

## Learning Express -- Exploring Science – Class - 1

### **Chapter-1:**

**A.** 1. Things which have life are living things.

**Ex.** 1. Birds, 2. Animals.

2. Things which do not have life are non-living things. **Ex.** 1. car, 2. Computer

3. The Sun, Water.

4. Pencil, Rubber

**B.** 1. Living things 2. Natural things

#### **Think it over (HOTS)**

1. The Money plant climbs over the higher point with the help of the thread.

2. The Lotus

### **Chapter-2:**

**A.** 1. Big and small trees are called as plants.

**Ex.** Neem, Banyan.

2. The plants which creep on ground, grow and spread on ground are creepers. **Ex.** Cucumber, Watermelon.

3. The plants that grow in water are called aquatic plants. **Ex.** Lotus and water lily.

**B.** 1. Herbs are small and weak plants with thin stems.

2. Some plants have sharp thorns. They are thorny plants.

3. Because they have delicate and thin stems

#### **Think it over (HOTS)**

**1.** We can't get air, rains, fruit, flowers, vegetables etc.

**2.** Cactus does not need much water to grow.

### **Chapter-3:**

**A.** 1. The process of a plant grows up from a seed

from the soil is called as germination of a seed.

2. Root, stem, leaf, flower and fruit.

3. Roots help the plant for absorbing water available in the soil.

4. Stem helps the plant to stand erect and transporting water and food to different parts of the plant.

**B.** 1. In the presence of sunlight.

2. Coriander and cabbage 3. Cactus

**C.** 1. Walnut 2. seed 3. Flower 4. stem 5. Root

#### **Think it over (HOTS)**

1. As the roots grow at the point where the leaf starts it is helpful to the plant in absorbing the water in the soil speedily and completely.

### **Chapter-4:**

**A.** 1. Wheat, Rice, Maize, Peas and Beans.

2. Cardamom, clove, Black-pepper, Cumin seeds and Turmeric.

3. Carrot, Aram, Turnip

4. Cocoa beans provide coffee.

5. Groundnut plant, coconut plant, sunflower plant.

6. Mint, neem, amla.

**B.** 1. Mustard plant 2. Tea plant 3. Ginger

4. Cauliflower

#### **Think it over (HOTS)**

1. Though brinjal is a fruit we can have it only cooked. So we treat it as vegetable.

2. Tomato, carrot, onion, beet-root, keera-cucumber.

### **Chapter-5:**

**A.** 1. Camel, Cow, Buffalo

2. By using wings.

3. Animals that live in forests are wild animals.

**B.** 1. shark 2. Ox 3. Cuckoo

#### **Think it over (HOTS)**

1. Wild Animal 2. Tiger

## **Chapter-6:**

- A.** 1. Lizards live on walls and roofs.  
2. In sty. 3. In stable.  
4. Fruits and Nuts.  
5. Cock, buffalo, Ox and Camel are Herbivores.  
6. Cock, buffalo and ox are plant eating animals.  
7. Animals like mouse, cock and birds like pigeon and sparrow eat grains.  
8. Leopard, Tiger and Hyena.

### **Think it over (HOTS)**

1. Python 2. Lizard

## **Chapter-7:**

- A.** 1. Oxygen, Carbon-di-oxide  
2. Smoke coming out of cars pollute the air.  
3. To breathe oxygen in the air and grow.  
**B.** 1. Wind 2. Storm 3. As we need air for breathing.

### **Think it over (HOTS)**

1. Stale air consists of smoke, carbon-di-oxide which is harmful; to health if breathe. Blowing air is fresh.
2. We see it.

## **Chapter-8:**

- A.** 1. Plants need water to live and grow.  
2. Animals need water especially for drinking and also for bathing.  
3. We need water for thirst, bath, wash, cook and put out fire.  
4. No, water is essential like air to live.  
5. Rain, well, hand pump.  
**B.** 1. Tanks 2. clothes 3. food 4. water

### **Think it over (HOTS)**

1. I use it for drinking.
2. By building dams. By using water to the

necessity level.

3. By storing water in lakes and ponds.

## **Chapter-9:**

- A.** 1. Sunny, cold, rainy and winds.  
2. When sky is covered with clouds and occurs rain, that day is called as rainy day.  
3. By wearing woollen clothes with the help of heater or fire placement and having hot drinks like soup, coffee, tea.  
4. To keep the rooms cool in summer.  
5. To keep ourselves warm.

- B.** 1. Cotton clothes 2. Rain coats 3. Five seasons 4. Seven colours 5. Loo

### **Think it over (HOTS)**

1. Cotton clothes as they protect from heat and absorb sweat.
2. Because water goes out in way of sweat. So we drink more water in summer.

## **Chapter-10:**

- A.** 1. The Sun gives us heat, light and energy.  
2. Moon Phases.  
3. The sun is a star. It gives us heat, light and energy. It is very big and round like a hot ball of gases.  
**B.** 1. The sun and eight planets which wander in fixed orbits in the space are called solar system.

2. The earth

### **Think it over (HOTS)**

1. Because of the sunlight we cannot see the moon and stars in the day.
2. The moon is near to us.

## **Chapter-11:**

- A.** 1. Hand, leg, stomach and chest  
2. breathe

3. Get sense of taste

**B.** 1. catching sounds

2. 206 Bones

**F.** 1. skin - covers our body and protect internal

organs of our body.

2. Ears - We listen to sounds with ears

3. Nose - smell and breathe

4. Eyes - see

5. Tongue - taste

### **Think it over (HOTS)**

1. Yes. Skin has the sensing power of heat.

2. Nose

### **Chapter-12:**

**A.** 1. We feel tiredness when we don't take rest properly.

2. To free teeth from germs formed by food particles and keep clean.

3. To maintain good health.

4. Foot-Ball and Hockey.

5. To vacate dirt and germs.

**B.** 1. At 10 pm 2. At least 8 hours.

3. To keep them neat and clean.

### **Think it over (HOTS)**

Brain gets pain. Eyes get heat and organs act lazy. Total body feels uneasy.

### **Chapter-13:**

**A.** 1. To stay healthy and strong.

2. Water plays a major role in our digestion process.

3. Carrot, Tomato, apple, banana.

4. Rice, wheat, Maize, Jowar.

**B.** 1. Egg, meat, fish and pulses.

2. Fruits and vegetables.

3. Junk food

4. 1. Protective food 2. Body building food

3. Energy giving food

### **Think it over (HOTS)**

1. Muscle pains, nerves weakness.

2. Body-building food from meat, eggs.

### **Chapter-14:**

**A.** 1. Kutcha house, pucca house.

2. In the kitchen.

3. To protect ourselves from heat, cold, wind and rain.

**B.** 1. cotton clothes 2. woollen clothes

3. In Rainy season 4. We get wool from the fur of sheep.

### **Think it over (HOTS)**

1. To protect from falling rocks ever.

2. Angora goat, Eashmere goat.

### **Chapter-15:**

**A.** 1. In order to keep ourselves and others safe.

2. 1. Use footpath and keep left.

2. Cross the road only at the zebra crossing.

3. 1. Don't play with power equipments such as switches. 2. Don't play with sharp tools such as blades.

4. 1. Do not lean out of windows of a moving bus.

2. Do not board or get down from a moving bus.

5. Should stop and do not cross the road.

**B.** 1. No, we should not. 2. No, we should not.

3. We should not push others while climbing stairs.

4. We should not play with switches, plugs or sharp tools.

### **Think it over (HOTS)**

1. I call any elder to light a candle because I cannot manage the flames of fire and wax.

2. I stand on the footpath and follow the signals. Cross the road through zebra lines.

## Exploring Science – Class - 2

### **Chapter 1 :**

- A. 1. Living things move, feel, react, breathe, take food, grow and reproduce.  
2. Foot ball is a non-living thing. Because it do not have all the features of living things.  
3. Green plants make their own food with the help of water, air and sunlight.  
4. Animals need sense organs to search for food or to sense danger.
- B. 1. Stomata 2. Reproduction 3. Five  
4. Natural non-living things
- C. 1. fly 2. crawl 3. lungs 4. sense  
D 1. X 2. X 3. 3 4. X  
E. 1. ii 2. i 3. ii 4. i 5. iii

### **Chapter 2 :**

- A. 1. Trees contain hard woody stems called trunks.  
2. Herbs are very small plants. They live for very short period. So, they are also called seasonal plants.  
3. Shrubs are small bushy plants. They are not as tall as trees. Ex. Rose, Jasmine, Cotton plant etc.  
4. Coconut and Papaya are branchless trees.  
5. Plants like money plant, pea plant, grapevine have weak and soft stems. They need support to stand and grow.  
6. Creepers are plants with weak and soft stems. They spread on the ground as their fruits are very big. Ex. Cucumber, pumpkin, watermelon etc.
- B. 1. Rose 2. Brinjal 3. Cactus 4. Water  
C. 1. climber 2. branches 3. creeper 4. cactus 5. shrubs  
D. 1. 3 2. 3 3. X 4. X 5. 3  
E. 1. a 2. c 3. c 4. c 5. a  
F. 1. e 2. d 3. f 4. b 5. a 6.c

### **Chapter 3 :**

- A. 1. Plants help us in a number of ways. We get many things from plants.  
2. Fruits like mango, orange, banana and vegetables like brinjal, tomato, radish, carrot, cabbage etc are obtained from plants.  
3. Plants like Tulsi, neem, mint and eucalyptus are used for making medicines. So, they are called as medicinal plants.  
4. a) Gum is made from the latex of trees like keekar and Acacia.  
b) Paper is made from the pulp of trees like bamboo.  
c) We get rubber from the latex of rubber tree

- B. 1. Rose and Jasmine 2. Medicinal 3. gum  
4. bamboo 5. cotton  
C. 1. X 2. 3 3. 3 4. 3 5. 3  
D. 1. a, c 2. c  
E. 1. Tulsi 2. Jute 3. Tea 4. Acacia 5. Banyan  
F. 1. Teak, Neem 2. Coconut, Mustard  
3. Cotton, Jute 4. Tulsi, Neem  
5. Rice, Wheat 6. Tomato, brinjal  
G. 1. d 2. e 3. b 4. c 5. a

### **Chapter 4 :**

- A. 1. We tame some animals. These are called domestic animals.  
2. Cat and Dog are kept as pets in our homes.  
3. Skin of animals like buffalo, goat, etc. are used for making leather articles.  
4. We get silk from silkworms.
- B. 1. camel 2. Cow, Buffalo 3. Sheep  
C. 1. Honey 2. Camel 3. donkey 4. fish  
5. cow 6. sheep 7. silkworm  
D. 1. a 2. b 3. b 4. c  
E. 1. e 2. c 3. d 4. b 5. a

### **Chapter 5:**

- A. 1. There are some animals that feed on the flesh of dead and decaying animals. They help to maintain cleanliness of the forest. These are called Scavengers.  
Ex.: Jackel, Hyena, Vulture.  
2. Carnivores are flesh-eating animals. They hunt and kill small animals and eat their flesh.  
Ex. Wolf, leopard etc.  
3. Bear is an Omnivore as it eats both plants and animals.  
4. Fish and Sea-horse are aquatic animals.  
5. Animals that live both on land and in water are called amphibians.  
Ex. Frogs, tortoise etc.
- B. 1. sea-horse 2. Goat 3. Rat 4. Jackal 5. Tiger  
C. 1. herbivorous 2. fox 3. vulture 4. animals 5. plants 6. carnivores  
D. 1. X 2. X 3. X 4. 3 5. 3  
E. 1. b 2. c 3. d 4. c 5. c 6. b  
F. 1. e 2. c 3. b 4. a 5. f 6. d

### **Chapter 6 :**

- A. 1. Air contains gases like oxygen, carbon dioxide, nitrogen and dust particles.  
2. a) Air has weight. b) Air occupies space.

