Science

PART

2

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Science

NEP 2020 FEATURES

The National Education Policy 2020 is determined to modify and broaden the approach of the learners so as to uproot the weaknesses whatsoever. This policy proposes the revision and revamping of all aspects of the education structure to create a new system that is aligned with the aspirational goals of the 21st century education.

Important Elements of NEP

- **SDGs for Qualitative Education :** Sustainable Development Goals for Qualitative Education introduces the learners to a most practical and valuable education system so as to quench their thirst of learning and career-building.
- **Cross-Cultural Learning:** It is a padegogy that increases one's understanding of one's own culture in contrast to another's.
- **The 4Cs : Core Learning `Skills :** Critical Thinking, Creativity, Collaboration, and Communication are the 4Cs of the 21st Century Skills.
- **Multiple Intelligence:** The persons having systematized knowledge mainly consider multifarious prudence. Multiple Intelligence allows us to think about different types of mental strengths and abilities.
- **Critical and Analytical Thinking:** It includes four processes (i) One has an experience of it, (ii) followed by one's reaction to it. Then is (iii) one's concept about it and finally (iv) application of this experience in onward such events.
- **Adaptive Education :** Adaptive learning offers students more control over their learning process, making them feel more empowered.
- **Life Skills :** These enable one to be always gentle and vocational reflecting human values, dutifulness, sentiments etc. These are the basic traits a learner must possess to make his/her learning proper and creative.
- **Development of Traditional Knowledge :** Traditional knowledge is the knowledge, know-how, skills and practices that are developed, sustained and passed on from generation to generation.

PREFACE

The present series 'Science' for classes 1 to 8 has been designed in such a way that students easily comprehend different scientific phenomena.

Children by nature are curious and eager to know more about their surroundings. They need proper guidance and proper reason of the events. Therefore we have divided the whole book in different units which will help them to understand surrounding facts in a proper way.

Some salient features of the book are :

- The language is very simple and attractive.
- Every scientific phenomena is explained with the help of picture.
- At the end of each chapter ***'Sum Up Now'*** are given, very valuable for the students.
- Exercises are designed in such a way that an interest is created when they do that.
- Model Test Papers help the students to solve the questions.

We are sure that this series would serve the purpose for which it is intended. We would welcome your valuable suggestions from the Principals, teachers, parents and students to improve the series.

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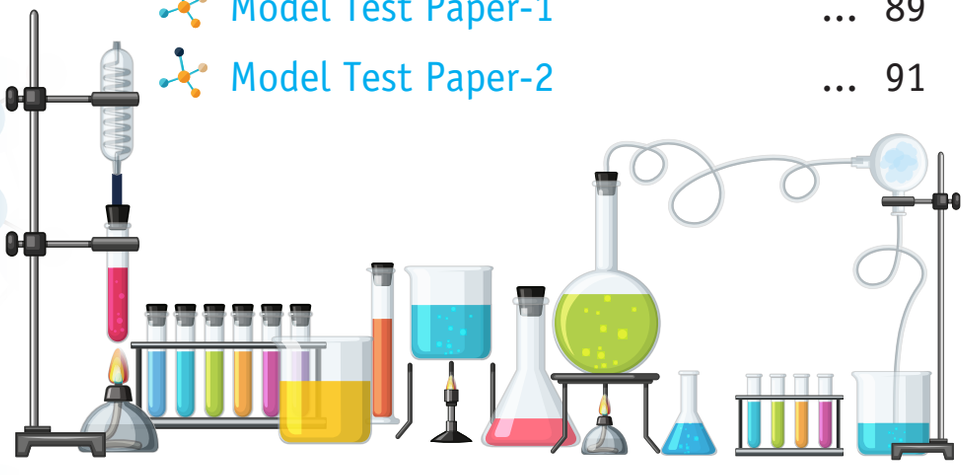


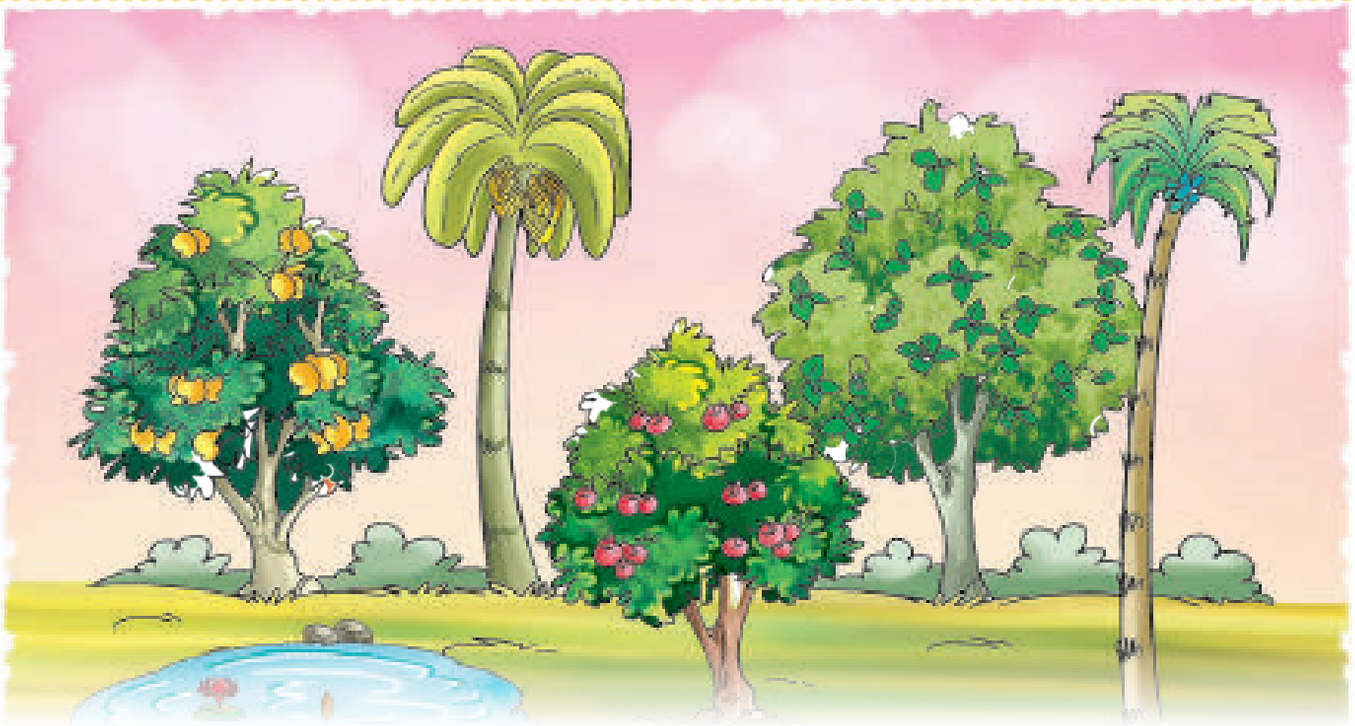
1

Unit-I : Plant Life

PLANTS AROUND US

Stepping Up

- Types of Plants
- Life Span of Plants



We see different kinds of plants in the picture. These plants are of different shapes, sizes and colours. Some plants are big while some are small.

Check Yourself (Visual Perception Based)

Identify the names of these pictures given below :

_____ _____ _____ _____ _____

TYPES OF PLANTS

On the basis of the **size** and **kinds of stem**, plants are of different kinds as follows :

- Trees
- Shrubs
- Herbs
- Climbers
- Creepers

Trees

- Strong and big plants are called trees.
- They have hard and thick stem called the **trunk**.
- They have many branches that bear leaves, flowers and fruits.
- They live for many years.
- Neem, mango, banyan, pine, coconut etc. are examples of trees.

Neem

Banyan

Mango

Pine

Coconut

Shrubs

- Small plants with a hard and thin stem are called **shrubs**.
- They are bushy and smaller than trees.

- Most shrubs live only for a few years.
- Rose, cotton, hibiscus, etc. are examples of shrubs.

Rose

Cotton

Hibiscus

Herbs

- Very small plants with a soft and weak stem are called herbs.
- They live only for three to four months.
- Mint, tulsi and spinach are examples of herbs.

Many herbs are used as medicines or to add flavour to our food.

Mint

Tulsi

Spinach

Climbers

- The plants which cannot stand on their own and climb up with support are called **climbers**.
- They need support of sticks, walls and other plants to grow.
- They have very weak steams.
- Grapevine, beans, money plant, etc. are climbers.

Grapevine

Beans

Money Plant

Creepers

- Plants that cannot stand on their own and grow along the ground are called creepers.
- They have weak stems and thin branches.
- Pumpkin, watermelon and bottle gourd are examples of creepers.

Pumpkin

Watermelon

Bottle gourd

Check Yourself (Visual Perception Based)

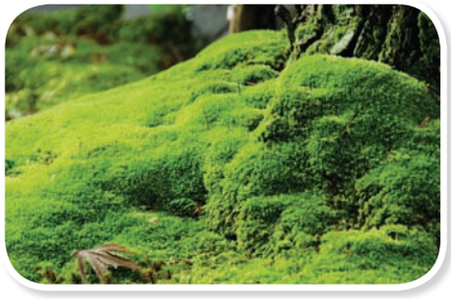
Write S below the shrub, T below the tree, H below the herb, Cl below the climber and Cr below the creeper :

MAKE TEACHING FUN

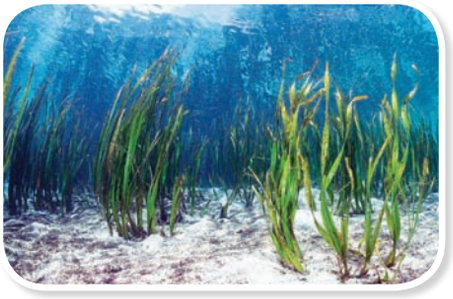
Bring some different vegetables in the class like a cabbage, carrot and turnip. Encourage the students to apply their understanding of different edible parts of these vegetables.

Aquatic Plants

- Some plants grow in water.
- They are called **aquatic plants**.
- Moss, seaweed and lotus are some water plants.



Moss



Seaweed

Lotus

Desert Plants

- Plants that grow in deserts are called **desert plants**.
- Desert plants can live without water for many days.

Cactus

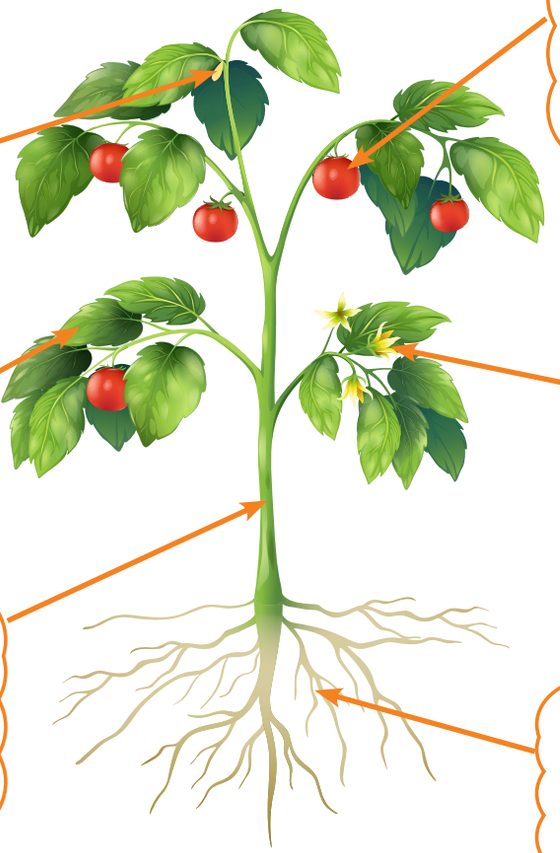
Datepalm

LIFE SPAN OF PLANTS

Different plants have different lifetime. Some plants live for a long time. They are called **perennial plants**. Neem and peepal trees live for many years. Some plants live for two seasons and are called **biennial plants**. Carrot, radish, potato are the examples of such plants. Some plants live for one season only. They are called **annual plants**. Wheat, maize, etc. are annual plants.

Parts of a Plant

A plant has many parts and each part is important.



Parts of a plant

The oldest banyan tree (1000 years old) in India can be found in the Botanical Gardens of Kolkata.

Sum Up Now :

- Big and tall plants are called trees.
- Shrubs are small plants with woody stems.
- Herbs are small plants with soft green stems.
- Climbers need support of a wall, stick or other plant to stand straight.
- Creepers grow along the ground.

