them are called transparent objects.

Opaque object : Objects which do not allow light rays to pass through them are called opaque objects.

F. Answer the following questions :

- Ans.** 1. When light falls on an opaque object, it casts a shadow on the side opposite to the source of light.
2. The size of the shadow depends on the distances between the source of light, the object and the screen.

3. It is that an opaque object, a light source and a screen are needed for the formation of a shadow.
4. The Sun's rays travel everywhere in space. They fall at planets. You know that the planets are opaque bodies which do not allow light to pass through them. The planets like the Earth and the moon are opaque bodies and so they cast their shadows in space. These shadows lead to the formation of Eclipses.
5. The Solar eclipse occurs on a new moon day.
The lunar eclipse occurs on a full moon day.
6. We see solar eclipse during day time.
7. We see lunar eclipse at night time.
8. The uses of light are as follow :
 - (i) The main use of light is that it enables us to see the world around us.
 - (ii) Plants make use of sunlight for preparing starch which serves as a good food for us.
 - (iii) Flash light is used in photography.
 - (iv) Sunlight is also used as an antiseptic.
 - (v) Coloured light is used as traffic signals.
 - (vi) Light is also used to drill holes in hard materials and also for welding.
9. Glass, water, mica and air are transparent objects. Ground glass, oiled paper, wax, etc. are some examples of translucent objects. Wood, stone, wall, metals etc., are opaque substances.
10. Light travels in a straight line :
It can be proved by the following experiment.
Take three equal rectangular cardboard screens A, B and C. Make a hole in each of them at the centre. Arrange them one behind the other leaving equal space with the holes in a straight line. Keep a burning candle behind the last screen C. Look through the hole of the first screen A. You are able to see the candle flame. If any one of the screens is moved a little you cannot see the flame.
This shows that the light passes through the three holes in a straight line.



Things To Do

Do it Yourself



Exercise

A. Fill in the blanks :

- Ans.** 1. A **disaster** is a sudden event that cause a lot of damage.
 2. Sometimes Earthquake is followed by **tsunamis**.
 3. Earthquake can cause many natural **calamities**.
 4. The upper layer of the Earth's crust is made up of **plates**.
 5. In the year **2001** India had major Earthquake in Gujarat.

B. Tick (3) the correct option :

- Ans.** 1. c. light 2. a. high tidal waves
 3. c. Hawaii islands 4. b. crater.

C. Write 'T' for true and 'F' for false statements :

- Ans.** 1. T 2. T 3. F 4. T 5. F.

D. Choose the correct option :

- Ans.** 1. An Earthquake is a sudden shaking of the ground/sky.
 2. The outermost layer of our Earth is called the crust/core.
 3. Mount Etna is an active/extinct volcano.
 4. A hurricane is called a cyclone/typhoon in Japan.
 5. Earthquakes can be detected with an instrument called seismograph/Richter scale.

E. Define the following terms :

- Ans.** 1. **Ocean waves** : An ocean wave is a disturbance in the ocean that transmits energy from one place to another. Ocean waves are usually generated by wind on the oceans surface. They may also be caused by underwater earthquakes, which can trigger tsunamis.
 2. **Active volcanoes** : Active Volcanoes are those that have erupted in the last 10,000 years and can erupt again. Mount Etna of Italy is an active volcano.
 3. **Dormant volcanoes** : Dormant Volcanoes are those that are in a state of sleep. This means that it had erupted in the past. It can erupt again but at the moment it is asleep. Mount Kea is located in Hawain Islands USA and is a dormant volcano.
 4. **Epicentre** : The point on the Earth's surface directly above the place where the Earthquake starts is called the epicentre.

5. **Hypocentre** : The location under the Earth where an Earthquake starts is called the hypocentre.
6. **Magma** : When lava is below the Earth's surface, it is called magma.