3. Fast moving air is called wind
  4. Plants make the air fresh and clean
- B. 1. Smoke 2. Air 3. Wind
- C. 1. Germs 2. Smoke 3. dust 4. plants
5. weight
- D. 1. 3 2. 3 3. X 4. X 5. 3
- E. 1. c 2. a 3. a
- F. 1. g 2. a 3. e 4. c 5. b 6. f 7. d

#### Chapter 7:

- A. 1. Water from all sources is not always safe for drinking because it may contain many impurities and germs.
2. In our home we use ground water / Municipal water.
3. Sea water is salty. So it is not used for drinking.
4. Filtered and boiled water is safe drinking
- B. 1. Wells 2. salty 3. Rain 4. Three-fourth
- C. 1. salty 2. Rain 3. germs 4. Filter and boil
5. Water treatment plant 6. well
- D. 1. 3 2. X 3. 3 4. X 5. X
- E. 1. b 2. a 3. c 4. d
- F. 1. b 2. a 3. d 4. e 5. c

#### Chapter 8 :

- A. 1. The warm atmosphere changes the solid ice cubes into water.
2. By cooling in a freezer, water changes into ice.
3. Water is always on the move in a never ending cycle. This is called water cycle.
4. a) The process of conversion of solid ice into water is called melting.
- b) The process of conversion of water into ice is called freezing.
- c) The process of conversion of water vapour into water is called condensation.
- B. 1. Condensation 2. Melting 3. Rain 4. Freezing
- C. 1. Solid 2. three 3. Vapour 4. Steam
- D. 1. b 2. a 3. a
- E. 1. d 2. a 3. b 4. c

#### Chapter 9 :

- A. 1. When an object comes in the way of light, it forms a shadow.
2. Sun is important for all things because -
- a) Sun gives us heat and light. b) Plants need sunlight to grow. c) The heat of the sun helps to ripen fruits. d) The sun facilitates water cycle in nature. e) The heat of the sun kills germs cause diseases.
3. Shadows are formed in a direction that is opposite

to the source of light.

4. In the morning and in the evening, shadows are longer because the rising sun and the setting sun are seen at a lower level in the sky.
5. Green plants make their own food in the presence of sunlight by taking in carbondioxide and leaving out oxygen.
6. At noon, the shadows are short because the sun is over our head.
- B. 1. East 2. Sun 3. In the dark
- C. 1. hot 2. light 3. shadow 4. west 5. opposite
6. sun
- D. 1. 3 2. X 3. 3 4. X 5. 3
- E. 1. d 2. d 3. a 4. b
- F. 1. c 2. d 3. a 4. b

#### Chapter 10 :

- A. 1. A small model of the earth is called Globe.
2. The layer of air surrounding the earth is called atmosphere.
3. The places which are covered with sand are called deserts.
4. Air, water and land are necessary to all living creatures to exist on the earth.
5. a) Soil has different sizes and colours.
- b) Soil has water.
- c) Soil has air too.
- B. 1. Globe 2. on earth 3. round 4. on the beaches and in deserts
- C. 1. globe 2. home 3. protect 4. water
- D. 1. X 2. X 3. 3 4. X
- E. 1. d 2. c
- F. 1. b 2. a 3. d 4. c

#### Chapter 11 :

- A. 1. Our body is made up of bones and muscles.
2. Bones give shape and support to our body.
3. Every action we make is a result of the action of muscles.
4. Posture is the position in which we sit, stand, bend and walk.
5. We should always keep our body in a proper posture because a) it helps the bones to grow well. b) it makes our backbone strong. c) it makes our body fit and smart.
- B. 1. 206 2. Bones 3. Joints
- C. 1. bones and muscles 2. shape and support
3. heart 4. bend our shoulders
- D. 1. 3 2. 3 3. X 4. X
- E. 1. c 2. c 3. c

F. 1. e 2. c 3. d 4. b 5. f 6. a

### Chapter 12:

- A. 1. Rocks are the elements that are related to earth's crust.  
2. Granite, Marble and sand stone are three hard rocks.  
3. Coal, chalk made up of minerals.  
4. Diamond, sapphire and emerald gemstones are used in jewellery.
- B. 1. Graphite 2. Marble 3. Rocks 4. Chalk
- C. 1. rocks 2. hard 3. granite 4. hard 5. graphite
- D. 1. 3 2. X 3. 3 4. X 5. 3
- E. 1. c 2. b 3. c
- F. 1. c 2. d 3. b 4. a

### Chapter 13 :

- A. 1. Food is our basic need. Without food, we cannot survive for a long time.  
2. Sugar, rice and potato are the energy giving foods.  
3. Fruits, vegetables and nuts protect us from diseases.  
4. Healthy ways of eating. a) Wash your hands before and after eating meal. b) Always eat fresh and well cooked food.  
5. Pulses help us to grow and build our muscles. They make our teeth and bones strong.
- B. 1. Rice 2. Energy-giving foods 3. Protective foods 4. Dinner
- C. 1. Protective 2. Energy giving 3. cover 4. lunch
- D. 1. 3 2. 3 3. 3 4. X
- E. 1. iii 2. i 3. i
- F. 1. d 2. c 3. b 4. a

### Chapter 14:

- A. 1. A pucca house is made of steel, bricks and stone.  
2. Houses protect us from heat, cold, wind and rain. They also protect us from thieves and wild animals.  
3. Houses made of snow are called igloos. People living in polar areas live in igloos.  
4. Tent and house boat are examples of temporary houses.  
5. Caravan is house on wheels.
- B. 1. Skyscrapers 2. Nomads 3. Tent 4. Igloo
- C. 1. Igloo 2. house boat 3. skyscraper 4. tent
5. sloping - roof
- D. 1. X 2. X 3. X 4. X 5. X
- E. 1. c 2. a 3. a 4. c 5. b
- F. i. d ii. e iii. b iv. f v. a vi. c

### Chapter 15:

- A. 1. We should walk on the left side of the road.  
2. Before crossing the road, we should first look to our right, then to our left and then again to our right and cross the road only when it is clear.  
3. First aid is the help given to the injured before a doctor comes to take care of him.  
4. We should cross the road at the zebra crossing.
- B. 1. 'GO' 2. 'STOP' 3. 'WAIT'
- C. 1. footpath 2. zebra 3. traffic 4. ear
- D. 1. 3 2. X 3. X 4. 3
- E. 1. b 2. c

## Exploring Science – Class – 3

### Chapter 1 : Living and Non-living Things

- A. 1. Living things breathe, move, grow, feel, reproduce and need food.  
 2. Living things move from one place to another in search of food, water, shelter and also to protect themselves from enemies.  
 3. Non-living things cannot breathe, move, grow, feel or reproduce. They do not need food.  
 4.

Living Things	Non-Living Things
i. They can breathe.	i. They cannot breathe.
ii. They require food to grow.	ii. They do not require food.
iii. They have life cycle.	iii. They do not have life cycle.
iv. They show movement.	iv. They cannot move.
v. They can feel.	v. They cannot feel.
vi. They can reproduce	vi. They cannot reproduce.

5. Plants make their own food by using air, water and sunlight. This process is known as photosynthesis.  
 6. Human beings breathe in oxygen and breathe out carbon dioxide using nose, mouth and lungs.  
 B. 1. Photosynthesis is the process by which plants make their own food by using air, water and sunlight.  
 2. No, because it is a non-living thing.  
 3. Book, computer, clothes etc., are man made non-living things.  
 C. 1. Air 2. Sunlight 3. Stomata 4. food 5. eggs  
 6. sense organs  
 D. 1. 3 2. 5 3. 5 4. 5 5. 3  
 E. 1. b 2. c  
 F. 1. b 2. a 3. d 4. e 5. c

### Chapter 2 : Plants and Animals

A. 1.

Animals	Plants
i. Animals move from one place to another.	i. Plants cannot move from one place to another.
ii. Animals breathe in oxygen and breathe out carbon dioxide.	ii. Plants breathe in carbon dioxide and breathe out oxygen.
iii. Animals cannot prepare their own food.	iii. Plants prepare their own food.

Animals	Plants
iv. Animals can give birth to young ones.	iv. Plants cannot give birth to young ones.
v. Animals have many organ systems.	v. Plants do not have any organ system.
vi. Animals have sense organs.	vi. Plants do not have sense organs.

2. Animals move from one place to another in search of food, water and shelter. They also move to protect themselves from their enemies.  
 3. Photosynthesis is the process by which green plants use sunlight, water and carbon dioxide to produce their food.  
 4. Plants breathe in carbon dioxide from air and breathe out oxygen into the air through the stomata present under their leaves.  
 5. Animals produce their own kind by either giving birth to young ones or by laying eggs.  
 B. 1. Due to the presence of Chlorophyll.  
 2. Plants breathe in carbon dioxide.  
 3. Animals breathe out carbon dioxide from their lungs.  
 4. Fishes breathe through gills.  
 C. 1. Stomata 2. movement 3. food  
 4. breathing 5. plants  
 D. 1. 5 2. 3 3. 5 4. 3 5. 3  
 E. 1. a 2. b 3. c 4. d 5. a  
 F. 1. a 2. c 3. b

### Chapter 3 : Parts of Plants

- A. 1. Shoot is the part of a plant that grows above the ground.