PRACTICE ZONE

(Assessment Of Learning Outcome)

A. Tick (✓) the correct answer :

1. Trees have hard and thick stem called :
   (i) trunk ☐ (ii) branches ☐ (iii) none of these ☐
2. Mint and tulsi are :
   (i) shrubs ☐ (ii) herbs ☐ (iii) climbers ☐
3. Which plant grow in desert?
   (i) cactus ☐ (ii) lotus ☐ (iii) grapevine ☐
4. The flower grows to become a :
   (i) leaf ☐ (ii) fruit ☐ (iii) stem ☐
5. Wheat and maize are :
   (i) annual plants ☐ (ii) perennial plants ☐ (iii) biennial plants ☐

B. Fill in the blanks with the given words :

Datepalm, Potato, carrot, aquatic, creepers, bud

1. Pumpkin and watermelon are _____ .
2. _____ and _____ are called biennial plants.
3. _____ is a desert plant.
4. Lotus is an _____ plant.
5. A _____ grows into a flower.

C. Write 'T' for true and 'F' for false for the following :

1. Trees live for many years. ☐
2. Shrubs are taller than trees. ☐
3. Neem is a perennial plant. ☐
4. Herbs are seasonal plants. ☐
5. The leaf produces seeds. ☐

D. Answer the following questions :

1. What are shrubs? Give examples.

_____

_____

2. Write the difference between creepers and climbers. Give example for each.

_____

_____

3. What are aquatic plants?

_____

_____

4. What are perennial plants?

_____

_____

5. Name the different parts of a plant.

_____

_____

- Vidhan was asked to collect one climber for his homework. He collected pea plant for it. Did he do his homework correctly?

Creativity Zone

Physical Media Development (PMD)

- Let's learn to use waste :

Visit a park close to your house. Collect all the fallen leaves and flowers of different types. Press them in the folds of old books or newspapers. After a few days the leaves and flowers will become dry. Now, take some drawing sheets and tie them together. Ask your teacher to help you in tying the sheets. Make a pretty cover for your album by pasting the dried leaves and flowers.

2 USES OF PLANTS

Stepping Up

- Food from Plants
- Different Uses of Plants

Plants play a very important role in our life. They give us a lot of things. Most of our food come from plants. We get many other useful things from plants such as pencil, paper, rubber, wood, medicines and many more.

Check Yourself (Visual Perception Based)

Circle the things we get from plants:





In this chapter, we will learn more about the importance of plants.

FOOD FROM PLANTS

We get most of our food from the plants. We eat different parts of a plant as food.

For example :

We eat the **roots** of plants like beetroot, carrot, turnip, radish, etc.

Beetroot

Carrot

Turnip

Radish

We eat the **stems** of plants like potato, sugarcane, onion, etc.

Potato

Sugarcane

Onion

We eat the **leaves** of plants like cabbage, spinach, lettuce, coriander, etc.

Cabbage

Spinach

Lettuce

Coriander

We eat **seeds** of plants like grams, groundnuts, peas, etc.

Groundnuts

Peas

Plants give us cereals and pulses. Seeds of plants like rice, wheat, barley and maize are called **cereals**.


Rice


Maize


Wheat


Barley


Cereals and Pulses

Seeds like arhar, urad, moong and masoor are called **pulses**.


Arhar


Urad


Moong


Masoor

Cereals and pulses are called **foodgrains**.

Plants give us **fruits** and **vegetables**. They also give us nuts like coconut, cashew nut, walnut, etc.


Fruits


Vegetables


Cashewnut


Coconut


Walnut

Jackfruit is the largest fruit in the world. It may weight upto 10 kg.

Plants Give us Tea, Coffee (Beverages), Cocoa and Sugar

We get tea, coffee, sugar, cocoa from the plants.

Leaves of tea plant are used to make tea.

Coffee seeds are crushed to get coffee.

We get sugar from sugarcane. Cocoa beans are crushed to make chocolate.


Coffee


Tea


Sugar

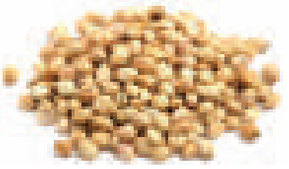
DIFFERENT USES OF PLANTS

Plants Give us Spices

Spices add taste, flavour and aroma to our food. We get spices such as cardamom, coriander, turmeric, cinnamon, cloves etc. from plants.


Caradamom


Pepper


Coriander


Turmeric


Cinnamon

Plants Give us Medicines

We get medicines from plants like tulsi, neem, garlic, eucalyptus, etc. **Tulsi** leaves are used to cure cold and cough. Some parts of amla, haldi and aloe vera are also used as medicines. We get quinine from the bark of the **cinchona** tree. It is used to cure **malaria.**


Tulsi


Neem


Amla


Aloe Vera


Medicines


Jasmine Perfume


Rose Perfume

Plants Give us Perfumes

Flowers of certain sweet-smelling plants like rose, champa and jasmine are used to make perfume.

Plants Give us Oil

We get oil from seeds of plants such as mustard, groundnut, coconut etc.

We get oil by crushing the seeds of these plants. Oil is used in cooking food, making soap, etc.


Groundnut oil


Cooking Food


Soap


Mustard oil

Check Yourself (Critical Thinking)

Match column A with column B :

	Column A		Column B
1.	leaves	(i)	spice
2.	beans	(ii)	oil
3.	mustard	(iii)	ginger
4.	coriander	(iv)	tea
5.	stem	(v)	coffee

Plants Give us Wood

Plants give us wood. We make many things like pencil, table, chair, window and door from wood and use firewood as domestic fuel.


Furniture from Wood

Plants Give us Fibres

We get fibres from plants like cotton, jute, etc. Cotton fibre is used to make cotton clothes.

Cotton Plant

Pant

Frock

Shirt

Jute Plant

Bag

Jute fibre is used to make ropes, bags, sacks and mats.

Knowledge Bank

Bamboo is the tallest grass and the fastest growing plant.

Bamboo Plant

Paper

Plants Give us Paper, Gum and Rubber

We get paper from plants such as bamboo and pampas grass.

Rubber items such as gloves, rubber ball, tyres and erasers are also made from the milky liquid of rubber plants.

Rubber Plant

Tyre

Eraser

We get **gum** from the juice of the **acacia** or **keekar** tree.

Acacia Plant

Some other uses of Plants

Bouquet

Garland

Flowers like rose and marigold are used for making garlands. We use flowers and leaves of some plants to make bouquets.

Plants help to cool and clean the air. They give us oxygen to breathe. They make the surroundings beautiful. Plants are the home of many animals such as insects, birds, etc.

Sum Up Now :

- Most of our food comes from plants.
- Plants give us many useful things like fruits, vegetables, seeds, spices, food grains, etc.
- Plants also give us tea, sugar, coffee, fibre and perfumes.
- We get rubber and gum from plants.
- Some plants are used for making medicines.
- Plants also give us fresh air and make the surrounding green and beautiful.

PRACTICE ZONE

(Assessment Of Learning Outcome)

A. Tick (✓) the correct answer :

1. Plants give us fruits and :
   (i) plastics ☐ (ii) vegetables ☐ (iii) both of these ☐
2. Jasmine plants are used for making :
   (i) perfumes ☐ (ii) medicines ☐ (iii) spices ☐
3. Leaves of this plant is used to cure cold and cough.
   (i) tulsi ☐ (ii) amla ☐ (iii) neem ☐
4. This is obtained from the juice of the acacia tree.
   (i) gum ☐ (ii) rubber ☐ (iii) oil ☐
5. Plants give us :
   (i) carbon dioxide ☐ (ii) oxygen ☐ (iii) none of these ☐

B. Fill in the blanks with the given words :

bouquet, keekar, chocolate, wood, sugar

1. Gum is obtained from _____ tree.
2. Cocoa beans are crushed to make _____.
3. We use flowers to make _____.

4. We get _____ from sugarcane.
5. Tables and chairs are made of _____.

C. Write 'T' for true and 'F' for false for the following :

1. We eat roots of onion and potato.
2. Cocoa beans are crushed to make chocolate.
3. Spices add flavour and taste to our food.
4. Flowers of rose plant are used to make perfumes.
5. Cereals and pulses are known as foodgrains.

D. Answer the following questions :

1. What do plants give us?

_____

_____

2. Name the plants that give us medicines.

_____

_____

3. How do we get oil from plants?

_____

_____

4. Where do we get tea and coffee from?

_____

_____

- At Tina's home, they use mustard oil to cook food. At Payal's place, they use sunflower oil to cook food. What is that one thing which is common between mustard oil and sunflower oil?

Creativity Zone

Physical Media Development (PMD)

- Collect seeds of different plants. Put them in small polybags. Paste them in your scrapbook. Write the names of the plants against each polybag.

3

Unit-II : Animal Life

DOMESTIC ANIMALS

Stepping Up

- Domestic Animals
- More Help from Animals
- Animals as Sources of Food

Different kinds of animals are found on the earth. Some animals live in forests while some animals can be tamed and kept at home and farms.

DOMESTIC ANIMALS

Animals that are tamed and kept by humans for work, food or as pets are called domestic animals. Domestic animals depend on humans for food and shelter.

Cow

Goat

Camel

Buffalo

Farm Animals

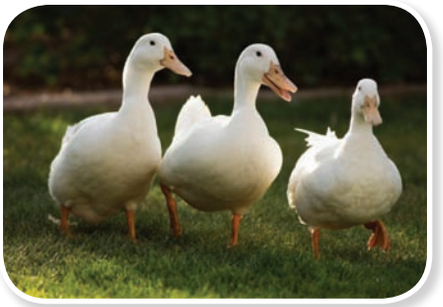
Domestic animals that are kept for work and food at farms are called **farm animals**. Horses, cows, sheep, hens, ducks and goats are some examples.

Horses

Cows

Sheep

Hens



Ducks

Goats

Things we get from farm animals are known as **farm products**, such as egg and milk.

Pet Animals

Animals that live with us in our homes are called pet animals.

Dog

Cat

Rabbit

Parrot

Fish

Pet animals are our friends.

They help us in many ways.

- We play and enjoy with pet animals.
- A dog guards our house.
- A cat keeps mice away.

ANIMALS AS SOURCES OF FOOD

The table shows the different kinds of food we get from animals.

Animals	Food
Cows, buffaloes, camels and goats	Milk which is also used to make cheese, butter, yogurt, ice cream and other milk products
Hen and duck	Eggs
Goat, hen and fish	Meat, chicken and fish
Honeybees	Honey

Milk

Egg

Fish

Honey

CHECK YOURSELF (FOCUSED ATTENTION BASED)

Name the things that we get from animals :

1. Cow _____
2. Hen _____
3. Goat _____
4. Honeybee _____

MORE HELP FROM ANIMALS

Other than food, animals give us things that we need in our daily lives. They help us in many other ways too. Read about it in the table further.

Sheep and yak

Silkworm

Bullocks

Animals	Things or help they provide
Sheep and yak	Wool for woollen clothes
Silkworm	Silk for sari, scarf and other clothes
Bullocks, donkeys, camels and horses	They help to carry heavy loads and people from one place to another. Bullocks and camel plough fields.

Animals like elephant, camel, oxen, horse, and donkey carry heavy loads for us. They are called beasts of burden.

Dung of animals like horses, cows, buffaloes and camels on drying is used as fuel. Also on decomposition of dung , it is used as manure.

Sum Up Now :

- Farm animals and pet animals are also called domestic animals.
- We get milk, eggs, meat and honey from animals.
- We also get wool and silk from animals.
- Some animals carry heavy loads.
- Animal dung makes good manure and fuel.

PRACTICE ZONE

(Assessment Of Learning Outcome)

A. Tick (✓) the correct answer :

1. Cats and dogs are _____ .
   (i) domestic animals ☐ (ii) pet animals ☐ (iii) farm animals ☐
2. We get silk from _____ :
   (i) sheep ☐ (ii) silkworm ☐ (iii) goat ☐
3. This animal chases mice :
   (i) cat ☐ (ii) goat ☐ (iii) hen ☐
4. _____ is a farm product.
   (i) Milk ☐ (ii) Book ☐ (iii) Pencil ☐
5. Milk is used to make _____ :
   (i) cheese ☐ (ii) eggs ☐ (iii) none of these ☐

B. Fill in the blanks with the given words :

silk, dog, eggs, fish, sheep

1. A _____ guards our houses.
2. We get _____ from hen.
3. _____ gives us wool.
4. We keep _____ in aquariums.
5. We get _____ from silkworm.