F. Match the following :

- Ans.**
- | | | |
|----------------------|---|------------------------------------|
| 1. Earthquake | → | a. Measuring unit of Earthquake |
| 2. Focus | → | b. Disturbance to Earth's interior |
| 3. Richter scale | → | c. Tsunami |
| 4. Tectonic movement | → | d. Vibration |
| 5. Ocean waves | → | e. Earth's movement |

G. Answer the following questions :

- Ans.**
1. An earthquake is a sudden shaking or tremor of the earth caused by the movements or vibrations inside the earth.
 2. In a moderate Earthquake we can experience the rattling of utensils, creaking of doors and breaking of windowpanes. In a strong Earthquake, the walls collapse, power lines break, bridges get destroyed, the ground cracks and deep gaps appear on the ground along with loss of life.
 3. A volcano is an opening on the Earth's surface which allows hot molten rock ash and gases to escape from below the surface. These burst out of the crust surface. These burst out of the crust through a vertical tunnel called a vent. This hot molten rock is called lava. The lava spreads over the land sometimes. The coming out of hot molten lava is called a volcanic eruption.
 4. Wherever there is a shortage of rain over a long period of time, there is a drought. Drought affects plants, animals and people. It is a serious problem for farmers. Drought results from changes in the Earth's atmosphere.
 5. A spark of lightning or heat generated from rotting plants or animals or the heat from the lava of a volcano can start a forestfire.
 6. Heavy and continuous rainfall makes the rivers overflow which causes floods in nearby areas.
Floods can also be caused by the collapse of a dam which makes the excess water flow into adjoining areas.
Melting of snow in the summer causes river to overflow.

H. Complete the following web chart:

Do yourself

I. Complete the given crossword puzzle with the help of clues:

Do yourself

Things To Do

Do it yourself



Exercise

A. Fill in the blanks :

- Ans.** 1. **Environment** is the surrounding in which we live.
 2. The harmful changes brought in by human activities are called **pollution**.
 3. Humans activities and vehicles are the main cause of **air** pollution.
 4. When water sources get contaminated **water** pollution is caused.
 5. **Land** pollution makes the soil infertile.

B. Tick (3) the correct option :

- Ans.** 1. c. gases 2. c. stratosphere 3. a. Oxygen.

C. Match the following :

- Ans.** 1. Polluted water → a. Infertile soil
 2. Polluted air → b. Aeroplane and vehicles
 3. Polluted land → c. Human activities
 4. Noise pollution → d. Breathing problem
 5. Major cause for pollution → e. Jaundice

D. Write T for true and F for false statements :

- Ans.** 1. F 2. T 3. T 4. T 5. T.

E. Choose the correct option :

- Ans.** 1. The surroundings in which we live is our environment/habitat.
 2. Methane/Carbon Dioxide is a natural gas.
 3. Ozone is found in troposphere/stratosphere.
 4. CFC is a chemical widely used in refrigerators/scooters.

F. Answer the following questions :

- Ans.** 1. The surroundings in which we live is our environment. It consists of living and non-living things like air, water, land, plants and animals. These interact with each other. Human beings have always been dependent on their environment. This dependence has increased with time. This is because, as the population increases, the need for food, water and housing, too, increases. In order to meet these ever increasing demands, people have started putting more pressure on the environment. Air water and soil are getting polluted; forests are being cut at an alarming rate and many species of animals are getting extinct everyday. All these activities harm the environment.
2. There are four main kinds of pollution air, water, noise and soil.

Air Pollution : Vehicles and factories release smoke into the air. This smoke contains gases that are very harmful. In some houses, wood or coal is used as fuel for cooking. This gives out smoke that again harms the environment. Air also gets polluted when volcanoes erupt and release smoke into the air. The burning of firecrackers during Diwali is another cause of air pollution.

Water Pollution : Water pollution is caused when household and industrial waste is released into water sources. Some people bathe and wash clothes in rivers. This also pollutes the water. Oil spill from ships is another cause of water pollution.

Noise Pollution : When excessive noise is produced, it causes noise pollution. Some sources of noise pollution are machines in factories, vehicles, loudspeakers and entertainment gadgets, such as, television and radio.

Land Pollution : When harmful substances get added to the soil, they pollute the soil. Pesticides, fertilisers, acid rain and solid wastes, such as polythene bags, bottles, cans, etc. cause land pollution.