2. There are two types of roots-tap root and fibrous root.

3. Plants like rice, wheat, grass have fibrous roots.

4. A green leaf needs water, carbon dioxide and sunlight to prepare food.

5. Plants like beet root, carrot and radish have taproots.

B. 1. Root holds the soil and prevent it from being washed away.

2. Hard, strong and woody stem is called trunk.

3. Potato, ginger and sugarcane stores extra food in their stems.

4. Cabbage stores food in its leaves.

5. Shoot grows upwards, towards the sunlight.

C. 1. root 2. upright 3. Lamina 4. fruits

D. 1. 3 2. 3 3. 5 4. 3

E. 1. a 2. d 3. d 4. d 5. b

F. 1. e 2. a 3. b 4. c 5. d

#### Chapter 4 : Food Habits of Animals

A. 1. Snakes and frogs swallow their food as a whole.

2. Animals which eat plants as well as flesh of other animals are called omnivores.

3. The cow and buffalo first swallow the food without chewing. After sometime, they bring the food back into the mouth from their stomach and begins to chew. This is called chewing the cud.

4. Carnivores have long pointed teeth called canines and strong grinding teeth called molars.

5. Herbivorous animals eat grass, small plants, twigs, branches of trees, fruits and vegetables.

6. a. Snakes and frogs swallow their food in one piece.

b. Mosquitoes, butterflies, honey bees and leeches suck their food.

B. 1. The sense of smell in dogs is very strong.

2. Donkey and camel are called beasts of burden.

3. a) Cow, goat, horse etc., are plant eating animals.

b) Tiger and lion are flesh eating animals.

4. Hyenas and Jackals are scavengers.

5. Animals need food for energy.

C. 1. tear 2. scavengers 3. food 4. leech

5. swallow

D. 1. 5 2. 3 3. 3 4. 5 5. 3 6. 3

E. 1. a, c 2. a 3. c

F. 1. e 2. d 3. c 4. b 5. a

#### Chapter 5 : Birds: Feathers and Nesting Habits

A. 1. Streamlined body, hallow bones, feathers attached with the wings and tail feathers help the birds to fly.

2. Birds have two kinds of feathers. They are down feather, flight feather.

3. Birds build nest when they have to lay eggs.

4. The penguin collects a few pebbles and stones to make its nest on the ground.

B. 1. Birds lay eggs to produce their young ones.

2. Feathers help birds to catch them in air to flight and to change its direction.

3. Penguins build their nests on the ground.

4. Hallow bones help the birds to float in air.

C. 1. Birds 2. hallow and light 3. wings 4. koel

D. 1. 5 2. 3 3. 5 4. 5

E. 1. (a),(b), (c) 2. (d) 3. (d)

F. 1. b 2. a 3. d 4. c 5. e

#### Chapter 6 : Birds : Beaks and claws

A. 1. Swallows have broad and short beaks which are sticky from inside. When Swallows keep their beaks open small insects and flies stick to the beak and the bird swallows them up.

2. Birds use their beaks to hold and eat their food.

3. Birds which hunt and eat other animals are called birds of prey. Ex. Eagle, Vulture.

4. Ducks catch insects, worms and water plants from the muddy water. The muddy water with mud flows out through the holes present in the beak of a duck and the food like insects, worms etc., are left inside the beak.

5. Birds use their feet to move, catch food and protect themselves from enemies and claws are used to judge the living habits of the birds.

6. Sparrow and crow are the two well known perching birds.

B. 1. Different birds have different beaks. Shaped and designed in such a way that they can eat food of their liking.

2. Curved beak of parrots helps them crack seeds, nuts and fruits. Also helps while climbing up the trees.

3. Sun birds have long and pointed beaks.

C. 1. water 2. chisel 3. scratching 4. beak

5. webbed

D. 1. 3 2. 3 3. 3 4. 5

E. 1. a 2. d

F. 1. d 2. e 3. c 4. b 5. a

#### Chapter 7 : Rocks, soil and Minerals

A. 1. Pebbles are smooth and round stones that are found in or near water.

2. Soil exist in three layers.

1. Top soil : The top soil is upper most layer. It is dark in colour.
  2. Sub soil : It lies below the top soil. It is light in colour.
  3. Bed rock : The bottom layer is made of solid rock called the bed rock.
  3. There are three types of rocks. They are Igneous rocks, Sedimentary rocks, Metamorphic rocks.
  4. Weather plays an important role in the process breaking up of rocks. Rocks get heated during day and cool down at night. This heating and cooling breaks down rocks into smaller pieces.
  5. Rocks formed due to the deposition of sand, clay and pebbles at the bottom of sea, river and other water bodies over thousands of years are called sedimentary rocks.  
Eg: Sand stone and lime stone.
- B. 1. The term igneous means fire.  
2. A mixture of molten rock and gases present in the central part or core of the earth is called magma.  
3. Lava means a hot molten rock.  
4. Pumice is an igneous rock.  
5. Sand stone is a sedimentary rock.
- C. 1. gravel 2. cracks 3. soil 4. sand stone  
5. metamorphic, rocks
- D. 1. 5 2. 5 3. 5 4. 3 5. 5  
E. 1. d 2. c 3. d

### Chapter 8 : Human body, Health and Hygiene

- A. 1. Different organs work together to perform a particular function of the body. They are called organ system.  
2. Skeletal system gives shape and size to our body. It also protects the internal organs of the body.  
3. Circulatory system comprises heart, blood and blood vessels.  
4. The function of the excretory system is to clean our body by throwing out body wastes like urine and stool through kidney and sweat through skin.  
5. The heart pumps blood to different parts of the body through small and big blood vessels.  
6. Rice, maize, sugar, ghee etc., are the food items which gives us carbohydrates.
- B. 1. Eyes, ears, nose, tongue and skin are the five main sense organs.  
2. The different parts of body move with the help of muscular system.  
3. We get minerals and vitamins from protective foods.
- C. 1. cells 2. organ 3. digestive 4. heart

5. diseases 6. milk 7. proteins
- D. 1. 3 2. 5 3. 5 4. 5 5. 3 6. 3
- E. 1. c 2. g 3. f 4. e 5. a 6. d 7. b
- F. 1. c 2. b 3. a 4. b 5. c

### Chapter 9 : Housing and Clothing

- A. 1. We need house to live in. It protects us from heat, cold, rain, wild animals and thieves.  
2. Open space make a house airy. It also gives space to children to play.  
3. i) House should be properly cleaned and mopped everyday.  
ii) Drains of kitchen and bathroom should always be covered.  
iii) Waste should be thrown into dustbin. Dust- bins should be kept covered.  
iv) Curtains must be washed regularly.  
v) Bathrooms, washbasin and toilet must be cleaned daily.
4. Clothes protect us from heat, cold and rain. They also protect us from insect bites. They makes us look smart and beautiful.
5. i) We get woollen fibres from animals like sheep and yak.  
ii) We get silk fibres from insects like silk worm.
- B. 1. Igloos are the houses made of cut blocks of ice.  
2. Wire nets prevent the entry of mosquitoes and other insects.  
3. Fibres that are made by human beings are man-made fibres.  
4. Fibres that we get from plants and animals are natural fibres.
- C. 1. stilt 2. walls 3. drains  
D. 1. 5 2. 5 3. 5 4. 3 5. 3  
E. 1. c 2. d 3. b, d  
F. 1. e 2. d 3. b 4. c 5. a

### Chapter 10 : Safety First

- A. 1. Safety rules helps to avoid accidents.  
2. The first assistance or help given to an injured person is called first aid.  
3. For a bleeding person we have to tie a clean hanky or bandage at the spot and ask him to lie down, keeping the wounded part of the body high.  
4. The following precautions are necessary while crossing the road.  
i) Cross the road at Zebra crossing.  
ii) Cross the road only when vehicals on both sides are stopped.
5. The following safety rules must be followed in the

kitchen.

- i) Never enter the kitchen with loose nylon clothes.
- ii) Never play with gas stove, match sticks and pointed and sharp knives.
- iii) Keep distance from the steaming utensils and hot objects.

6. The three safety rules while playing are

- i) Avoid playing near thorny hedges or barbed wires.
- ii) Do not hit others with bat or ball.
- iii) Do not quarrel with anyone.

B. 1. Antiseptic should be applied after washing the wounded body part with dettol.

2. We cross a busy road at zebra crossing.

3. In the case of a body burn, quickly pour cold water or ice over the affected area. Then apply Burnol.

C. 1. safety rules 2. electric shock

3. zebra crossing 4. left

D. 1. 5 2. 3 3. 5 4. 3

E. 1. b 2. c 3. c 4. a 5. b

F. 1. c 2. e 3. d 4. a 5. b

### Chapter 11 : Measurements

A. 1. Liquids are measured in litres.

2. Length is measured in kilo meters.

3. Time is measured in hours and seconds.

4. There are thousand grams in 1 kg.

5. One metre is longer than one yard.

B. 1. Temperature is measured either on centigrade scale or on Fahrenheit scale.

2. The normal temperature of a human body is 98.40F or 370 C

3. Yard is still used in India, Pakistan and Bangladesh.

4. The laboratory thermometres is used for measuring the temperature of liquids.

5. There are 1000 metres in 1 km.

C. 1. grams and kilograms 2. length 3. 0.9144

4. kilometres 5. centimetres

D. 1. 5 2. 5 3. 5 4. 3 5. 5

E. 1. a 2. b 3. c 4. d 5.c

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

### Chapter 12 : The Earth and The Moon

A. 1. The movement of the Earth about its axis is called rotation.

2. If we stand at a sea shore and watch a ship sailing away from us, we will see that the lower part of the ship disappears first and the top part disappears last. It shows that the earth is round.

3. The movement of Earth around the Sun in a fixed path is called revolution.

4. The rotation of the Earth causes day and night. The Earth takes nearly 24 hours to rotate once on its axis.

Thus, 24 hours make 1 day.

5. The Earth takes about  $365\frac{1}{4}$  days to go around the Sun. Thus 365 days make a year.

6. As the Moon goes round the Earth we can only see that part which gets illuminated by the sun. It seems to us Moon changes its shape daily. This change of shape is called the phases of the Moon. The day on which we cannot see the Moon at all is called new moon day. Day by day, small portions of the moon appearing in the sky are crescent moons. One half part of the moon seen after 7 days is half moon. The full face of the moon seen after two weeks is full moon.