C. Write 'T' for true and 'F' for false for the following :

1. Domestic animals depend on humans for food and shelter. ☐
2. Fish gives us honey. ☐
3. Silkworm gives wool. ☐
4. Earthworm helps to make the soil fertile. ☐
5. Animal dung is used as a good manure and fuel. ☐

D. Answer the following questions :

1. What are domestic animals?

_____

_____

2. What do you mean by pet animals?

_____

_____

3. Name the things that are made from milk.

_____

_____

4. Name the animals that carry heavy loads for us.

_____

_____

- Aditi is visiting her uncle's farm. Circle the animals she would not see there. Say why?

duck lions sheep tiger goat deer

Creativity Zone

Physical Media Development (PMD)

- Tick (✓) Column B for food we get from animals. Write the names of the animal in Column C.

Column A	Column B	Column C
Milk		
Paratha		
Omelette		
Fruit salad		
Chicken		
Chapati		

4 WILD ANIMALS

Stepping Up

- Houses of Wild Animals
- What do wild Animals Eat?
- Endangered Animals

The animals we see in the forest are called wild animals. We cannot keep these animals at home.

Giraffe

Tiger

Zebra

Lion

Bear

Deer

Tigers, zebras, giraffes, bears, lions and deer are examples of wild animals.

Some wild animals such as crocodiles, snakes and frogs, live both in water and on land.

Crocodile

Frog

Snake

HOUSES OF WILD ANIMALS

Wild animals find or build their own houses or shelters. Let us learn about them.

Caves

Many animals live in **caves** or **dens** found in the forests. Lions, tigers, bear and bats are animals that live in caves.

Lion in a den

Tiger in a den

Burrows

Some animals dig **burrows** in the ground where they store food and find shelters. Rabbits, moles, rats, snakes and mongoose live in burrows.

A rabbit in its burrow

A snake peeping out of its burrow

Rat in a burrow

Nests

Birds build **nests** on trees. The nests are safe shelters for their eggs and babies. Monkeys and koalas also live on trees.

Nest

Monkey live on trees.

Koalas live on trees.

Hives

Hives

Honeybees are often kept in farms for honey. However, they also live in the wild. They build **hives** to live in. They store food (honey) and lay eggs in the hive.

Webs

The home of a spider is called the **web**. Apart from shelter, the web helps the spider to catch small insects that are its food.

Web

National parks contain a variety of wild animals and birds. They are large protective areas where plants and animals live.

WHAT DO WILD ANIMALS EAT?

Different animals eat different types of food. On the basis of their food habits, animals can be divided into three categories :

Herbivores, **carnivores** and **omnivores**.

Find more information on food habits of animals in the table given below :

Animals	Food they eat	Examples
Carnivorous animals	Eat the flesh of other animals	Lion, tiger, crocodile, wolf and shark
Herbivorous animals	Eat plants	Buffaloes, rabbits, cows, deer, elephants, zebras and giraffes
Omnivorous animals	Eat both plants and other animals	Bears, foxes and some birds

ENDANGERED ANIMALS

Many wild animals are killed by human beings for their tusks, horns etc.

As a result, animal such as pandas, Indian rhinoceros, etc. have become endangered.

Endangered animals are kept safe in national parks and wildlife sanctuaries.

Rhinoceros

Panda

Sum Up Now :

- Animals that live in the forests or other places apart from our homes and farms are known as wild animals.
- Wild animals do not depend on humans for food, shelter and other needs.
- A place where a wild animal lives, find food and water is known as its habitat.
- On the basis of their food habits, animals are herbivores, carnivores and omnivores.

PRACTICE ZONE

(Assessment Of Learning Outcome)

A. Tick (✓) the correct answer :

1. Wild animals live in :
   (i) forest ☐ (ii) farms ☐ (iii) homes ☐
2. Lions and tigers live in :
   (i) dens ☐ (ii) burrows ☐ (iii) water ☐
3. The home of a spider is called :
   (i) cave ☐ (ii) web ☐ (iii) den ☐
4. Animals that eat only the flesh of other animals are called:
   (i) omnivores ☐ (ii) carnivores ☐ (iii) herbivores ☐
5. Bees store _____ in their hives.
   (i) water ☐ (ii) honey ☐ (iii) milk ☐

B. Fill in the blanks with the given words :

burrow, Carnivorous, Herbivores, wild, trees

1. Bears and giraffes are _____ animals.
2. Monkeys and koalas live on _____.
3. Small animals dig _____ in the ground.
4. _____ are the animals that eat plants.
5. _____ animals eat flesh of other animals.

C. Name any two :

1. Herbivorous animals _____ _____
2. Carnivorous animals _____ _____
3. Omnivorous animals _____ _____

D. Answer the following questions :

1. What are wild animals?

_____

_____

2. Name any three animals who lives in caves.

_____

_____

3. What is web? Explain.

_____

_____

4. What are the three categories of animals?

_____

_____

Critical Thinking

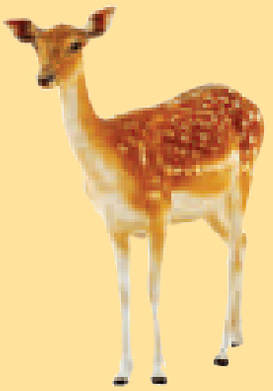
- Pet dogs and cat eat both plant products and animal products. What would you call them?

1. herbivores 2. omnivores 3. carnivores

Creativity Zone

Physical Media Development (PMD)

- Fill in the crossword puzzle with the names of wild animals:



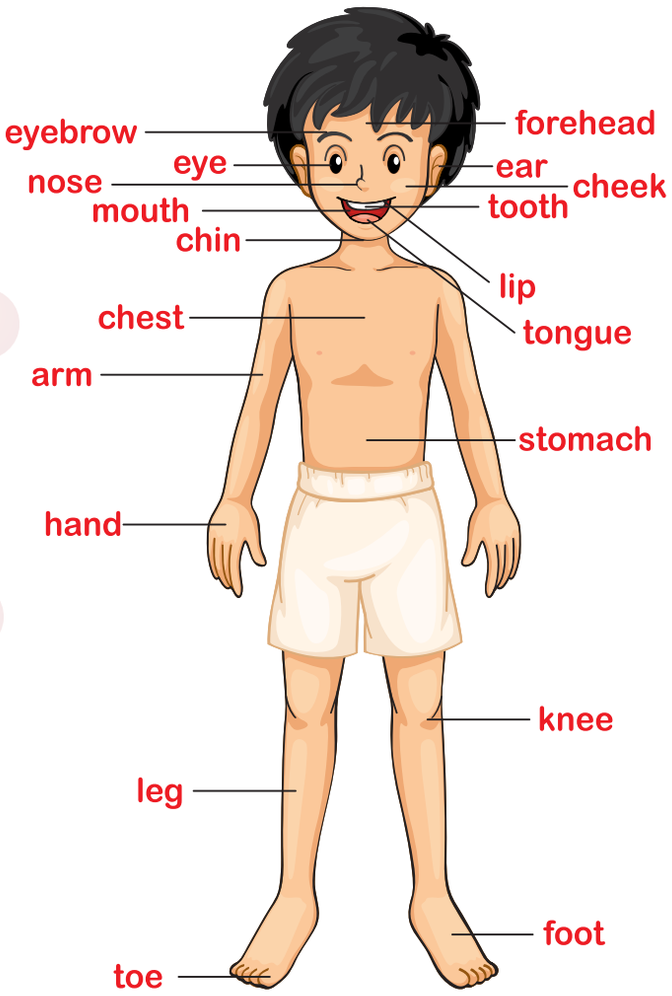
Unit-III : Human Body

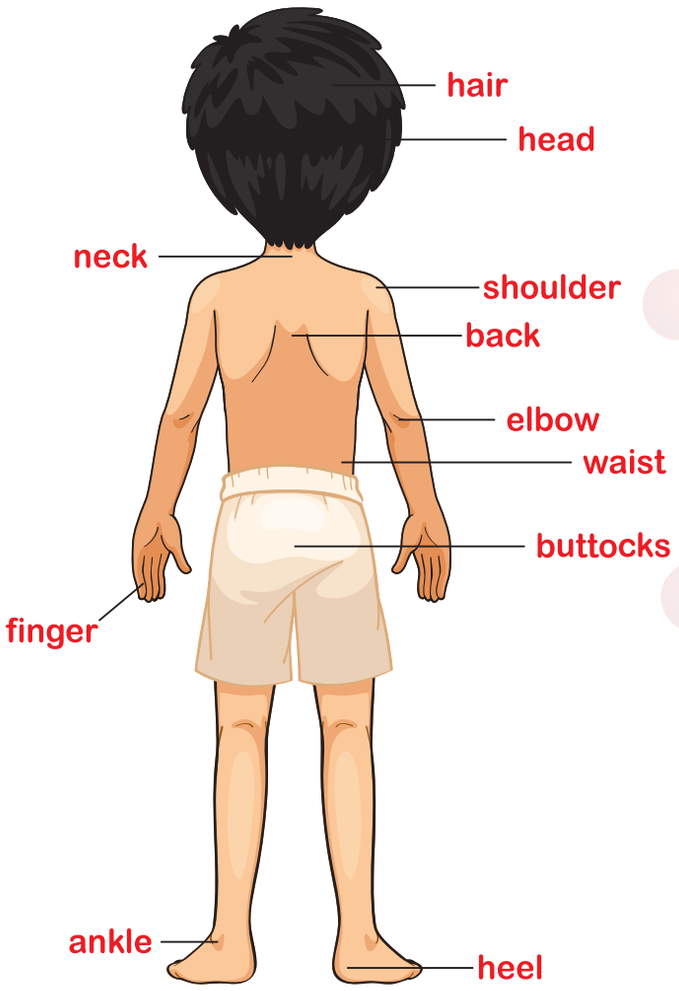
5 HUMAN BODY

Stepping Up

External and Internal Body Parts Physical Exerise Correct Posture

Look at the parts of the body in the given picture.

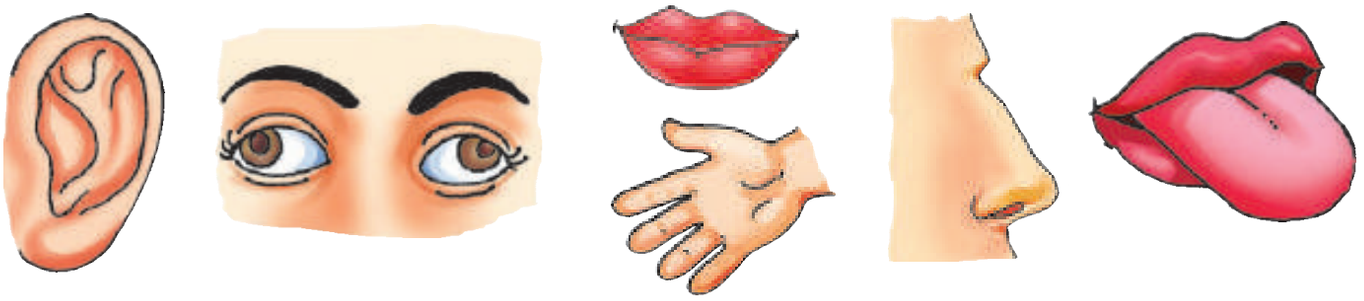




External and Internal Body Parts

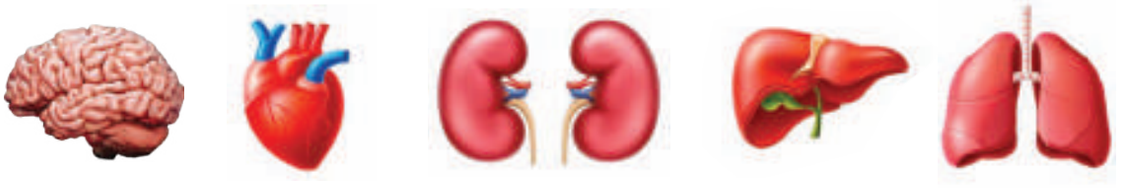
The human body is like a machine with many parts. All the parts play their own important roles to help the body work and grow.

Parts of the body that we can see from outside are called the **external body parts**. Examples : Eyes, nose, ears, hands, feet, neck, cheeks and chin.



External body parts

Internal body parts are present inside the body and cannot be seen from outside. Examples : Brain, heart, lungs, liver and kidneys.