3. Air pollution causes many diseases. In highly polluted areas, people suffer from breathing disorders. The growth of plants also slows down. Air pollution also causes acid rain, depletion of the ozone layer and global warming.
4. When harmful substances get added to the soil, they pollute the soil. It is called land pollution. Pesticides, fertilisers, acid rain and solid wastes, such as polythene bags, bottles, cans, etc. cause land pollution.
5. When excessive noise is produced, it causes noise pollution. Some sources of noise pollution are machines in factories, vehicles, loudspeakers and entertainment gadgets, such as, television and radio.
People exposed to excessive noise, complain of headache. In some cases, sustained exposure to loud noises can also result in deafness.
6. In addition to landfills, incineration and compost making, there are different waste management options that depend on judicious use of waste. These include methods such as reduce, reuse and recycle.

Reduce : In this method, efforts are made to teach the community to generate less waste by using efficient house-keeping methods, changing wasteful habits and adopting lifestyles with a positive attitude towards conservation.

Reuse : This is a stage between avoiding waste and recycling

already used material. The best way to support reuse of materials is to give them to those who can use them.

Recycle : This involves conversion of used and discarded materials, into new, useful products. It reduces the amount of waste thereby making the environment cleaner.

Things To Do

Do it Yourself

Unit : VIII-Safety and First-Aid



14

First-aid for Fire Accident, Fractures and Snake Bite

Exercise

A. Fill in the blanks :

- Ans.** 1. Accidents occur due to **carelessness** or when we are in a **hurry**.
2. Burns are caused due to **steam** and **boiling water**.
3. Due to fracture, a person has a lot of **pain** and is unable to **move**.
4. Fires can be put out by lowering **heat** and stopping the supply of **air**.
5. Do not allow a person bitten by a **cobra** snake to sleep and do not give him **alcohol**.

B. Tick (3) the correct option :

- Ans.** 1. b. a sling 2. a. dial 101 3. a. simple fracture.

C. Write 'T' for true and 'F' for false statements :

- Ans.** 1. T 2. T 3. F 4. T 5. T.

D. Match the following :

- Ans.** 1. Accident → a. Splint
2. Fire accident → b. Poisonous
3. Fracture → c. Minor burn
4. Cobra bite → d. Nylon clothes
5. Burnol → e. Carelessness

E. Define the following :

- Ans.** 1. **First aid :** The immediate help and care that we provide before the arrival of a doctor to a person who has met an accident is called first aid.
2. **Fracture :** Breakage of bone is called fracture. A fracture may be simple or compound.

3. **Burns** : An injury caused by exposure to heat or chemicals, radiation or fire.

F. Answer the following questions :

- Ans.**
1. When an accident occurs to a person, a doctor may not be readily available. A hospital may be far away. So to save the life of the injured person immediate aid is given before the doctor arrives. This help rendered is called first-aid.
 2. A cut or scratch can result in a minor wound. A wound is an opening in the skin through which germs can easily enter the body. Minor wounds can be treated at home by following these guidelines.
 - (i) Wash the wound thoroughly with mild soap and water. Dry it using cotton wool or a gauze.
 - (ii) Apply an antiseptic lotion. Put a clean bandage such that it does not stick to the wound.
 - (iii) If the wound is bleeding, place a gauze pad tightly on it to stop the bleeding.
 3. An injury caused by exposure to heat or chemicals, radiation or fire. Burns are caused by heat of the open flames, steam, boiling water or hot pans or due to falling of chemicals like acids on the body.
 4. Breaking of bone is called fracture. The breakage of bone may occur due to fall of a person anywhere. While playing children may fall and their bones may break. Old people may slip and fall and have fractures. People may have serious fractures in accidents. Fractures are of two types. These are
 - (i) Simple fracture
 - (ii) Compound fracture.In a simple fracture, the bones break and stay in the same place. In a compound fracture, bones break and pierce the flesh causing severe wounds.
 5. Symptoms of snake bite :
 - (i) Bleeding at the bitten points.
 - (ii) Two small bleeding points about $2\frac{1}{2}$ centimetres apart.
 - (iii) Severe pain at the bitten spot and vomiting.
 - (iv) Frothing in the mouth and unconsciousness.
 - (v) Dilation of pupils.

Things To Do

Do it Yourself



Simple Machines

Exercise

A. Fill in the blanks :

- Ans.** 1. For lifting a water tank the **pulley** is used.
 2. Boring pump is an example of **first** order of levers.
 3. The direction in which wheel and axle and a rope move is **upwards**.
 4. **Inclined plane** is used to lift heavy oil barrels in a truck.
 5. Effort and load are **downwards** in a pulley.