B. 1. The revolution of the Earth causes changes in season.

2. The group of stars are called constellation.

3. The people, who travel into space are called astronauts.

C. 1. Spherical 2. third 3. 24 hours 4. axis 5. light

D. 1. 5 2. 3 3. 5 4. 3 5. 3

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

F. 1. c 2. b 3. a 4. e 5. d

### Chapter 13 : Air, Water and Weather

A. 1. i) Moving air helps in moving sail boats, flying kites etc.

ii) Wind mills also run due to moving air.

iii) If the air blows fast wet clothes dry up quickly.

2. Water changes into vapour when it is heated at 1000 C.

3. The sun causes water to evaporate from rivers, lakes and seas, the evaporated water vapour forms clouds. In the clouds, water droplets condense and fall back to Earth as rain or snow. This process is called water cycle.

4. The different kinds of weather are

i) Sunny days ii) Cloudy days iii) Windy days

iv ) Rainy days

5. We wear woollen clothes in winter to protect ourselves from cold winds.

B. 1. The average condition of weather over many years is called climate of a region.

2. Fast moving air is called wind.

3. The three states of water are solid(ice), liquid and gas (vapour).

C. 1. oxygen 2. winter season 3. liquid

4. water vapour 5. ice

D. 1. 5 2. 5 3. 5 4. 5 5. 3

E. 1. d 2. b 3. e 4. c 5. a

F. 1.a 2. a 3. a 4. d

## Exploring Science – Class – 4

### Chapter 1 :

- A. 1. We get food, fuel and oxygen from plants.
  2. The stalk or stem that connects the leaf to the plant is petiole.
  3. Plants store their extra food in leaves, stems and roots.
  4. (i) Mushrooms get their food from dead and decaying plants and animals.  
ii) Dodder(Amarbel) get their food from other green plants through special roots penetrated in to the host plant.  
iii) Cactus contains chlorophyll in its stem. The process of photosynthesis occur in its stem.
  5. Plants use the food in a number of ways.
    - For survival and growth.
    - Repair worn-out cell and build new cells.
  - B. 1. A leaf is an outgrowth from a node on a plant stem.
  2. The tip of a leaf opposite to the petiole is called apex.
  3. Mushroom and Croton.
  - C. 1. 3 2. 5 3. 3 4. 3
  - D. 1. iv 2. ii 3. iii
  - E. 1. Photo means light and synthesis means putting together.
  2. The expanded portion of a leaf is lamina.
  3. Chlorophyll is a green pigment that exists in cells.
  4. The small openings of the lowest layer of cell.
- Think it over[HOTS]
1. Process of photosynthesis cannot be done without light. So, the plant turn pale when it is kept in dark.
  2. Yellow leaves will not have chlorophyll in them to prepare food on their own.

### Chapter 2 :

- A. 1. Plants develop special features to adapt themselves to the surroundings. This process is adaptation.
2. Plants that grow on land are called terrestrial plants. Ex: Pine tree, Spruce tree, Mango tree.
3. The types of aquatic plants are floating plants, emergent plants and totally submerged plants.  
Floating plants Ex: Water Lilly  
Emergent plants Ex: Cattail  
Totally submerged plants Ex: Pond weed.
4. The plants which grow near the sea-shore in marshy areas. Mangrove trees have breathing roots.
5. As the cactus has no leaves loss of water is reduced

during photosynthesis. The green fleshy stem contains chlorophyll and makes food. Long root stem spread out wide or go deep into the ground to absorb water even in deserts.

6. Coniferous trees grow in cold and hilly places. They have needle-like leaves. The needles are coated with wax which prevents the loss of water. The needle-like structure of leaves makes snow slide off easily.

B. 1. The plants that grow and remain in water are called Aquatic Plants.

2. The plants which eat insects are known as carnivorous plants.

3. The roots grow out of the soil and water to breathe are called breathing roots.

4. Teak and Rubber trees are evergreen.

C. 1. aquatic 2. Terrestrial 3. snow 4. Mangrove 5. cactus, palm

D. 1. 3 2. 5 3. 3 4. 3 5. 3

E. 1. c 2. c 3. c 4. c

F. 1. INSECTIVOROUS 2. ADAPTATION

3. TERRESTRIAL 4. AQUATIC

G. 1. d 2. c 3. a 4. e 5. b

Think it over[HOTS]

1. The lack of leaves of cactus helps reduce water loss. Long root system of cactus spread out wide and deep into the ground to absorb water. But paddy plants have leaves and no long roots to grow in deserts.

### Chapter 3 :

- A. 1. Adaptation means adjust according to environment.
2. All animals are adapted to live at a certain place. The place where an animal lives is called its habitat. Some habitats of different animals are desert animals. Polar animals, grassland animals.
3. Because they don't have a constant body temperature. They adjust themselves with the temperature of environment. During cold weather inactiveness occurs called hibernation.
4. Camel's feet are wide, so they can walk on sand more easily. It can travel for more than a week without drinking water and can last for several months without having food.
5. The distinct feature of animals enable them to protect themselves. Ex. Some insects copy the shape, colour and habits of other animals.
- B. 1. The period of inactivity in amphibians in the hot and dry weather is called estivation.

2. The period of inactivity occurs in cold weather in amphibians is called hibernation.
  3. Camouflage is method used by animals to blend their colour with the environment.
  4. Organisms that live by drawing food from a host organism are called parasites.
  5. The animals live on trees and tend to have long tails for maintaining their balance are arboreal animals.
- C. 1. fur, fat 2. gills 3. water, land 4. shells  
5. sleep  
D. 1. 5 2. 3 3. 3 4. 5 5. 3  
E. 1. b 2. d 3. d F. 1. d 2. c 3. a 4. b

Think it over[HOTS]

1. Arboreal animals usually have long tails to maintain their balance as they live on trees.
2. Dinosaurs could not adapt themselves according to their changing environments.

#### Chapter 4 :

- A. 1. The process thought by which the living beings produce their young ones of their own kind is called 'reproduction'.
  2. In order to maintain life forms on the earth, each living being has to reproduce its own kind. Life cannot exist on the earth if living things do not reproduce.
  3. Some animals give birth to young ones and others lay eggs.
  4. Mammals feed their young ones, clean them, keep them safe until they learn to look after themselves.
  - 5.
- B. 1. Mammals 2. Three stages 3. The mother bird keeps the egg warm by sitting on it. This process is called incubation.  
C. 1. pupa 2. yellow 3. Bat 4. spawn 5. tadpole  
D. 1. 3 2. 3 3. 3 4. 3 5. 5  
E. 1. a 2. a 3. c F. 1. d 2. a 3. c 4. b

Think it over[HOTS]

1. A little chick is the own kind of its mother hen. So, it resembles its mother hen.
2. Many reptiles like snake and turtle do not care for their eggs or babies.

#### Chapter 5 : Food and Digestion

- A. 1. The process of breaking down food into a simple and soluble form so that the body can use it. This process is digestion.
2. Water helps in digestion. It helps in dissolving nutrients that are to be used up by the body. Water regulates the body temperature.
3. The strong muscles of the stomach use enzymes to

further break down food into a usable form. Till this process stomach holds food.

4. In small intestine food is broken down using enzymes released by the pancreas and bile from the liver. The contents of the small intestine start out as semi-solid food end-up in a liquid form.
  5. The course of flushing out the undigested food through the Anus is known as defecate.
- B. 1. Egg, meat and fish are body building foods.  
2. Butter, ghee and nuts are energy giving foods.  
3. Anus.  
4. Sugar, Starch and fibre are three main types of carbohydrates.  
C. 1. mouth 2. large 3. rectum 4. bile, fats 5. gall bladder, pancreas.  
D. 1. 3 2. 5 3. 5 4. 3 5. 3  
E. 1. a 2. c 3. c  
F. 1. d 2. c 3. a 4. b

Think it OVER[HOTS]

1. Proteins are used by the body to make muscles, organs and other tissue such as skin and hair. So, proteins are needed to a child more than an old person.
2. Usually mangoes are unavailable in winter season. This Crop is available in summer. But preservation of mangoes in way of canning through makes it possible.

#### Chapter 6 : Teeth and Dental Care

- A. 1. Incisors - These are eight. These are used for cutting and chopping.  
Canines - These are four. They help tear food.  
Premolars - These are also four. These are used for chewing and grinding food.  
Molars - There are eight molars in the mouth. They work closely with the tongue to help swallow food.
  2. At the age of 6 years, milk teeth start falling as they are not permanent. Permanent teeth replace them. So, milk teeth also called temporary teeth.
  3. Germs can grow and form a sticky yellow layer called plaque. To remove this plaque we have to brush our teeth properly.
  4. We should visit a dentist regularly for check-up.
  5. 1) Brush the teeth atleast twice a day.  
2) Rinse the mouth well after taking food.  
3) Clean the tongue to remove germs, which attack teeth.
- B. 1. 20 Teeth 2. 32 Teeth 3. Bicuspid teeth  
4. There are 8 incisors and 4 canines are there in a permanent teeth set.  
C. 1. eight 2. incisors 3. calcium 4. enamel

- D. 1. 3 2. 5 3. 5 4. 5  
E. 1. a 2. b 3. c  
F. 1. d 2. a 3. e 4. b 5. c

Think it OVER[HOTS]

1. Incisors. 2. About 3,333 sets of teeth a shark will have in its life time. 50,000 total teeth in a maximum of 15 Rows in its entire life time.

### Chapter 7 : The Right Clothes to Wear

A. Basically the need of clothes are protecting our body from rough surfaces, insect bites, thorns and prickles. They protect us from ultraviolet surfaces of Sun, cold, dust and rain. Clothes are for social implications also.

2. People wear specific clothes to do specific tasks. This specific dress is known as uniform.

3. Natural fibres come from plants and animals. Synthetic fibres are Man-Made.

4. We wear dark-coloured clothes made of wool in winter.

5. Insects like moths and silver fish attack woollen clothes and silk clothes. So, they should be kept under the sun for some time.

B. 1. 1) Natural 2) Synthetic

2. 1) Cotton 2) Linen

3. 1) sheep 2) silkworm

4. 1) viscose 2) Acrylic

C. 1. clothes 2. uniform 3. cotton 4. natural

D. 1. 5 2. 5 3. 5 4.5 5. 3

E. 1. b 2. c 3. b 4. d 5. b

F. 1. e 2. d 3. a 4. b 5. c

Think it OVER[HOTS]

1. Police, doctor, lawyer, soldier, post-man

2. Fibre blending

### Chapter 8 : Safety and First Aid

A. 1. a) Always walk on foot-path. If it is not walk on the left margin.

b) Cross the road only from a zebra crossing.

c) Never play on road.

d) Never keep your head or hand out of window of moving vehicle.