Internal body parts

BONES AND MUSCLES

Everything you stand, sit and walk, you are using your bones, muscles and joints. Without these important body parts, we would not be able to stand, walk, run or even sit.

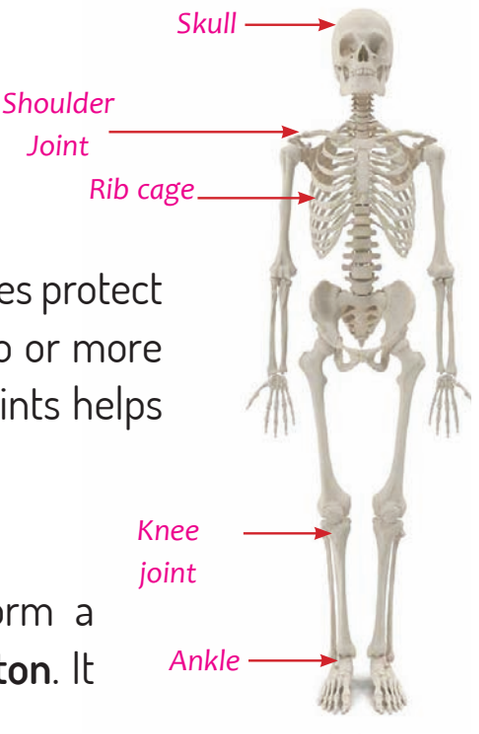
All parts of our body join together with bones and muscles. The skin covers our body.

Bones

Bones are hard. There are 206 bones in our body. Bones protect the delicate organs of our body. The place where two or more bones are joined together is known as a **joint**. The joints helps us to bend.

Skeleton

In our body, 206 bones are joined together to form a framework. This framework of bones is called **skeleton**. It provides support and gives shape to our body.



Skeleton

Make Teaching Fun

Explain that we can see bones through x-ray pictures.

Muscles

Muscles are the soft parts which cover the bones. They help in the movement of the body.

There are more than 600 muscles in our body. Our **arm muscles** help us to lift, hold and carry things.

Our **leg muscles** help us to walk, run, jump, hop, swim and play.

Check Yourself (Critical Thinking)

Do the following activities and write down what parts of your body helped you to do these activities :

1. Lift a heavy book _____
2. Play with a cricket ball and bat _____
3. Climb a ladder _____

PHYSICAL EXERCISE

Regular exercise and healthy food make our **bones** and **muscles** strong. Activities such as running, walking, jogging, swimming, jumping, playing or skipping make the bones and muscles strong and flexible.

Cycling

Yoga

Jogging

Eating healthy food

Strong muscles and bones help us to work and play without getting tired.

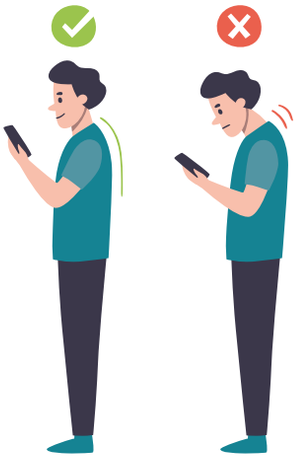
Correct Posture

Posture is the position in which we keep our body, when we sit, stand or walk. Correct posture is important for healthy bones and muscles. It keeps our body in good shape. Some tips on good posture :

Rules of Correct Posture

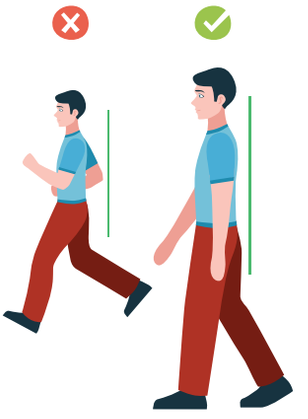
1. While sitting:

- Sit with your back straight.
- Keep your head up.
- Keep your shoulder straight.
- Keep your feet flat on the floor.



2. While standing:

- Stand erect with your back straight.
- Keep your chest a little out and chin in.
- Put the weight of your body evenly on both the feet.
- Keep your feet about 15 centimeters apart.



3. While walking:

- Keep your body straight.
- Hold your head high.
- Allow your ankles and knees to move freely.
- Swing your arms freely.

Sum Up Now :

- Parts of the body that we can see from outside are called the external body parts.
- Internal body parts are present inside the body and cannot be seen from outside.

- Bones are hard. They protect the delicate organs of our body.
- Our body has a framework of bones called the skeleton. It provides shape and support to our body.
- Muscles are attached to the bones and help them to move.

PRACTICE ZONE

(Assessment Of Learning Outcome)

A. Tick (✓) the correct answer :

1. There are more than _____ muscles in our body.
   (i) 550 ☐ (ii) 600 ☐ (iii) 650 ☐
2. The point where two bones meet :
   (i) joint ☐ (ii) muscles ☐ (iii) none of these ☐
3. The brain is located in the _____.
   (i) skull ☐ (ii) liver ☐ (iii) kidney ☐
4. We should do exercise _____.
   (i) daily ☐ (ii) once a week ☐ (iii) twice a week ☐
5. Exercise makes our muscles _____.
   (i) weak ☐ (ii) strong ☐ (iii) none of these ☐

B. Fill in the blanks with the given words :

straight, skin, machine, posture, Muscles

1. The human body is like a _____.
2. _____ are soft parts which cover the bones.
3. The _____ is the outer covering of the body.
4. Correct _____ keeps our body in proper shape.
5. We should sit with our back _____.

C. Write 'T' for true and 'F' for false for the following :

1. Our body is made up of bones and muscles. ☐
2. Bones give shape to our body. ☐

3. There are 400 bones in our body.
4. Muscles are hard and stiff.
5. The correct posture make us look ugly.

D. Answer the following questions :

1. What are internal body parts?

_____

_____

2. What are external body parts?

_____

_____

3. What are bones and muscles?

_____

_____

4. Why is physical exercise important?

_____

_____

5. What is posture?

_____

_____

- Reena bends forward while sitting. Is this the correct posture!

Creativity Zone

Physical Media Development (PMD)

- Ask each of your family member to place their foot on a sheet of paper. Trace an outline of their feet. Does the length tell you something about the size of their bones .

6 FOOD FOR US

Stepping Up

- Different kinds of Food
- Water
- Healthy Eating Habits
- Balanced Diet

All living beings need food to remain alive.

We need to eat food:

(i) to get energy to do all the activities such as studying, playing, walking and thinking.

Studying

Playing

Walking

Thinking

(ii) to keep us healthy and fit, and

(iii) to grow big and strong.

DIFFERENT KINDS OF FOOD

We eat different types of food every day. We can divide the food we eat into three categories. Let us look at the table below to learn more about these food groups and their importance.

Food-group	Functions	Examples
Body-building food	• Make us healthy and help us to grow. • Build our bones and muscles and make them strong.	Milk and milk products, meat, eggs, fish, beans and pulses.
Energy-giving food	Give us energy to work, study and play.	Wheat, potato, rice, sugar and butter.
Protective food	Protect our body from diseases.	Fruits, vegetables and nuts.

Water

Water is very essential for us. It helps us to throw out wastes from the body. We must drink 8-10 glasses of water every day.

Balanced Diet

A daily pattern of eating and drinking is called **diet**.

We must eat the right kind of food for proper growth and health. A diet rich in proteins, carbohydrates, fats, minerals and vitamins is called a **balanced diet**.

Balanced Diet

We take three meals a day.

The first meal of the day is called the **breakfast**.

We take breakfast in the morning.

The second meal is called **lunch**. We take lunch in the afternoon.

In the evening we may have some light **snacks** to eat.

The third meal is called **dinner**.

We take dinner at night.

Cows produce 90 percent of the world's milk needs.

Breakfast

Lunch

Dinner

Make Teaching Fun

Discuss about energy-giving food such as butter, ghee and oil that are difficult to digest.

Healthy Eating Habits

To stay healthy and fit, it is important to include food from every food group in our meals. We must also remember to :

- Drink plenty of water.
- Wash the hands before and after every meal.
- Rinse the mouth after every meal.
- Have meals on time and keep proper gaps between the meals.
- Take small bites and chew the food well before swallowing it.
- Eat clean and fresh food.
- Eat and drink from clean plates, spoons and glasses.
- Eat just the right amount of food, neither more nor less.
- Not to have junk food too often and too much.

Check Yourself (Critical Thinking)

Take this test :

1. Do you wash your hands before and after eating?
2. Do you drink milk every day?
3. Do you chew your food properly?
4. Do you eat fruits and vegetables?

Now compare your answers with those of your friends.

Sum Up Now :

- Food gives us energy to work and play.
- We should eat just enough food to keep us fit.
- Food can be divided into three groups : Body-building foods, energy-giving foods and protective foods.
- Breakfast, lunch and dinner are the three main meals of the day.

PRACTICE ZONE

(Assessment Of Learning Outcome)

A. Tick (✓) the correct answer :

1. We need food to remain :
   (i) dead ☐ (ii) alive ☐ (iii) none of these ☐
2. Fruits and vegetables are _____ foods:
   (i) energy giving ☐ (ii) protective ☐ (iii) both (i) or (ii) ☐
3. A daily pattern of eating and drinking is called :
   (i) food ☐ (ii) diet ☐ (iii) both ☐
4. We must eat _____ food.
   (i) dirty ☐ (ii) fresh ☐ (iii) junk ☐
5. _____ is our afternoon meal.
   (i) Lunch ☐ (ii) Breakfast ☐ (iii) Dinner ☐

B. Fill in the blanks with the given words :

Protective, swallowing, Milk, junk, dinner, water

1. _____ is a body-building food.
2. _____ foods protect us from diseases.
3. We take _____ at night.
4. We must drink plenty of _____.
5. We should not have too much _____ food.

C. Write 'T' for true and 'F' for false for the following :

1. We must eat junk food regularly. ☐
2. We must wash our hands before and after having meals. ☐
3. Chewing food properly is important for digestion. ☐
4. We should not drink lots of water. ☐
5. We should never skip breakfast. ☐

D. Answer the following questions :

1. Why do we need food?

_____

_____

2. What is body-building food?

_____

_____

3. What is balanced diet?

_____

_____

4. Write some healthy eating habits

_____

_____

- Rahul's baby sister Misha drinks milk and eats some baby food. Rahul eats fruits, vegetables, roti, rice, dal, cereals and many other food items. Why do you think Rahul and Misha have different food habits?

Creativity Zone

Physical Media Development (PMD)

- Prepare a balanced diet chart and display it in your classroom.

7 SAFETY RULES

Stepping Up

- Safety Rules on the Road
- Safety at home
- Safety Rules in a Vehicle
- Safety Rules the Pool
- First Aid

Safety means to save ourself and others from danger or any kind of risk.

Accidents happen when we are careless. We can avoid such accidents by being careful. We should follow safety rules every time and everywhere whether at home and outside.

The members of red cross society teach us first aid and do all welfare work.

Do not run on the road.

Do not tease an animal.

Do not run on stairs.

Safety Rules on the Road

- Always use the footpath while walking.
- Cross the road only at **zebra crossing**.
- Do not play on the road.
- Never run across the road.

- Always ride your bicycle on the left side of the road.
- Look to your right, then left and then right again before crossing the road. Cross the road when it is clear.

Check Yourself (Critical Thinking)

Fill in the blanks below with the correct colours name of the traffic signal:

The traffic light says:

When I turn _____, the traffic waits.

When I turn _____ , off the traffic goes.

When I turn _____ , the traffic stops.

Safety Rules at the Playground

- Always play at safe places like a park or in an open space.
- Always play safe games.
- Do not push or pull each other off the swings.
- Never stand in front of a moving swing.

Safety Rules in a Vehicle

- Do not get in or out of a moving vehicle.
- Do not put your hand, head or any other part of your body out of a moving vehicle.

- Do not disturb the person who is driving the vehicle.
- Always stand in a queue to get into a bus.
- Do not stand on the footboard of a bus.

Safety At Home

- Do not touch electrical switches and plugs with wet hands.
- Do not play with sharp objects like knives and blades.
- Do not fly kites on the roofs of the house. You may fall down.
- Do not throw your toys on the floor. You may trip on them and fall.
- Never take any medicine without the permission of the elders.

Do not play with electric switch.

Do not play with sharp object.

Do not fly kite on roof.

Safety Rules in the Pool

- Do not swim without the supervision of an older person. Do not swim in the deeper side of the pool.
- If you have not learnt to swim properly, always use swimming tubes or floaters.
- Do not push each other into the water.