B. Tick (3) the correct option :

- Ans.** 1. c. both 'a' and 'b' 2. c. wedge
 3. c. inclined paper 4. a. cutting

C. Classify the following simple machines into lever, pulley, inclined plane, screw, wheel and wedge.

Ans. Lever : An iron-bar used to move a heavy stone, a plank of a seesaw, a nutcracker, forceps, crane, pincers, scissors.

Pulley : The wheel fixed on a well to draw water.

Inclined plane : The inclined plane used to raise heavy barrels in a track, winding roads on a hill.

Screw : Jack, nail.

Wheel : The roller used to prepare the cricket pitch.

Wedge : Knife, an axe.

D. Which machine is used for doing work in each of the following cases?

- Ans.** 1. Knife 2. Needle 3. An axe
 4. Pulley 5. Pincers 6. Pliers
 7. Scissors 8. Road roller

E. Match the following :

- Ans.** 1. Inclined plane → a. See-saw
 2. Screw → b. Crane
 3. Pulley → c. Jack
 4. Lever → d. Slide

F. Define the following :

- Ans. 1. Simple machine :** A simple machine is a device which helps

us to apply forces more easily and makes our work easier and more convenient.

2. **Lever :** Lever is a rigid bar or rod that rests on a support called fulcrum. It is a simple machine used to lift heavy weights with minimum amount of efforts.
3. **Inclined plane :** A flat surface with one end higher than the other is called inclined plane. The inclined plane is very useful to raise a body which is too heavy to lift. Inclined plane is also a machine in which a small effort is made to raise a heavy load. An inclined plane does not make less work but it makes the work easier.
4. **Pulley :** A pulley is a wheel within a groove around its rim. This groove is for a rope or a chain to move around the pulley. Pulling the rope from one side lifts the weight attached to the other side.
5. **Screw :** A screw is an inclined plane wrapped around a rod, pole or cylinder. The total length of the threads will form the length of the inclined plane.
6. **Wedge :** The wedge is a short piece of iron thick at one end. It is a double inclined plane. It has two sloping surfaces joined together back to back. Wedges are used by the carpenters and the woodcutters to split thick logs of wood.

G. Answer the following questions :

- Ans.** 1. A lever is a simple machine, which moves freely about a pivot. The pivot is called a fulcrum.
There are three types of levers :
- (i) In the first type of lever, the load and effort are on either side of the fulcrum.
 - (ii) If the load is in between effort and fulcrum it is called second type of lever.
 - (iii) If the load and fulcrum are on either side of effort, it is called third type of lever.
2. Levers are of three types :
The lever in which the load (L) and the effort (E) are on either side of fulcrum (F) is called First kind of lever.
eg : A pair of scissors, see-saw, common balance and boring pump.
The lever in which the fulcrum (F) and effort (E) are on either

side of load (L) is called Second kind of lever.

eg : nutcracker, bottle opener, door hinges and wheelbarrow etc.

When the effort (E) is in between the fulcrum (F) and the load (L) it is called Third kind of lever.

eg : Forceps, the broom with a long handle that is used to clean roads, iron ball in the palm and a fishing rod.

3. Do it yourself.
4. You observe that it is easier to draw water from a well when the rope passes over a pulley. The pulley makes it easier to draw water from the well. Hence pulley is a simple machine. When water is drawn from a well directly (without wheel) more effort has to be applied because the rope is pulled vertically upwards against the Earth's gravitational force. On the other hand, when the rope is passed over a pulley we pull the rope downwards towards the earth (effort is acting towards gravitational force of the Earth). So the force of gravity helps us. As a result we can pull the bucket of water using a much smaller force in a lesser time and we feel pulling the rope downward is more convenient as compared to pulling it upward. So the use of simple machine like pulley enables us to change the direction of force.
5. **Wheel and Axle :** The axle is a rod made of iron or wood. It is fixed to the wheel. There is another iron rod on which wheel-axle rotates. In some villages, instead of a pulley a wheel-axle is used to draw water from well. Water is drawn by rotating wooden grips on the wheel. A pulley is a simple machine made with a rope or chain wrapped around a wheel. It changes the direction of force and thus makes it easier to lift things to some height. Some situations where pulleys are used are drawing water from a well, raising a flag on a flagpole, workers loading goods, etc.

Things To Do

Do it Yourself