2. Observe the walk signal and cross only when it is green. Stop look left then right and then again left before crossing road. Only walk, do not run while crossing the road.

3. In case of an accident proper care of the victim should be taken before the doctor arrives. This is

known as first aid.

For burns dip the burnt part in cold water or hold the part under running water for some time.

4. If an insect bites, never pinch. Wash the area thoroughly with fresh water. Put some soothing cream. Use a soft pad soaked in ammonia water for relief. Apply calamine lotion if there is itching at the sting spot.

5. Wear cotton clothes while standing near the cooking stove. Extinguish a used Match-stick before throw it away. Store petrol and kerosene safety. Turn off the gas stove and regulator when they are not in use.

6. Never run if clothes catch fire. Stop and cover face with hands. Drop the ground. Roll on floor.

B. 1. Anti tetanus 2. Do not 3. foot path 4. minor 5. prevention

C. 1. 5 2. 5 3. 3 4.5 5. 3

D. 1. a 2. c 3. c 4. c

Think it OVER[HOTS]

1. Soap, shampoo, etc. are poisonous because they have harmful chemical in them to kill pests and germs so these should be kept separately from grocery items like jam.

2. First dip the burnt finger in cold water and keep in for some time. Then apply burnol such as burn-cure creams.

### Chapter 9 : Our House

A. 1. We all need houses to live in as they protect us from heat, cold, rain, wild animals and thieves.

2. In remote areas and mountains, houses are made of locally available material. Such houses are called Kutcha houses.

3. A caravan is a house of wheels. It is a movable house. It can be parked anywhere like a car.

4. Eskimos are the people live in the coldest regions. In winters these regions are covered with snow. So, Eskimos build igloos from the blocks of snow or ice.

5. A good house should have all the things need to make it safe and comfortable. It should have doors and windows to let the fresh air and sunlight in. It should have enough sunlight to kill germs and keep the rooms dry.

B. 1. Huts 2. Caravan is of wheels.

3. We need doors and windows in a house to let the fresh air and sunlight in. 4. Because phenyl is a germ killer,

Think it OVER[HOTS]

1. In large lake areas people live in water only in

floating house boats. Tourists from all over the world come and stay in house boats.

2. Disaster victims live in tents.

C. 1. stilt 2. dustbin 3. snow 4. flooded 5. house

D. 1. 5 2. 3 3. 3 4. 5

E. 1. d 2. a 3. d 4. d 5. d

F. 1. e 2. a 3. d 4. b 5. c

### Chapter 10 : The Changing Weather

A. 1. Weather refers to the short-term atmospheric conditions that we see at any one moment.

2. Temperature, air pressure, moisture, cloud and wind are the elements that determine the weather condition.

3. When air moves, it is called wind and a strong wind is called storm.

4. Wind blows from the sea towards the land is known as sea breeze.

5. Condensation is the opposite of evaporation. It takes place when water vapour in the air condenses from its gaseous state, back into its liquid state.

B. 1. Humidity. 2. Atmosphere 3. A very strong wind is called storm. 4. Upper surface of ground water below which soil is saturated with water that fills up all cracks is known.

C. 1. Carbon dioxide, ozone 2. Land breeze

3. Sea breeze 4. air 5. dew point

D. 1. 3 2. 5 3. 3 4. 5

E. 1. b 2. c 3. b

Think it OVER[HOTS]

1. Air consists of many gases. It's a mixture of nitrogen, oxygen, carbon dioxide. When the air moves it is called wind.

2. Fog is a cloud that gets formed near the surface of the earth.

### Chapter 11 : Matter and Materials

A. 1. Object that occupies space and has weight is called "Matter".

2. Atoms are the common properties of Matter.

3. Molecules are arranged in a regular pattern in a solid touching each other.

4. Solid, liquid and gas are 3 different states of water.

5. a) Liquid water changes to solid ice at temperature below zero degree Celsius. This process is called freezing.

b) When ice is heated, it changes into water. This process is called melting.

c) When water is boiled at high temperature, it gets changed into water vapour. This process is called

evaporation.

d) When water vapour changes into water on cooling, it is called condensation.

e) The process by which solid directly gets turned into the gaseous form on heating is called sublimation.

B. 1. Matter. 2. Solid 3. Solid iodine 4. Soda

5. Water

C. 1. space, weight 2. atoms 3. molecule

4. solid, liquid, gas 5. regular 6. attractive

7. matter

D. 1. 3 2. 5 3. 5 4. 3 5. 5

E. 1. b 2. b 3. c 4. a 5. c

Think it OVER[HOTS]

1. Gases spread out quickly to fill the space available to them. So the smell of roses spreads out and fills up the room.

2. Gas can be stored in a container by turning it into liquid.

### Chapter 12 : Work, Force and Energy

A. 1. A force is a push or pull. It is necessary to move or stop, change direction.

2. The force of the ground which pulls all towards it is called gravity.

3. Friction is an invisible force that acts when two things rub against each other. It is useful to reduce or stop the motion of an object.

4. Work is said to be done only when an object moves over a distance applying force, as per the definition in words of science.

5. Wedge is a simple machine used for pushing two objects apart. It is made of two inclined planes.

6. Energy is the ability to do work. Sources of energy are Solar energy, Atomic energy, Geothermal energy.

B. 1. gravity 2. friction 3. knife 4. the sun

5. energy.

C. 1. force 3. Machines more 4. Leaver 5. wind

6. wedge 7. buoyancy

D. 1. 5 2. 3 3. 5 4. 3 5. 3 6. 3

E. 1. c 2. c 3. b 4. b

Think it OVER[HOTS]

1. The method of using scissors would be advised.

Because using scissors is easier than using hands in tearing a paper. More over scissors cut the paper in a lining order which hands cannot.

2. The action of playing cricket needs more energy because it needs the work of all organs when running, catching, throwing, picking, handling and shouting, doing homeworks needs none.

### Chapter 13 :Our Planet Earth

- A. 1. Crust is the hard outer layer made of solid rock which the earth consists of.  
2. The movement of the earth around itself an invisible axis is known as rotation. It takes 24 hours to finish one complete rotation to the earth.  
3. The movement of the earth around the sun is revolution. One revolution takes 365 days and 6 hours or 1 year.  
4. The causes of change in seasons are due to movement of the earth that are in two ways.  
1. rotation; 2. revolution. These two movements create variations in temperature, weather and seasons.  
5. Air is a synonym for atmosphere. The atmosphere of our planet is made up of three primary gases that are oxygen, nitrogen and Argon.  
B. 1. The line at which the earth and the sky appears to meet is called the Horizon.  
2. Ferdinand Magellan 3. Crust, core, Mantle.  
4. If stand at any point of the earth's surface and look up, will see a huge bowl which is called sky.  
C. 1. Mantle 2. rotation 3. orbit 4. sun  
D. 1. 5 2. 5 3.3 4. 3 5.3  
E. 1. a 2. c 3.b 4. a  
F. 1. d 2. a 3. e 4. b 5. c  
Think it OVER[HOTS]  
1. Rotation of the earth causes day and night.

### Chapter 14 : Study of Nature

- A. 1. The cutting down of trees without planting others in their place is called deforestation.

2. For every tree that is cut, three trees should be planted. All must reduce dependence on charcoal as a source of fuel, instead of which use wind power or solar energy.  
3. Pollution means the addition of harmful substances cause harm or discomfort to human beings. The harmful substances are called pollutants.  
4. Pollutants from factories, refineries and water treatment plants, pesticides, fertilisers from agricultural fields; addition of soaps, detergents and chemicals; garbage and thrown dead bodies; Human sewage; bathing of animals, washing clothes lead to water pollution.  
5. Reduce, reuse and Recycle are three methods to control pollution.  
B. 1. The harmful substances are called pollutants.  
2. Planting trees in large numbers is called afforestation.  
3. World Environment Day is celebrated on June 5 every year.  
4. The addition of harmful substances like sulphur dioxide, carbon dioxide, carbon monoxide etc. into air is called air pollution.  
5. The addition of harmful substances like pesticides, fertilizers, garbage, dead bodies into water is known as water pollution.  
C. 1. deforestation 2. planting 3. garbage 4. use and throw  
D. 1. 3 2. 3 3.5  
E. 1. b 2. c 3. a

## Exploring Science-CLASS-5

### Chapter 1 : Flower - Plants Decoration

A. 1. Reproduction is a process through which plants multiply to produce more of their own kind. In plants, reproduction takes place by seeds, spores and vegetative propagation.

2. i. Stamen is the male part of a flower.

ii. It is made up of filament and anther. iii. It is the pollen-producing part of the flower.

iv. The number of stamens is usually the same as the number of petals.

3. 1. Ovary is one of the parts of pistil.

2. It is situated at the bottom of the flower.

3. It has seeds present inside them that turn into fruits.

4. Pollination is the way through which the pollen from the male part of a flower get to the egg in the female part of a flower to form a seed.

B. 1. Anther produces and contains pollen.

2. Filament is fine hair-like stalk that holds the anther.

3. Style is a tube-like structure that holds up the stigma.

4. Ovule is the part of the ovary that becomes the seed.

5. Bats, bees, birds and butterflies are some common pollinators.

C. 1. Sensitive 2. water vapour and oxygen

3. Anther 4. Style 5. nectar

D. **Bats:** Flowers that are white or pale in colour, large and have strong fruit-like fragrance.

**Moths:** Flowers that are shaped like landing pads. And

also strong, sweet and scented night-time blooming flowers muted in colour.

**Flies :** Stinky flowers which are pale, dull or drab in colour.

**Beetles :** Flowers with lots of pollen, dull white or green in colour and mild in odour.

E. 1. 5 2. 3 3. 3 4. 3 5. 5

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

### **Chapter 2 : Seed Germination and Dispersal**

A.1.i. The cotyledon or seed leaf, absorbs the food in the endosperm and transports it to the embryo.

ii. The baby plant is present between the cotyledons.

iii. It develops a new root system and a shoot system that grows into a new plant.

2. 1. Seed dispersal is the process of spreading seeds to different places.

2. Seeds need to be dispersed because if they are not dispersed, many germinating seedlings will grow very close to the parent plant.

3. This will result in competition between the seedlings and their parent plant.

4. The competition is for light, space, water and nutrients which are important for the growth of plant.

5. Seed dispersal also creates colonies and prevents over-crowding.

3. 1. Animals eat fruits and throw away their seeds.