First Aid

The immediate treatment given to an injured person before a doctor's arrival is called **first aid**. First aid means providing quick medical help before taking the injured person to a nearby hospital. Always keep a first aid box in your house.

Sum Up Now :

- We must be careful and should follow the safety rules to avoid accidents.
- We should cross the road at the zebra crossing and follow the traffic lights.
- We should not play with sharp objects or fire.
- Do not play on the road or on the roof.
- We should not go alone into a pool.
- The immediate treatment given to an injured person before a doctor's arrival is called first aid.

PRACTICE ZONE

(Assessment Of Learning Outcome)

A. Tick (✓) the correct answer :

1. Safety means to stay away from :

(i) danger ☐ (ii) toys ☐ (iii) books ☐

2. We should play on/in :

(i) road ☐ (ii) park ☐ (iii) none of these ☐

3. We should not play with :

(i) soft toys ☐ (ii) sharp objects ☐ (iii) books ☐

4. Do not touch electric switches with :

(i) wet hands ☐ (ii) dry hands ☐ (iii) none of these ☐

5. Always keep the _____ box in the house.

(i) first-aid ☐ (ii) chocolate ☐ (iii) toffee ☐

B. Fill in the blanks with the given words :

careless, first aid, pool, road, footboard

1. Accidents happen when we are _____.
2. We should never run across the _____.
3. We should not go alone into a _____.
4. Always keep a _____ box in the house.
5. We must not stand on the _____ of the bus.

C. Write 'T' for true and 'F' for false for the following :

1. Never run after a vehicle when on a road. ☐
2. Never help blind and old people in crossing a road. ☐
3. Always follow the traffic lights. ☐
4. Do not play in the playground. ☐
5. Do not tease animals for fun. ☐

D. Answer the following questions :

1. How can we avoid accidents?

_____

_____

2. Write three safety rules that you should follow at home.

_____

_____

3. List any two safety rules to be followed on the road.

_____

_____

4. List any two safety rules to be followed in the pool.

_____

_____

- Ria was playing with her broken toys. Ria's mother stopped her from playing with them.Why?

Creativity Zone

Physical Media Development (PMD)

- Draw a picture of Holi in the space provided and colour it nicely. List out at least three safety rules you should follow during this festival.

_____

_____

_____

8

Unit-IV : Our Universe

AIR EVERYWHERE!

Stepping Up

- What does Air contain?
- Keeping the Air Clean

Air is everywhere. All living beings need air to breathe. We cannot see it but we can feel it when we fan ourself, blow on our hand and sit under a moving fan.



- Moving air is called **wind**.
- When wind blows gently, it is called **breeze**.
- When wind blows very fast, it is called **storm**.

WHAT DOES AIR CONTAIN?

Air Contains Dust Particles

When we sweep or dust our furniture, dust particles mix with air.

Air Contains Smoke

Burning of wood, petrol, diesel, etc. release smoke.

Smoke is also released by the chimneys of factories. This smoke get mixed with the air .


Air Contains Water Vapour

We wash our clothes with water. Water makes the clothes wet. Wet clothes dry and we hang them out in the sun. Where does the water go? It converts into water vapour and mixes with air.

Air Contain Germs

When a person coughs or sneezes, germs mix with the air. These germs can make us sick when they enter our body.

Check Yourself (Critical Thinking)

Match Column A with Column B :

	Column A		Column B
1.	moving air	(a)	contains water vapour
2.	germs	(b)	burning petrol
3.	air	(c)	wind
4.	smoke	(d)	not good for health

Features of Air

Air has its own features or properties. Let us read about some simple activities to understand these properties.

Features of Air	An activity to show
Air fills up empty space. It gives shape to things.	While chewing a chewing gum, when we blow it out, it grows. What is inside the blown up chewing gum? It's air. It fills up the empty space in the gum and gives it shape.
Air has weight.	Keep an empty balloon on a measuring scale and note its weight. Now blow air into the balloon and weigh it again. You will notice that the balloon filled with air weigh more than the empty balloon.
Air has force.	Moving air has a lot of force. It blows everything that comes in its way.

Keeping the Air clean

Plants, animals and human beings need to breathe clean air. Here are some ways of making the air cleaner and healthier.

- We should plant more trees. Trees keep the air clean, fresh and healthy.
- Too many vehicles on the road means more dirty smoke getting mixed with air.

Walking short distances or sharing rides in cars can reduce the number of vehicles.

- Bicycles do not give out smoke. So, we can ride the bicycle to keep the air clean.
- We should never burn dry leaves, garbage and other things that emit dirty smoke into the air.

Knowledge Bank

The Earth, our home, is surrounded by a blanket of air. We call it the atmosphere.

Sum Up Now :

- Air is present all around us.
- Air contains dust, water vapour, smoke and germs.
- Air has weight and gives shape to things.
- Moving air is called wind.
- We must keep the air clean.

PRACTICE ZONE

(Assessment Of Learning Outcome)

A. Tick (✓) the correct answer :

1. Air is all _____ us.
   (i) behind ☐ (ii) around ☐ (iii) above ☐
2. Burning garbage makes air _____.
   (i) dirty ☐ (ii) clean ☐ (iii) clear ☐
3. _____ do not give out smoke.
   (i) Bicycle ☐ (ii) Cars ☐ (iii) trucks ☐
4. Moving air has a lot of _____.
   (i) force ☐ (ii) weight ☐ (iii) none of these ☐
5. Moving air is called :
   (i) rain ☐ (ii) wind ☐ (iii) storm ☐

B. Fill in the blanks with the given words :

Trees, breeze, Impure, garbage, dust

1. When wind blows gently, it is called _____ .
2. Air contains _____, water vapour, smoke and germs.
3. _____ air is not good for our health.
4. _____ keep the air clean.
5. We should never burn leaves and _____ .

C. Write 'T' for true and 'F' for false for the following :

1. We cannot feel air. ☐
2. Smoke and germs make the air dirty. ☐
3. Air occupies space but does not have weight. ☐
4. Wind can blow off dry leaves. ☐
5. We should plant more and more trees. ☐




D. Answer the following questions :

1. What do you mean by wind?

   _____

   _____

2. What is storm?

   _____

   _____

3. What does air contain?

   _____

   _____

4. Name the things which can make the air dirty.

   _____

   _____

5. What should we do to keep the air clean?

   _____

   _____

Critical Thinking

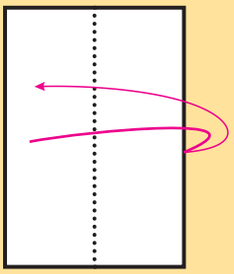
- Nisha's mother keeps the windows and doors of her house open in the morning. Is it good or bad? Why?

Creativity Zone

Physical Media Development (PMD)

- Follow the steps shown in the pictures below to make a plane from a waste paper.

1



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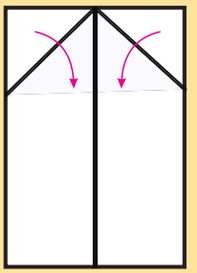

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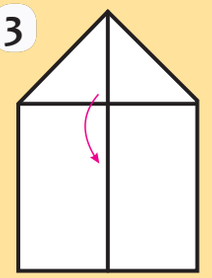

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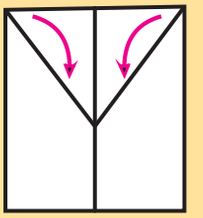

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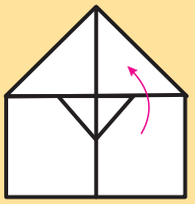

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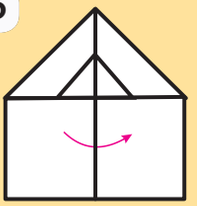

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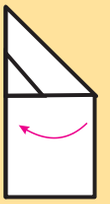

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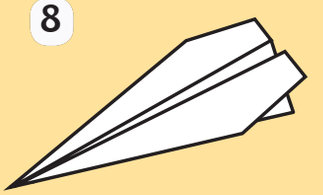
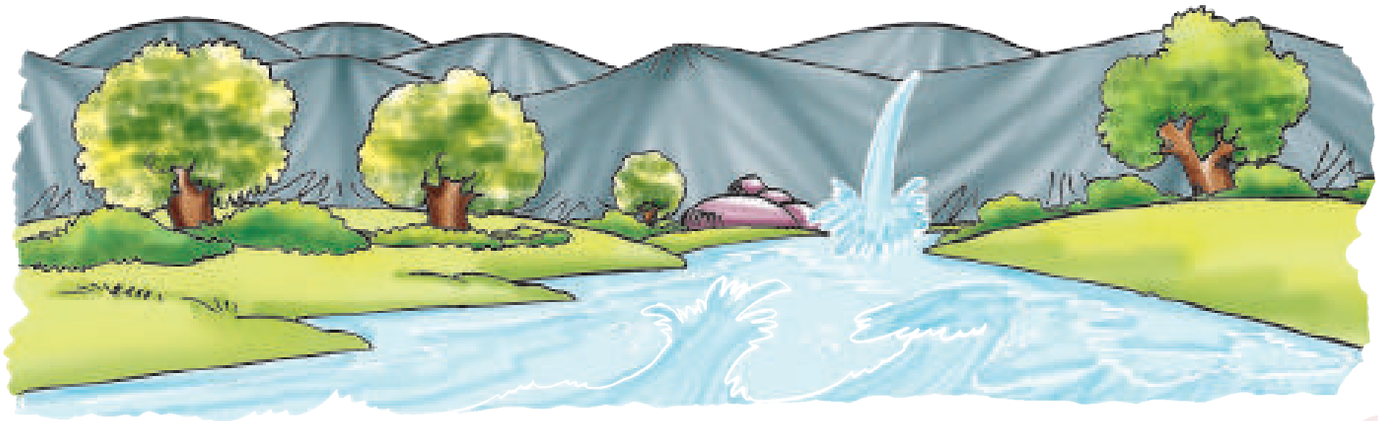


- Solve the sum in the image below and colour according to the codes :
  35-Green, 70- Yellow, 46-Purple, 14-Blue 28-Pink, 13-Drange, 29-Red

9 WATER EVERYWHERE

Stepping Up

- Sources of Water
- Uses of Water
- Save water



Water is the most essential element to life on earth. No living being can live without water. We need water for drinking, cooking, bathing, washing and cleaning. Plants also need water to grow.

Drinking

Cooking

Bathing

Washing

Cleaning

Plants need water

Sources of Water

Rain is the main source of water. When rain falls on the earth, this water collects in **lakes, ponds, streams** and **rivers**. Some rainwater goes deep under the ground. This water is called **groundwater**.

Lake

Pond

Stream

Groundwater is drawn out with the help of handpumps and wells. In cities, water is supplied in homes through taps.

Well

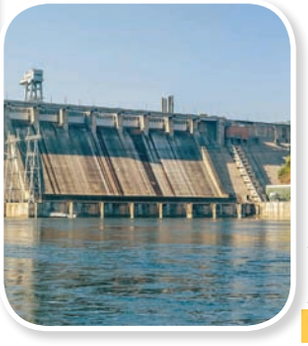
Handpump

Tap

Uses of Water

We use water in our houses for drinking, cooking, cleaning, washing and many other activities.

- Farmers need water to grow crops.
- Water is used in factories to make various things.
- We travel and transport goods to far off places on ships that sail on water.
- Water is used to generate electricity.
- Water is the habitat for a large number of plants and animals.



Knowledge Bank

Water is used by fire fighters to put off fire.

Check Yourself (Focused Attention Based)

Match Column A with Column B :

	Column A		Column B
1.	Surface water	(a)	Taps
2.	Ground water	(b)	Rain
3.	Cities	(c)	Ponds
4.	Main source of water	(d)	Wells

Drinking Water

Water we get from different sources such as rainwater, rivers, lakes and ponds may contain dirt, dust and germs. Using this water directly for drinking would make us fall sick. Typhoid, cholera and dysentery are some diseases spread by drinking dirty water.

There are various methods by which we remove germs from water.

- Boiling water kills the germs that might be present in it, thus making it safe for drinking.
- People keep water filters or purifiers at home. These are the machines that filter or clean water.
- It is important to store drinking water in clean containers that have lids.

Save Water

We can save water in the following ways :

- get the leaking taps repaired
- close the tap while brushing teeth or applying soap on the hands
- avoid bathing in showers. Use buckets and mugs.



- Collect and store rainwater in tanks, drums, buckets, bottles etc. to use later.
- Reuse water whenever possible.

Sum Up Now :

- The presence of water on Earth makes it possible for living things to live and grow.
- All living things—plants, animals and human beings need water.
- Rain is the main source of water on Earth.
- We should boil or filter water before drinking.
- We should not waste water.
- It is important to keep the water bodies clean.

PRACTICE ZONE (Assessment Of Learning Outcome)

A. Tick (✓) the correct answer :

1. Plants need water to :

(i) grow ☐ (ii) wash ☐ (iii) none of these ☐

2. We get water from different:

(i) rain ☐ (ii) sources ☐ (iii) both of these ☐

3. We should drink _____ water.

(i) clean ☐ (ii) dirty ☐ (iii) impure ☐

4. The disease typhoid is caused by drinking _____.

(i) dirty water ☐ (ii) pure water ☐ (iii) none of these ☐

5. The main source of water is _____.

(i) pond ☐ (ii) rain ☐ (iii) sea ☐

B. Fill in the blanks with the given words :

Water, sick, clean, Farmer, habitat

1. Drinking dirty water can make us _____ .
2. Water is the _____ for a large number of plants and animals.
3. _____ is used to make electricity.
4. _____ needs water to grow crops.
5. It is important to keep the water bodies _____.

C. Circle the odd one out :

1.	bathing	cleaning	cooking	running
2.	river	lake	stream	well
3.	tube well	pond	lake	river
4.	plants	animals	furniture	human being

D. Answer the following questions :

1. Why do we need water?

_____

_____

2. List any two uses of water.

_____

_____

3. How can we save water? Give two ways.

_____

_____

4. Why should we boil water before drinking?

_____

_____

- While coming back home from school, Rohan drank water from a roadside vendor. He got typhoid. Can you tell what went wrong with Rohan?

Activity Zone

Physical Media Development (PMD)

- Take two potted plants. Name one 'A' and the other 'B'. Water pot 'A' everyday. Do not water pot 'B'. Observe what happens?
- Match the pictures with their names :

1. 
   (a) River
2. 
   (b) Well
3. 
   (c) Lake
4. 
   (d) Hand pump

10 FORMS OF WATER

Stepping Up

Forms of Water Water Changes its Forms Water Cycle

Pure water is tasteless, odourless and colourless.

Ice (solid)

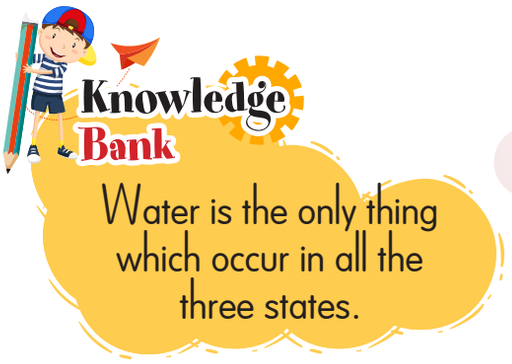
Water (liquid)

Steam (gas)

Forms of Water

Water exist in three forms. These are

- Solid : Ice is the solid form of water. Water changes into ice on cooling.
- Liquid: Ice melts to form water on heating.
- Gas : Water changes into vapour on heating.



Water Changes its Forms

Let us see how water changes its form. Water on heating changes into steam or water vapour. This is called **evaporation**.

Let's Understand with an Example

Take some water in a pan and ask an adult to boil it for you. You can see the steam or vapour coming out of the pan. This is the **gaseous form** of water and the process is called **evaporation**.

Water vapour on cooling changes into water again.

Now, hold a plate near the mouth of the pan. When the vapour touches the cold plate, it cools downs and changes back to drops of water. This change of vapour into water on cooling is called **condensation**.

Ice is the **solid** form of water. It has a definite shape and it does not flow like liquids. Water usually found in its natural state is **liquid**.

Take water in an ice tray and keep it in the freezer. After some time, we can see that water changes into the solid form that is **ice**. The change of water into ice on cooling is called **freezing**.

Now, keep these ice cubes outside for some time. It is warm outside so the ice cubes slowly melt and change into water. The change of ice (solid) into water (liquid) on heating is called **melting**.

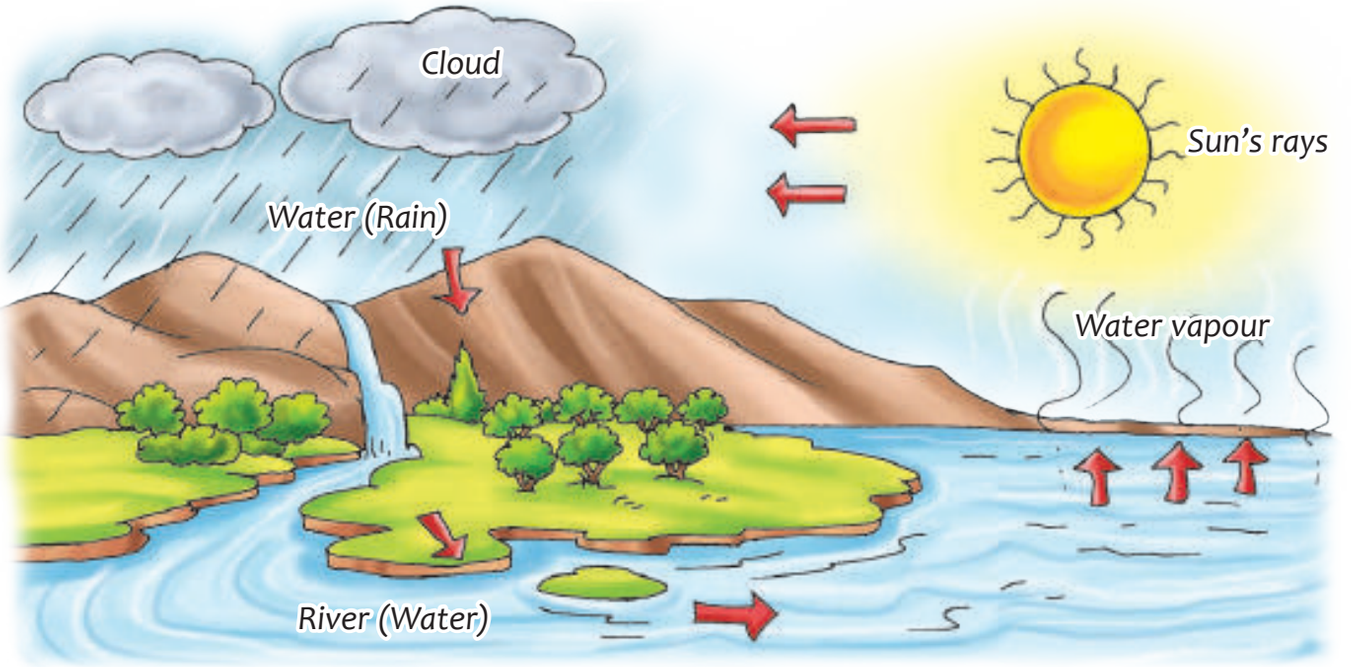
Check Yourself (Focused Attention Based)

Write the correct words in the boxes :

1. Ice —on heating→ [ ] —on further heating→ [ ]
2. Steam —on cooling→ [ ] —on further cooling→ [ ]

WATER CYCLE

The sun heats the water in rivers, lakes, ponds and seas. This changes water into water vapour. Water vapour rises up in the air and turns into tiny droplets of water. These droplets of water form clouds. When the clouds become heavy, they fall down as rain. This water again flows into rivers, ponds, lakes, etc.



Water Cycle

Knowledge Bank Ten percent of the Earth's surface is covered by ice.

Sum Up Now :

- Water has three forms–ice (solid), water (liquid) and steam or water vapour (gas).
- On heating, water changes into vapour. It is called evaporation.
- On cooling, water vapour changes into water. It is called condensation.
- Ice on heating changes into water. It is called melting.
- Water on cooling changes into ice. It is called freezing.
- Evaporation of water from the sources of water on earth due to heat of the sun and then coming back to earth in the form of rain is called water cycle.

PRACTICE ZONE (Assessment Of Learning Outcome)

A. Tick (✓) the correct answer :

1. Water is present in _____ forms.

(i) three ☐ (ii) four ☐ (iii) five ☐

2. Clouds bring us _____.

(i) rain ☐ (ii) stones ☐ (iii) vapours ☐

3. Steam is also called _____.

(i) water ☐ (ii) water vapour ☐ (iii) none of these ☐

4. The change of water into water vapour on heating is called _____.

(i) condensation ☐ (ii) evaporation ☐ (iii) none of these ☐

5. The process of conversion of ice into water is called _____.

(i) melting ☐ (ii) water cycle ☐ (iii) freezing ☐

B. Fill in the blanks with the given words :

water vapour, ice, steam, colourless, gaseous

1. Water is _____.
2. In solid form, water exists as _____.
3. When water is heated above 100°C, it changes into _____.
4. Water on heating changes into _____ .
5. Water vapour is the _____ form of water.

C. Write 'T' for true and 'F' for false for the following :

1. Water is odourless. ☐
2. The moon heats the water in rivers. ☐
3. Water on cooling forms water vapour. ☐
4. Water is present on earth in five forms. ☐
5. Water cycle goes on in nature. ☐

D. Answer the following questions :

1. Write the three forms of water.

_____

_____

2. What do you mean by freezing?

_____

_____

3. How are clouds formed?

_____

_____

4. What is condensation?

_____

_____

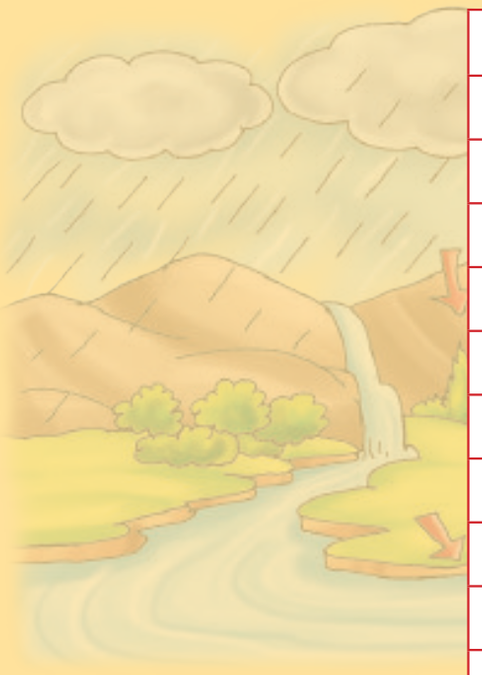
- Mother puts a tray full of water in the freezer. After an hour the water will change into :

  1. ice 2. ice-cream

Activity Zone

Physical Media Development (PMD)

- In the word search grid, find and circle six words related to the water cycle.



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

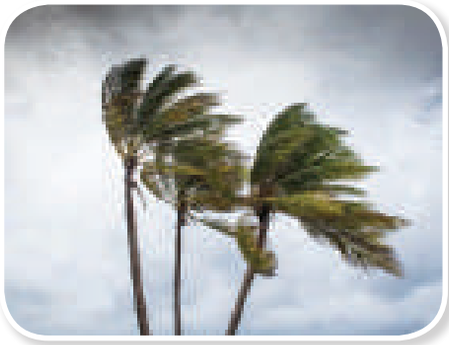
11 WHAT'S THE WEATHER?

Stepping Up

- Wind Direction
- Rain and Snow
- Sunshine
- Cloud

Weather changes from day to day. It may be sunny, windy, cloudy, rainy etc. The change in weather is caused by the sun, wind, clouds and rain.

Sunny



Windy

Rainy

Cloudburst is a sudden, heavy rainfall for a short duration.

Wind Direction

The **direction of the wind** plays a big role in what kind of weather conditions an area has.

North, south, east and west are the four main directions.

Wind Force or Speed

We know that moving air is called **wind**. Wind can be gentle, strong or very strong.

When wind blows gently, we call it breezy weather. Strong winds blow on a **windy day**. Very strong winds cause **stormy weather**.

Rain and Snow

Remember, when water gets heated, it changes into gas or steam. What happens when water in rivers and other water bodies get heated by the Sun? It rises up to the sky as steam or water vapour. These form clouds. When clouds become heavy with water droplets, we get **rain** or **snow**. Such factors make a day rainy or snowy.

Sunshine

Early morning, people like to sit in the garden or balcony. During this time of the day, the sunshine is weak and the weather is pleasant outside. At about mid-day, the sunshine becomes stronger and the weather outside starts warming up.