2. Seeds of apple, mango, orange etc. are dispersed in this way.

3. Some seeds have hooks that stick to the fur of animals and get dispersed. **Eg:** Cocklebur seed.

4. Birds swallow some seeds which come out with

their droppings.

5. Squirrels collect nuts and bury them to be used in winters. These seeds grow into new plants under favourable conditions.

6. While eating fruits, some seeds get stuck on the beaks of birds which fall down when birds rub their beaks against the bark of trees.

#### 4. Characteristics of seeds dispersed by wind:

1. Seeds must be light and small so that they may be carried over large distances.

2. Seeds should have hair or wings to help them get carried away by the wind.

**Ex:** i) Seeds of hiptage, dandelion and cotton have tufts of hair.

ii) Sycamore seeds are winged.

#### Characteristics of seeds dispersed by water :

1. Seeds must be spongy or hollow or lighter so that they can be carried by flowing waters over long distances.

**Ex:** i) The lotus fruit has spongy part which helps to float.

ii) Coconut is hollow on the inside and is covered with hairs outside. This makes it light and hence can be carried by flowing water.

5. 1. After harvesting, cereals like wheat and rice are stored in godowns.

2. This protects them from getting spoilt by moisture or eaten up by rats, birds and insects.

B. 1. Seeds having only one cotyledon are called monocotyledons. **Ex:** Corn, rice and maize seeds.

2. The seed with a small root and small shoot is called seedling.

3. Seed dispersal may be carried by wind, water or animals.

4. Different stages of crop cultivation are -

a) Ploughing the field

b) Sowing the seed

c) Addition of fertilizers

d) Irrigation

e) Crop protection

f) Harvesting and storage

5. Irrigation is the process in which water is supplied to farming field artificially.

6. DDT and Gammexene are some common pesticides used for crop protection.

C. 1. crops 2. radicle 3. seed 4. seed coat

5. Sowing

D. 1. EMBRYO 2. SEEDS 3. RADICLE

4. GROWTH 5. CROP

E. 1. 3 2. 5 3. 3 4. 5 5. 3

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

### Chapter 3 : Lifestyle of Animals

A. 1. Animals need food to get energy and stay healthy.

2. i) Plant eating animals like cow, goat, sheep, deer are called herbivores.

ii) Animals like bear and dog eat both plants and flesh of animals. They are called Omnivores.

3. 1. Insects breathe through air tubes or holes.

2. There are large number of holes on the bodies of insects through which they breathe. These are called Spiracles.

3. These spiracles lead into a network of branching tubes called tracheae.

4. Because of the contraction of the body muscles, air is pumped into the tubes and then carried out to all tissues.

5. The tissues take in oxygen from the tubes and give out carbondioxide into the tubes.

4. 1. Amphibians breathe through gills and lungs.

2. Tadpoles breath through gills.

3. But an adult frog breathes through its lungs on land and through its moist skin under water.

5. 1. Migration is defined as the movement of animals from one region to another in response to changes in weather, habitat or availability of food.

2. Animals also migrate because of natural calamities like earth quake, drought or flood.

3. Some birds also migrate twice a year during spring and autumn. Such birds are called migratory birds.

B. 1. i) Rodents: **Ex:** Squirrel

ii) Carnivores : **Ex:** Tiger

iii) Amphibian : **Ex:** Frog

2. Mammals breathe through lungs.

3. Large number of holes on the bodies of insects through which they breathe are called spiracles.

4. Ostrich and kiwi birds cannot fly.

5. Webbed feet in frog helps to swim.

C. 1. Plant eating 2. breathing 3. gills

4. tracheae 5. resident frogs

D. 1. 3 2. 3 3. 5 4. 3 5. 5

E. 1. c 2. b 3. c 4.d 5. b

F. 1. d 2. e 3. a 4. b 5. c

**Chapter 4 : The Nervous System**

A. 1. i) The brain is the control centre of the nervous system.

ii) It has three major parts - cerebrum, cerebellum and brain stem.

iii) All these parts work together.

2. Our brain can be kept safe and healthy by adopting

the following ways.

1. Eating healthy food that contain potassium and calcium, the two minerals that are important for the nervous system.

2. Getting a lot of play time (excercise).

3. Wearing a helmet when we ride our motorcycle or any other two wheeler.

4. Using our brain by doing challenging activities such as puzzles, reading, making art, etc. that gives a nice work out to our brain.

**3. Functions of Skin:**

1. The skin is an organ for touching and feeling.

2. It covers our entire body.

3. It absorbs sunlight for producing vitamin-D and heat.

4. It protects our internal organs from germs and dirt.

5. It keeps good things like water and blood inside our body.

6. It helps us feel heat, pain, pressure and cold since there are millions of nerve endings attached to it.

7. It regulates our body temperature by controlling blood flow and sweat.

4. 1. Tongue helps us to taste things.

2. The tongue can taste your different flavours: bitter, sour, salty and sweet.

**5. Protection of Eyes:**

1. Clean your eyes regularly.

2. Do not read in a moving car or bus.

3. Do not read in very dim or very bright light.

4. Do not watch television for long, you must sit atleast six feet away from it.

5. Do not rub your eyes with dirty hands.

B. 1. The actions that happen automatically without our thinking are called reflex actions.

2. The nervous system is made up of the brain, the spinal cord and thousand of nerves.
3. The nerves that carry message from the brain and spinal cord to the muscles and glands are Motor nerves.
4. The nerves that carry signals from the sense organs to the spinal cord to then to the brain are sensory nerves.

C. 1. Pupil 2. motor 3. Cerebrum 4. nervous system 5. Medulla

D. 1. Pupil 2. optic nerve 3. Iris 4. Cerebrum

5. Medulla

E. 1. MEDULLA 2. BRAIN 3. PUPIL 4. IRIS

5. NERVES

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

G. 1. d 2. d 3. a

### **Chapter 5: The Skeletal System**

A.1.1. The place where two bones meet is called joint.

2. Two types of joints namely movable joint and fixed joint are present in our body.

3. The joints which allow the movement of bones are called movable joints.

4. There are four types of movable joints. They are - Hinge joint, gliding joint, ball and socket joint and pivot joint.

5. The joints that are fixed in place and don't move at all are called fixed joints. The bones of skull are joined together with the help of these joints called sutures.

#### **2. Functions of the skeletal system :**

1. Muscles are attached to the bones. Muscles and bones work together to move the parts of the body.

2. It provides support and the basic shape to the body. Without a skeleton, the body would be a

shapeless heap of tissues.

3. Bones contain minerals like calcium and phosphorus that make the bones strong.

4. Bones contain bone marrow, a fatty substance which forms blood.

5. It protects the soft organs of the body. The skull protects the brain. The ribs protect the heart and lungs.

3. 1. There are three types of muscle fibres - Smooth muscle fibres, cardiac muscle fibres, skeletal muscle fibres.

2. **Smooth muscle fibres** : Most involuntary muscles have smooth muscle fibres. These muscles do not have bands. Organs of respiratory and circulatory systems have smooth muscles. The smooth muscles work for long period without getting tired.

3. **Cardiac muscle fibres**: The heart is made up of cardiac muscle fibres known as myocardium. They have bands running across the muscles. These muscles work quickly and are powerful. They do not get tired.

4. **Skeletal muscle fibres**: All voluntary muscles attached to the bones are made up of the skeletal muscle fibres which are also called striated muscle fibres. They have dark bands running across the muscles.

4. 1. There are four types of movable joints namely - Hinge joint, gliding joint, ball and socket joint and pivot joint.

2. **Hinge Joint** : Bones move in one direction only because of the hinge joint. Both elbows and knees have hinge joints. Smaller hinge joints are present in fingers and toes.

3. **Gliding Joint**: This joint is found between the small

bones of wrists and ankles. The movements allowed are simple gliding back and forth and sideways.

4. **Ball and Socket Joint** : They have one round end of one bone that fits into a small cup - like area of another bone. This joint allows lot of movement in every direction. Our hips and shoulders have ball and socket joints.

5. **Pivot Joint** : It is located between the first and the second vertebrae of the backbone. The skull has been connected to the first two vertebrae of the vertebral column with the help of a pivot joint. It allows the rotational movement from side to side.

5. 1. The arms are called fore-limbs.

2. Each fore-limb has three bones.

3. The upper arm above the elbow has one bone, called humerus.

4. The lower arm below the elbow has two bones called radius and ulna.

5. The wrist, the hands and fingers are made up of many small bones.

6. The hind-limbs or the legs also have three bones each.

7. Femur is the thigh bone, the longest bone in the body.

8. The lower leg below the knee has two bones, called tibia and fibula.

B. 1. The last two pairs of ribs attached to the spine at back are called floating ribs as they are not connected to sternum.

2. The bones in the head that protect our brain and give shape to the face is called skull.

3. The framework of bones with each other inside our body is called skeleton.

4. The place where two bones meet is called joint.

5. The strong fibres with which the muscles are attached to bones are called tendons.

C. 1. MUSCLES 2. JOINT 3. SKULL 4. SKELETON

5. SKELETAL

D. 1. floating 2. ligament 3. pivot

4. bone marrow 5. eight

E. 1. ✓ 2. ✓ 3. ✓ 4. ✗ 5. ✓

F. 1. d 2. c 3. b 4. c 5. b

## Chapter 6: Food and Health

A.1. 1. Food is essential for our body.

2. Food contains essential nutrients which help to keep our bones, hair, nails, teeth and skin strong and healthy.

3. Food makes our immune system strong. It helps us recover quickly when we are ill. It also helps to build and repair cells and tissues of our body.

4. Food helps our body and mind grow. Without food any living thing will die.

5. Delicious food also makes one happy and gives pleasure.

6. Food contains two types of essential nutrients.

They are macro-nutrients like carbohydrates, fats, proteins and micro-nutrients like vitamins and minerals.

2. **Proteins** : Our diet must contain 35% of food rich in proteins. Foods like beans, meat, poultry, fish, cheese, nuts and pulses are rich sources of proteins.

1. We need proteins for growth.

2. They build and repair worn out cells of our body.

3. They improve our immune system.

4. They provide energy when carbohydrates are not available.

### 3. Importance of carbohydrates:

1. Carbohydrates are main source of energy.
2. They are easily used by the body.
3. They are needed for the central nervous system, kidneys, brain and muscles for proper working.
4. They are mainly found in starchy foods like grain and potatoes, fruits, milk and yogurt. Sugar and starch are simplest forms of carbohydrates.