So, sunshine affect the weather during the day.

Check Yourself

Do you see or feel the early morning weather? Write few lines about it.

Cloud

Clouds affect the **weather**. Very high white clouds are thin and the Sun shines through them. The day is bright. When layers of clouds cover the sky, the day becomes dull.

Sum up Now :

- Terms such as hot, cold, sunny, cloudy, windy, rainy and snowy are used to define weather.
- Some factors that affect weather are : Wind direction, wind force or speed, rain and snow, sunshine clouds and temperature.

Practice Zone

(Assessment Of Learning Outcome)

A. Tick (✓) the correct answer :

1. _____ changes from day to day.
   (i) Rain ☐ (ii) Weather ☐ (iii) Wind ☐
2. Very strong winds cause :
   (i) stormy weather ☐ (ii) windy ☐ (iii) breeze ☐
3. Sunshine affect the weather during the :
   (i) day ☐ (ii) night ☐ (iii) both of these ☐
4. When clouds becomes heavy, they bring _____ .
   (i) wind ☐ (ii) rain ☐ (iii) storm ☐

B. Fill in the blanks with the given words :

gentle, wind, Weather, Clouds, clouds

1. _____ changes very frequently.

2. Wind can be _____, strong or very strong.
3. Moving air is called _____.
4. _____ affect the weather.
5. When layers of _____ cover the sky, the day becomes dull.

C. Write 'T' for true and 'F' for false for the following :

1. Weather stays same for a long time.
2. The direction of the wind does not affect weather.
3. Sun and wind affect the weather.
4. We have four main directions.
5. Gentle wind causes breezy weather.




D. Answer the following questions :

1. What do you mean by weather?

_____

_____

2. What is the role of direction of wind?

_____

_____

3. How do sunshine affect weather?

_____

_____

4. How does rain comes?

_____

_____

- It is the rainy season. However, it is not raining when you are off to school. Would you carry an umbrella or raincoat? Why/Why not?

Activity Zone

- Spot and circle the names of five things that affect the weather and write in the given box :

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

12 ROCKS AND MINERALS

Stepping Up

- Rocks
- Minerals

We see many different items made by rocks and minerals in our daily life. Rocks and minerals are building blocks of our dynamic planet .

Rocks

Earth is mostly made up of different kinds of rocks. The mountains, hills and valleys are made up of rocks. Rocks are also found under rivers and sea beds. Pebbles, stones, sand and soils are made up of rocks.

Sea beds

Pebbles

Sand

The scientific study of rocks is called petrology.

Types of Rocks

Rocks are of many types. The table below gives us information on different types of rocks.

Rock	Features	Use
Granite 	Hard rock; comes in different colours such as pink, white, grey and black.	To make floor tiles and kitchen slabs.
Sandstone 	Hard rock; most common colour are red, pink, brown, white, and black.	To make buildings, tiles and roads; Hawa Mahal in Rajasthan is made of sandstone.
Marble 	Hard rock; comes in light colours.	To make buildings, statues and floors; Taj Mahal, one of the Seven Wonders of the World is made of white marble; The Lotus Temple in Delhi is another beautiful marble structure.
Coal 	Soft, black rock	Used as a fuel for cooking, for making electricity and in factories.
Chalk 	Soft, white rock	Chalk is used to paint walls and building and to write on blackboards.
Slate 	Soft, mostly grey and black	To make roofs, floors of houses, slates and blackboards.

Check Yourself (Critical Thinking)

Underline the correct answer :

1. Rocks are found (only in sea/at many places).
2. Marble is a (hard/soft) rock .
3. (Sandstone/marble) is a red rock.
4. The Taj Mahal is made up of (white/grey) rock.

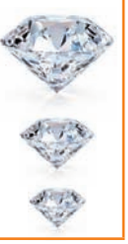
Minerals

The rocks we see around us are made of minerals. A rock is made up of two or more minerals.

Let us think of a chocolate biscuit as a rock. The biscuit is made of wheat or flour, butter, sugar and chocolate. So, we can say that the biscuit is like a rock and the wheat, butter, sugar and chocolate are like minerals. We need minerals to make rocks.

Types of Minerals

Minerals are of different shapes, size and colours. Different minerals have different uses. Look at the table below to know more about minerals.

Mineral	Features	Use
Quartz	Most common mineral found in rocks, it has a glassy shine.	In watches. 
Talc	The softest mineral	In talcum powder and baby powder. 
Diamond	It is the hardest mineral.	To cut softer rocks and minerals and another diamond. It is also used in making beautiful jewellery. 

Gemstones—emerald, ruby, sapphire and pearl	Hard	They are of great value when cut and polished and used to make jewellery. 
Graphite	Soft, black or grey	It is used as the lead of a pencil. 
Clay	Soft	Clay is used for making pottery, bricks, walls. 

Sum Up Now :

- The Earth is made up of rocks and minerals.
- The rocks we see around us are all made of minerals.
- Minerals are of different shapes, sizes and colours.
- Rocks and minerals have various uses.

PRACTICE ZONE

(Assessment Of Learning Outcome)

A. Tick (✓) the correct answer :

1. Slate is used to make :
   (i) kitchen slabs ☐ (ii) blackboards ☐ (iii) statues ☐
2. Earth is mostly made up of different kinds of :
   (i) minerals ☐ (ii) rocks ☐ (iii) stones ☐
3. Which of these is not a gemstone?
   (i) quartz ☐ (ii) ruby ☐ (iii) none of these ☐
4. _____ is soft black rock.
   (i) Coal ☐ (ii) Marble ☐ (iii) Slate ☐
5. Clay is :
   (i) soft ☐ (ii) hard ☐ (iii) none of these ☐

B. Fill in the blanks with the given words :

Granite, Talc, Diamond, Clay, minerals

1. A rock is made up of two or more _____.
2. _____ is the hardest mineral.
3. _____ comes in different colours.
4. _____ is the softest mineral.
5. _____ is used for making pottery, bricks and walls.

C. Match the following columns :

Column 'A'	Column 'B'
1. Coal and slate	(a) Red fort
2. Red sandstone	(b) Sculpture
3. Taj Mahal	(c) Soft rocks
4. China clay	(d) White marble

D. Answer the following questions :

1. Where do we find rocks?

_____

_____

2. What are rocks made of ?

_____

_____

3. Write two uses of diamonds.

_____

_____

4. What are the uses of coal?

_____

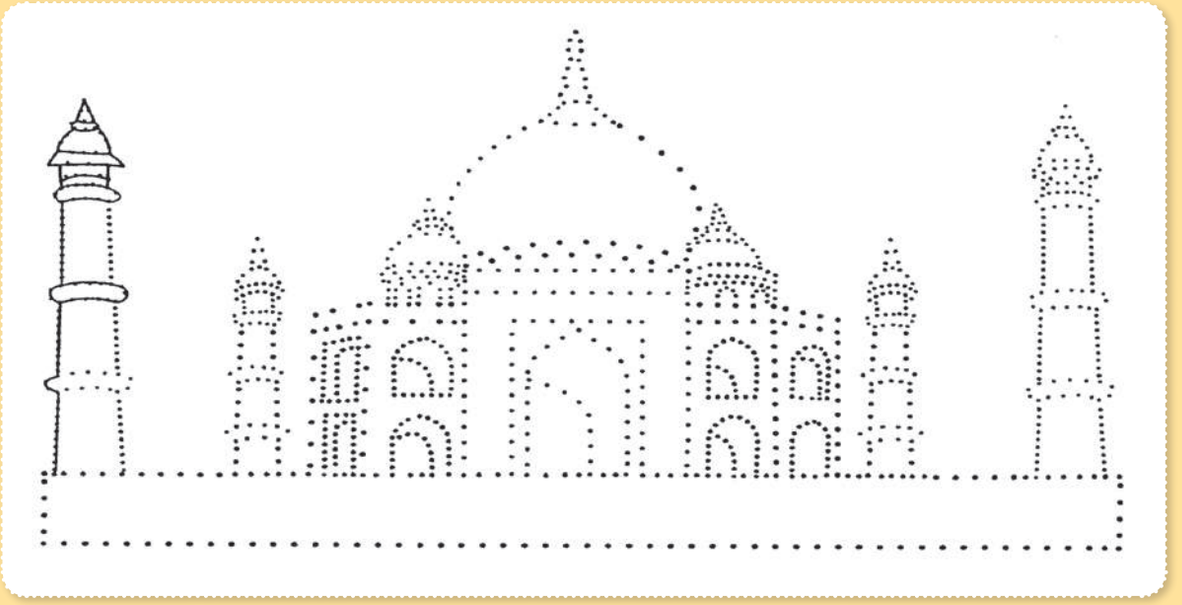
_____

- Tara's mother wants to make some jewellery. Which mineral she may use? Also, say why?
  1. talc
  2. sapphire

Activity Zone

Physical Media Development (PMD)

- Join dots to complete the picture and write the name of the monument. Write a few lines about it in the space provided and colour it.



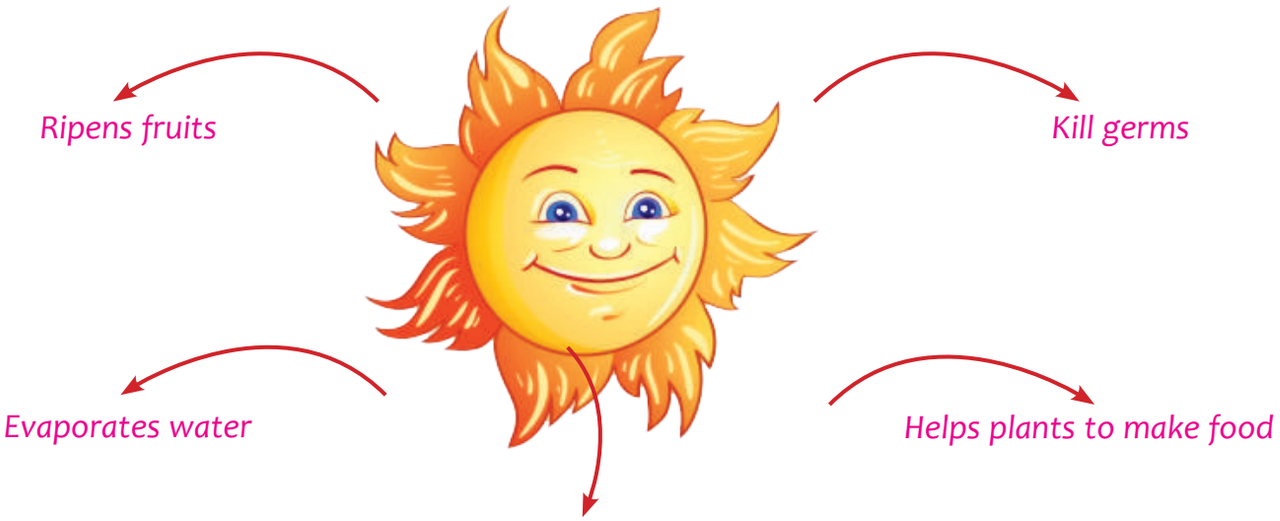
13 THE SUN, LIGHT AND SHADOWS

Stepping Up

- The Sun
- Light and Shadow

THE SUN

Sun is a star that we can see during the daytime. The sun is a big ball of fire. It is very big but it looks small because it is very far away from us.



The sun rises in the east and sets in the west. The sun is very useful to us in many ways :

- The sun gives us heat and light.
- The sun makes the day warm and bright.
- The heat of the sun helps to ripen fruits.

- The heat of the sun dries wet clothes.
- Plants prepare food with the help of sunlight.

The moon and the stars are always in the sky but due to the light of the sun we cannot see them during daytime.

Check Yourself (Focused Attention Based)

1. Sun is a hot ball of _____.
2. _____ kills the germs present on the earth.
3. The sun rises in the _____.

Light and Shadow

Light cannot pass through all objects. It cannot pass through your books, bags, etc. A shadow is formed when something comes in the path of light.

Thus, three things are needed for a shadow to form :

- Object (example tree)
- Source of light (Sun)
- A surface (ground)

In the **morning** and in the **evening**, the shadows are **long** as the sun is low in the sky.

At noon, the **sun** is overhead, so the shadow is the **shortest**.

A shadow is always formed in the direction opposite to the source of light.

Morning shadow

Noon shadow

Evening shadow

If the light is falling on an object from the left side, the shadow is formed on the right side of the object.