### Importance of Fats

1. Fats provide taste and stability to food.
  2. They provide energy for normal growth and development.
  3. They help to absorb certain vitamins.
  4. They cover the delicate body parts and protect them from injuries.
  5. They also keep the body warm.
  6. Fats are of three types. Saturated fat is found in meat, butter and cream. Trans fat is found in baked items like biscuits, snack foods and fried foods. Unsaturated fat is found in olive oil, nuts etc.
1. Vitamins and minerals are needed by our body in small amounts. So, these are called micro-nutrients.
  2. Vitamin - A prevents eye problems, promotes healthy immune system and keeps skin healthy.
  3. Vitamin - C helps to absorb iron and calcium, aids in wound healing and brain function. Also keeps bones, teeth and gums healthy.
  4. Vitamin-D strengthens bones as it helps to absorb calcium.
  5. Vitamin - E protects cells from setting damage.

6. Minerals like calcium builds strong teeth and bones, iron carries oxygen to all parts of the body, zinc strengthens immune system and magnesium helps muscles and nerve function, helps body create energy and make proteins.

5.

### Non Communicable diseases

#### Communicable diseases

1. These are spread from one person to another.
2. These are caused by germs present in air, food, water, etc.
3. **Ex:** Typhoid, chicken pox, AIDS, Malaria, dysentery etc.

1. They do not spread from one person to another.
2. They are caused due to deficiency of vitamins, minerals etc. or due to the malfunctioning of a body part like liver, kidney etc.
3. **Ex:** Night blindness, Scurvy, Rickets, Anaemia, Goitre etc.

- B. 1. Roughage are the types of carbohydrates that our body cannot digest.
2. A diet that contains all the nutrients, roughage and water in the right proportion is called Balanced Diet.
3. Lack of proteins and carbohydrates over a long period of time causes malnutrition.
4. Immunity is the ability of the body to fight against disease.
5. Night blindness and Anaemia are deficiency diseases.

- C. 1. Vitamins 2. night blindness 3. Vitamin - C 4. Iodine 5. Anaemia

D. 1. NUTRIENTS 2. GERMS 3. VACCINATION  
4. DISEASE 5. VITAMINS

E. 1. ✓ 2. ✗ 3. ✓ 4. ✗ 5. ✗

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

### Chapter 7 : Air and Water

**A.** 1. Air is a mixture of gases - 78% of nitrogen, 21% of oxygen, 1% other gases, dust particles and water vapour.

**1. Oxygen:** It is most important for breathing and for staying alive. It is also essential for burning.

**2. Nitrogen:** It keeps the process of burning under control. All living things need nitrogen for their growth.

**3. Carbondioxide:** Air contains 0.03% of carbondioxide. Plants use carbondioxide to make their own food. It absorbs the heat sent to the earth by Sun. This makes the earth atmosphere suitable for life to exist.

**4. Ozone:** This forms a layer in the atmosphere and is very useful in saving the earth from harmful ultraviolet rays of the Sun.

**5. Water Vapour:** The amount of water vapour present in the air at a given time is called humidity. When humidity becomes very high, it rains.

**2. Properties of Air:**

1. Air has weight.
2. Air occupies space.
3. Air exerts pressure.

**3.** Atmosphere is the blanket of air surrounding the earth. It consists of four main layers. They are - Troposphere, Stratosphere, Ionosphere and Exosphere.

**(i) Troposphere:** It is the first layer of atmosphere that extends upto 15km above the earth's surface. This

layer is made up of gases we breathe everyday.

**(ii) Stratosphere :** It extends upto 35km and lies above the troposphere. The ozone layer is situated in the upper part of this layer which prevents harmful ultraviolet rays to enter earth's atmosphere.

**(iii) Ionosphere :** Above the stratosphere, lies the mesosphere, followed by the thermosphere. The mesosphere and thermosphere are together called as ionosphere. This is the thickest layer which possesses electrically charged particle that help radious work.

**(iv) Exosphere :** It is the layer of atmosphere above the Ionosphere and is very thin. Beyond this layer, lies the space.

**4.** 1. Sedimentation is the process through which heavy particles (impurities) present in water settle at the bottom of container due to the effect of gravity.

2. Decantation is the process of separation of mixtures, carefully pouring a solution from a container and leaving sediments at the bottom of the container.

**5.** Soluble impurities can be removed from the water through evaporation.

**Experiment:** 1. Take some water in a beaker.

2. Dissolve some sugar in the water.

3. Put the beaker on a spirit lamp.

4. Allow it to boil until the entire water content of the beaker evaporates.

5. After evaporation, some crystals of sugar can be seen lying in the beaker.

6. Thus, sugar is removed from the water through evaporation.

**B.1.** Water purification is the process of removal of undesirable substances from raw water to make it fit for human consumption.

**2.** Atmosphere contains 78% of Nitrogen, 21% of oxygen, 1% other gases, dust particles and water vapour.

**3.** The substance impurities that gets dissolved in water are called soluble impurities.

**4.** Some substances which do not get dissolved in water are called insoluble impurities.

**5.** Different methods are followed for water purification. They are boiling, filtration, chemical treatment, ultraviolet purification, reverse osmosis, distillation etc.

**C.** 1. Oxygen 2. Nitrogen 3. Ozone Layer

4. Troposphere 5. Filter Paper 6. Chlorine and Iodine

**D.** 1. X 2. ✓ 3. X 4. X

**E.** 1.(d) 2.(b) 3.(b) 4.(b) 5.(d)

**F.** 1.(e) 2.(d) 3.(b) 4.(c) 5.(a)

## Chapter 8 : States of Matter

**1.** 1. Objects that take up space and have mass are called matter.

2. Our body and everything around us is made up of matter.

**2.**

Physical change	Chemical change
1. A Physical change is a temporary change which can be reversed.	1. A chemical change is a permanent change which cannot be reversed.
2. It affects only the state of matter. So we can get back the old substances.	2. New substances are formed and we cannot get back the old substances.
3. <b>Ex:</b> Conversion of water into ice and ice into water.	3. <b>Ex:</b> Conversion of milk into curd.

3. Matter exists in three states - Solid, Liquid and Gas.

**3.** 1. Molecules are always in a state of motion.

2. They never stop moving.

3. They are constantly attracted towards one another.

4. In solids, atoms or molecules are closely packed.

They are not compressible. So, a solid is relatively rigid.

5. In liquids, the molecules are less closely packed.

Molecules can move around freely. So, liquids can flow.

6. In gases, the molecules are very loosely packed.

Molecules have a lot of freedom to move here and there.

**4.** 1. A mixture is a combination of two or more substances that are not chemically united and do not exist in fixed proportions with respect to one another.

2. Most natural substances are mixtures.

3. **Ex:** Water and oil are mixtures.

4. Mixture is divided into two types: Homogeneous mixture and Heterogeneous mixture.

**5.** 1. A solution is a mixture of two or more substances in a single phase.

2. At least two substances must be mixed in order to make a solution.

3. **Ex:** Take a beaker filled with water. Put some salt in it. It dissolves. Molecules in water are loosely packed.

Space exists between the molecules of water. When we put salt in it, the salt molecules take up the empty space that exists between the water molecules.

Water molecules also fill up the empty space of salt. This results in the formation of a solution. This process continues till all empty spaces are completely filled.

3. **Ex:** Take a beaker filled with water. Put some salt in it. It dissolves. Molecules in water are loosely packed. Space exists between the molecules of water. When we put salt in it, the salt molecules take up the empty space that exists between the water molecules. Water molecules also fill up the empty space of salt. This results in the formation of a solution. This process continues till all empty spaces are completely filled.

**B. 1. Atom:** Atoms are the building blocks of matter.

2. **Molecules:** All matter can be split into tiny units that are not visible to our naked eye. These tiny units are called molecules.

3. **Element:** Atoms of the same kind form elements.

4. **Compound:** The atoms of different kinds combine and form compounds.

5. **Solute:** The substance that gets dissolved is called solute.

6. **Solvent:** The substance in the larger amount is called solvent.

C. 1. Air 2. Paper 3. molecules 4. largest

5. solvent

D. 1. ✗ 2. ✗ 3. ✓ 4. ✓ 5. ✓

E. 1.(b) 2.(a) 3.(b) 4.(b) 5.(b)

F. 1.(e) 2.(d) 3.(b) 4.(a) 5.(c)

## Chapter 9 : Rocks, Minerals and Soil

1. 1. Rocks are made up of one or more minerals. The type of rock depends on the quality, quantity and arrangement of minerals in it.

2. According to the methods involved in the formation of rocks, there are three types of rocks.

3. They are igneous rocks, sedimentary rocks and metamorphic rocks.

2. 1. Igneous rocks form the base of all kinds of land-plains, mountains and ocean beds.

2. Igneous rocks are called fire rocks.

3. They are formed either underground or above ground.

4. They are formed underground when the melted rock, called magma, deep within the earth, is trapped in small pockets. As these pockets of magma cool down slowly, this very magma becomes igneous rock.

5. They are formed above ground when lava cools. Volcanoes erupt, causing the magma to rise above the earth's surface. This magma is called lava.

3. 1. Sedimentary rocks are formed by the deposition of material at the earth's surface and within various water bodies.

2. Sedimentation is the collective name for the processes that causes mineral and organic particles to settle and accumulate.

3. Particles that form a sedimentary rock by accumulating are called sediments.

4. 1. Metamorphic rocks are formed when existing rock types are subjected to extreme conditions of temperature and pressure leading to change in physical and chemical condition.

2. The process is called metamorphosis and the type of rock formed in the process is called metamorphic rock.

5. 1. The protection of soil against agents of soil erosion like wind, water and human action is called soil conservation.

2. Some of the common ways of soil conservation are as follows:

(i) Growing grasses and creepers when fields lie bare in between two harvest seasons.

(ii) Encouraging step or terrace farming in hilly areas.

(iii) Afforestation or growing trees over hill slopes.

B. 1. Minerals are of two types. Metallic minerals like iron, copper, tin, bauxite, manganese, etc. Non-metallic minerals like coal and petroleum.

2. Metallic minerals are those minerals which can be melted to obtain new products.

3. Non-metallic minerals are those which do not yield new products on melting.

4. Petroleum is a naturally occurring mineral primarily made up of hydrogen and carbon.

5. Soil is the thin uppermost layer of material on the earth's surface in which plants have their roots.

C. 1. Minerals 2. Magma 3. Sedimentary 4. cotton 5. pumice

D. 1. ✓ 2. ✗ 3. ✓ 4. ✗

E. 1.(d) 2.(d) 3.(d) 4.(a) 5.(b)

## Chapter 10 : Simple Machines

1. 1. Machine is a device that helps us to do work very rapidly.