If the light is falling on an object from the right side, the shadow will be formed on the left side of the object.

Make Teaching Fun

Help the students to focus light on different objects to observe their shadows. Explain how the size of shadow changes with changing positions of the object.

Sum Up Now :

- The Sun is a big ball of fire.
- It gives us heat and light.
- It makes the day bright and warm.
- At night, there is no sun so, it is cool and dark.
- When the path of light is blocked by an object, a shadow is formed of the object.
- Shadows are longer in the morning and in the evening.
- Shadows are the shortest at noon.
- Shadows are formed in the direction opposite to the source of light.

PRACTICE ZONE

(Assessment Of Learning Outcome)

A. Tick (✓) the correct answer :

1. Plants prepare food with the help of :
   (i) sunlight ☐ (ii) air ☐ (iii) wind ☐
2. The sun is a big ball of :
   (i) water ☐ (ii) fire ☐ (iii) sand ☐
3. In which direction, does the sun set?
   (i) East ☐ (ii) West ☐ (iii) North ☐
4. The shadow is shortest at :
   (i) noon ☐ (ii) morning ☐ (iii) evening ☐
5. If the light is coming from the left, shadow will be formed :
   (i) left direction ☐ (ii) right direction ☐ (iii) none of these ☐

B. Fill in the blanks with the given words :

shadow, long, Light, sun, light, heat

1. The sun gives us _____ and _____ .
2. _____ cannot pass through all objects.
3. When a body blocks the light, a _____ is formed.
4. Shadows are _____ in the morning and evening.
5. The heat of the _____ dries wet clothes.

C. Write 'T' for true and 'F' for false for the following :

1. The sun looks small because it is very close to our earth. ☐
2. The Moon helps the plants to make their food. ☐
3. In the morning and evening the sun is low in the sky. ☐
4. At night, there is no sun, so it is cool and dark. ☐
5. Our shadows always move with us. ☐

D. Answer the following questions :

1. Write a short note on 'The Sun'.

_____

_____

2. Why is the sun useful to us?

_____

_____

3. What is a shadow?

_____

_____

4. Name the three things that are needed for a shadow to form.

_____

_____

Critical Thinking

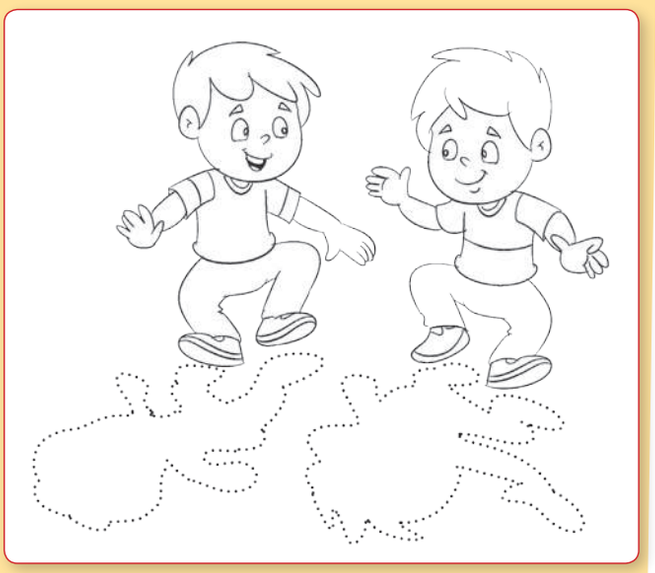
- Neena planted a sapling in a pot containing moist soil. She placed that pot in the dark. She watered the plant daily but it did not grow. Why did the plant not grow?

Activity Zone

Physical Media Development (PMD)

- Colour both the boys and their shadows.

  Note : Colour the shadows black.



14 THINGS WE USE

Stepping Up

- Natural Things We Use
- Human-made Things We Use

We use many things in our day-to-day life.




In this chapter, learn about some things we use and what they are made of.

NATURAL THINGS WE USE

Wood

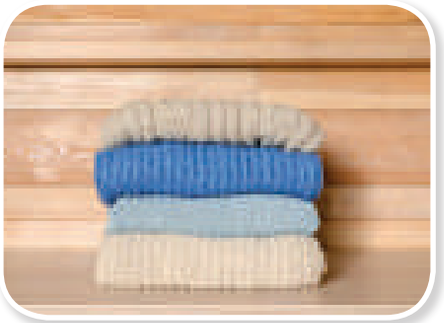
Wood is a natural thing. We get wood from trees.

Wood is **strong** and **long-lasting**. It is used to make furniture such as chairs, beds, study tables, dining tables and cupboards.


Some fabrics, such as polyester and nylon are made from synthetic fibres or human-made fibres. These are made in factories.

Fabrics

We wear different clothes in different seasons. Clothes are made of different fabrics, such as cotton, wool and silk. Fabrics are made from thin fibres woven together.


We get these fabrics from plants and animals and are **natural fabrics**.

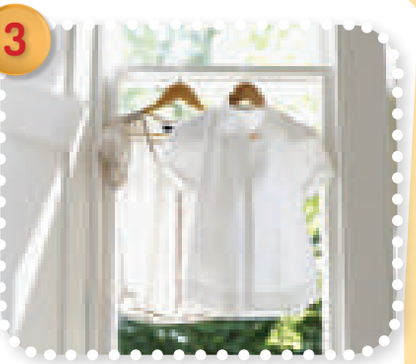
Check Yourself

PHYSICAL MEDIA DEVELOPMENT (PMD)

Write the correct letters to say what each thing is made of :

1


2


3


4


5


(a) Glass

(b) Wood

(c) Plastic

(d) Cotton

(e) Wool

In summer, we wear cotton clothes. We get cotton from the cotton plant.

In winter, we wear woollen clothes. We get wool from sheep, camels and yaks.

We wear silk clothes in winter and also on special occasions such as festivals and birthdays. We get silk from the silkworm.

Other things such as handkerchiefs, towels, napkins, bedsheets, pillow covers and cushion covers are also made of different fabrics.

HUMAN MADE THIGNS WE USE

Glass

We use things made of glass such as drinking glasses, plates and bowls. Windows, spectacles and looking glasses are also made of glass.

Glass is made by melting sand and minerals together at very high temperature. It can be made into many different shapes. Thick glass is strong, but thin glass breaks easily.

Plastic

Plastic is not found in nature. They are human-made things.

Plastic is strong and can be given different shapes. Plastic can also be dyed in different colours. They are used to make all sort of things such as pencil boxes, bottles and toys.

Plastic is waterproof. It is used to make raincoats that protect us from getting wet in the rain. Plastic gumboots helps us to walk on wet and muddy water.

Sum Up Now :

- We use different things in our day-to-day life.
- Things around us can be natural or human-made.
- Things are made of wood, glass, fabric and plastic.

PRACTICE ZONE (Assessment Of Learning Outcome)

A. Tick (✓) the correct answer :

1. It is made of plastic :
   (i) food ☐ (ii) plates ☐ (iii) both of these ☐
2. It is a natural thing :
   (i) plastic ☐ (ii) wood ☐ (iii) glass ☐
3. It is made of glass :
   (i) mirror ☐ (ii) shoes ☐ (iii) none of these ☐
4. This is not true about silk :
   (i) made by silkworms ☐
   (ii) human-made fibre ☐
   (iii) none of these ☐
5. It is made of wood :
   (i) car ☐ (ii) chair ☐ (iii) bucket ☐

B. Fill in the blanks with the given words :

things, natural, Plastic, fibres, glass

1. Wood is a _____ thing.
2. _____ is used to make things such as pencil boxes, bottles and toys.
3. Cotton, wool and silk are natural _____.
4. We use many _____ in our day-to-day life.

5. _____ is made by melting sand and other minerals together at very high temperature.

C. Match the following columns :

Column 'A'	Column 'B'
1. plastic	(a) towels, bedsheets and napkins
2. cotton, wool, silk	(b) furniture
3. wood	(c) breaks easily
4. thin glass	(d) waterproof
5. made from fabrics	(e) natural fibres

D. Answer the following questions :

1. What is plastic?

_____

_____

2. What are clothes made of?

_____

_____

3. Is wood a natural thing? Where do we get wood from?

_____

_____

4. How is glass made? Name two things made of glass.

_____

_____

- Payal's birthday falls in the month of December. She is buying her birthday dress. Which fabric should she choose?

Activity Zone

- Look inside your house. Complete the table :

Room	Things made of plastic	Things made of glass	Things made of fabric	Things made of wood
Dining room				
Drawing room				
Kitchen				
Bathroom				
Bedroom				

- Match the following :

1. 
2. 
3. 
4. 

(a) Wool

(b) Silk

(c) Furniture

(d) Plate

Model Test Paper-1

(Based on Chapter 1 to 7)

Time : 2 hours ***M.M. : 40***

A. Tick (✓) the correct answer :

1. Which plant grow in desert?
   (i) cactus ☐ (ii) lotus ☐ (iii) grapevine ☐
2. This is obtained from the juice of the acacia tree :
   (i) gum ☐ (ii) rubber ☐ (iii) oil ☐
3. _____ is a farm product.
   (i) Milk ☐ (ii) Books ☐ (iii) Pencil ☐
4. The brain is located in the _____ .
   (i) skull ☐ (ii) liver ☐ (iii) kidney ☐
5. A daily pattern of eating and drinking is called _____ .
   (i) food ☐ (ii) diet ☐ (iii) both ☐

B. Fill in the blanks :

1. We must drink plenty of _____.
2. We should not go alone into a _____.
3. _____ and _____ are called by biennial plant.
4. Cocoa beans are crushed to make _____.
5. A _____ guards our house.

C. Write 'T' for true and 'F' for false for the following :

1. Cereals and pulses are known as food grains. ☐
2. Earthworm helps to make the soil fertile. ☐
3. Muscles are hard and stiff. ☐
4. We should never skip breakfast. ☐
5. Never run after a vehicle when on a road. ☐

D. Name any two :

1. Herbivorous Animals _____ _____
2. Carnivorous Animals _____ _____
3. Omnivorous Animals _____ _____

E. Match the following columns :

Column 'A'		Column 'B'
1. leaves	(a)	spice
2. beans	(b)	oil
3. mustard	(c)	ginger
4. coriander	(d)	tea
5. stem	(e)	coffee

F. Answer the following questions :

1. What are the aquatic plants?

2. Where do we get tea and coffee from?

3. What do you mean by pet animals ?

4. What are the three categories of animals?

5. Why is physical exercise important?

6. List any two safety rules to be followed on the road.

Model Test Paper-2

(Based on Chapter 8 to 14)

Time : 2 hours **M.M. : 40**

A. Tick (✓) the correct answer :

1. Moving air has a lot of _____.
   (i) force ☐ (ii) weight ☐ (iii) none of these ☐
2. The disease typhoid is caused by drinking _____.
   (i) dirty water ☐ (ii) pure water ☐ (iii) none of these ☐
3. The change of water into water vapour on heating is called _____.
   (i) condensation ☐ (ii) evaporation ☐ (iii) none of these ☐
4. When cloud becomes heavy, they bring _____.
   (i) wind ☐ (ii) rain ☐ (iii) storm ☐
5. _____ is soft black rock.
   (i) Coal ☐ (ii) Marble ☐ (iii) Slate ☐

B. Fill in the blanks :

1. When a body blocks the light, a _____ in formed.
2. We use many _____ in our day-to-day life.
3. It is important to keep the water bodies _____.
4. _____ air is not good for our health.
5. Water on heating changes into _____.

C. Write 'T' for true and 'F' for false for the following :

1. Sun and wind affect the weather. ☐
2. The moon helps the plants to make their food. ☐
3. Water cycle goes on in nature. ☐
4. We have four main directions. ☐
5. Our shadows always move with us. ☐

D. Circle the odd one out :

1.	bathing	cleaning	cooking	running
2.	river	lake	stream	well

3. tube well | pond | lake | river

4. plants | animals | furniture | human being

E. Match the following columns :

Column 'A'		Column 'B'
1. plastic	(a)	towels, bed sheets and napkins
2. cotton, wool, silk	(b)	furniture
3. wood	(c)	breaks easily
4. thin glass	(d)	waterproof
5. made from fabrics	(e)	natural fibres

F. Answer the following questions :

1. What does air contain?

2. Why should we boil water before drinking?

3. How to sunshine after weather?

4. What are the uses of coal?

5. Name the three things that are needed for a shadow to form.

6. What are clothes made of?