2. A simple machine is a machine that uses a single force.

3. It does not increase or decrease the amount of work but makes it easier through two methods:

(a) amount changing the direction of force.

(b) Increasing the distance and minimizing the amount of force needed.

4. **Ex:** A heavy box is easily loaded on to a truck, if we use a plank.

A steep climb is less tiring if it has steps.

2. There are six types of simple machines: Lever, pulley, inclined plane, screw, wheel and axle and wedge.

1. **Lever: Examples:** A hammer is a lever when it is used to pull a nail out of a piece of wood. Bottle openers, see-saw, etc. are also levers.

2. **Wheel and axle:** Examples: Cars, roller skates, door knobs, gears in watches, clocks and bicycles.

3. **Inclined plane:** Examples: Ramp, slanted roof, uphill path, slide.

4. **Wedge:** Examples: Fork, knives, axes and nails.

5. **Screw:** Examples: Jar lids, light bulbs, clamps, jacks,

spiral staircase, etc.

6. **Pulley:** Examples: Pulleys are used in flag poles, sailboats and cranes.

3. 1. A lever is a board or bar that rests on a turning point.

2. The turning point is called fulcrum.

3. An object that a lever moves is called load.

4. The force that is applied to an object is called effort.

5. The closer the object is to the fulcrum, the easier it is to move.

6. **Ex:** Hammer is a lever when it is used to pull a nail out of a piece of wood. Bottle openers and see - saw are also levers.

4. Levers are of three kinds.

1. **First-class lever:** When fulcrum is kept between load and effort, it is called first - class lever.

**Ex:** Scissors, claw hammer, piler, etc.

L F E

Load Fulcrum Effort

2. **Second-class lever:** When the load is put between the fulcrum and the effort, it is called second - class lever. **Ex:** Wheel barrow, bottle opener, nut cracker, etc.

F L E

(Fulcrum) (Load) (Effort)

3. **Third-class lever:** When effort is put between fulcrum and load, it is called third-class lever. **Ex:** Ice tong, fishing rod, forceps, etc.

F E L

(Fulcrum) (Effort) (Load)

5. 1. Pulley is made up of a wheel and a rope. The rope fits on the groove of the wheel.

2. One side of the rope is attached to load.
3. When we pull on one side of the pulley, the wheel turns and the load moves.
4. The pulley helps us to move the load up, down or sideways.
5. Pulleys are good for moving heavy objects.
6. It also makes the work of moving heavy loads a lot easier.
7. **Ex:** The crane uses a pulley to move a heavy ball. Without the use of a pulley, the ball would be hard to move.

8. Pulleys are also used in flag poles, sail boats, etc.

**B.** 1. The turning point on which a board or bar rests is called fulcrum.

2. Cars and clocks uses wheel and axle as a simple machine.

3. A wedge is a simple machine used to push too objects apart.

4. Jar uses simple machines like screws to hold the lid on its top. When we turn the lid, it moves up or down.

**C.** 1. single 2. lever 3. third 4. less 5. screw

**D.** 1. X 2. ✓ 3. X 4. X 5. ✓

**E.** 1.(c)✓ 2.(b)✓ 3.(b) ✓ 4.(b) ✓ 5.(a) ✓

**F.** 1. PULLEY 2. LEVER 3. WEDGE 4. MACHINE

5. FULCRUM

#### Chapter 1 : Safety and First - Aid

6. 1. If a person gets a minor cut or a deep cut I would help him as follows:

7. 1.

8. I will wash my hands before giving first - aid to an injured person.

9. 2.

10. I will try to remove all the dirt from the

wound with the help of small pads of cotton soaked in dettol or savlon.

11. 3.

12. I will cover the wound with the clean cotton dressing to stop the bleeding.

13. 4.

14. I will press on the point where the blood is coming from and keep on pressing it.

15. 2. If someone has a bleeding nose, I will-

16. 1. Mak

17. e him sit up straight.

18. 2. Lean his head forw

19. ard.

20. 3. Pinch the soft part of the nose ten minutes.

21. 4.

22. Prepare an ice pack by wrapping crushed ice cubes in a cloth. Apply the ice pack on the patients nose to reduce bleeding.

23. 3. Any break or crack in the bone is called fracture. For such an injured person having fracture, following precautions should be given:

24. 1. T

25. ell the person to keep the injured part still.

26. 2.

27. Support it to stop it moving - use hands, clothes or cushions.

28. 3.

29. If the fracture is in the hand, make a sling using a piece of cloth or bandage. The sling gives support to the arm.

30. 4.

31. If the patient has to be moved, he should be carried on a stretcher.

32. 5. T
33. take the patient to a doctor.
34. 4. 1. If I get a burn, I will cool the burn under running water for atleast ten minutes or I will apply ice cubes over the burnt area.
35. 2. I will apply an antiseptic lik
36. e Burnol.
37. 3. I will inform an adult about the accident.
38. 5. First -aid to be given in case of snake bite:
39. 1.
40. Tie a bandage just above the bite to stop the follow of blood to the heart and brain.
41. 2.
42. Do not move the victim. Any kind of movement will force the poison to spread faster in the victim's body.
43. 3.
44. Try to get the poison out from the wound as quickly as may be possible.
45. 4.
46. Consult a doctor immediately for anti-venom injections.
47. B. 1. First - aid is the help given to a person who has been hurt or is suddenly taken ill.
2. Any break or crack in the bone is called fracture.
3. The saliva of animals such as dogs, cats and monkeys contain virues of very dangerous disease called rabies. When these animals bite someone, rabies is caused because the viruses enter the victim's body through the animals salvia.
4. Sometimes, joints such as ankle get twisted and swell up. The tissues around the twisted joint are damaged. This is called sprain.

5. Burnol is an antiseptic ointment.

C. 1.injured 2.bone 3.antiseptic 4.viruses

D. 1. ✓ 2. ✓ 3. ✓

E. 1.(d)✓ 2.(a)✓ 3.(d) ✓

F. 1. Accidents 2. Fractures 3. First Aid

### Chapter 11 : Solar System

1. 1. Planets are the heavenly bodies that more around the sun.

2. These planets spin on their own axis and at the same time revolve round the sun.

3. Planets do not have their own light. They reflect the sunlight.

4. There are eight planets in our solar system. They are - Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.

2. 1. A star is a large ball of gases.

2. It gives out heat and light.

3. Many patterns of the stars are visible in the sky. These patterns are called constellations.

4. The stars we see in the night sky are part of a huge star cloud called Milky way galaxy which has billions of stars.

3. 1. The sun and the planets along with other heavenly bodies is called Solar System.

2. There are eight planets in our solar system. They are - Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.

4. 1. An asteroid is a large rock in the outer space.

2. They are small in terms of size and do not have enough gravity.

3. The asteroid belt is divided into an inner belt and an outer belt.

4. The asteroids of inner belt are made up of metals and those of outer belt are rich in terms of carbon.

5. 1. Satellites are small heavenly bodies that revolve around planets.

2. Planets like the earth, mars, jupiter, saturn, uranus and neptune have their own natural satellites.

3. The moon is a natural satellite of the earth.

**B.** 1. Indian names of planets:-

Mercury - Budh

Venus - Shukra

Earth - Prithvi

Mars - Mangal

Jupiter - Brihaspati

Saturn - Shani

Uranus - Arun

Neptune - Varun

2. Mercury is the nearest planet to the Sun.

3. Venus is the hottest and brightest planet.

4. "I" refers to Mars.

5. No. Planets do not have their own light. They reflect the sunlight.

**C.** 1.Stars 2.Mars 3.Jupiter 4.Saturn

5. Venus

**D.** 1. X 2.X 3. ✓ 4. ✓ 5. X

**E.** 1.(a)✓ 2.(a)✓ 3.(d) ✓ 4.(d) ✓

## Chapter 12: Satellites

1. 1. The moon is much smaller than the sun though it appears to be of the same size as that of the sun.

2. This is because the moon is closer to the earth than Sun.

3. The moon is not a light source as it does not have its own light.

4. The moon reflects the lights coming to it from the sun.

5. We can see the moon because the light from the sun bounces back towards the earth.

6. In the absence of sun, the moon would not be visible.

2. 1. The moon's gravity is one - sixth of the gravity of the earth. So, we cannot stand firmly on its surface.

2. Only traces of water was discovered on the surface of the moon which is not sufficient and suitable for life to exist on the moon.

3. The side of the moon facing the sun is extremely hot and the side away from the sun is too cold to support life.

4. The absence of atmosphere surrounding the moons surface makes us prone to harmful radiation from sun, extreme weather conditons and falling meteors.

5. In the absence of air, no sound can be heard on the moon. It is a lonely and silent place without any animal, plants or water bodies.

6. These conditions make life difficult to exist on the moon.

**3. Solar eclipse:**

1. Solar eclipse occurs when the sun, the moon and the earth come in a straight line.

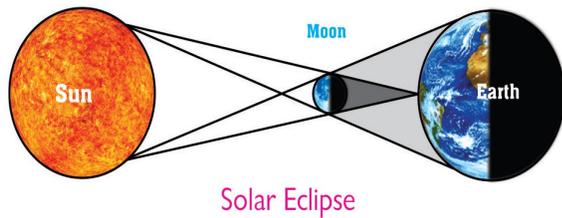
2. The moon acts as an opaque object.

3. When the sun's rays falls on the moon, it blocks the rays from reaching the earth.

4. A shadow of the moon is formed on the earth.

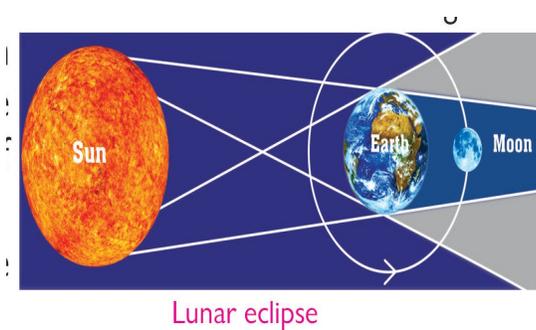
5. When the earth is completely hidden by the shadow of the moon, it is called total solar eclipse.

6. When the earth is partially hidden by the shadow of the moon, it is called partial solar eclipse.



4. Lunar eclipse:

1. The lunar eclipse occurs when the sun, the earth and the moon come in a straight line.
2. The earth acts as an opaque objects.
3. When the sun's rays fall on the earth, it stops these rays from reaching the moon.
4. A shadow of earth is formed on the moon.
5. When the moon is completely hidden by the shadow of the earth, it is called total lunar eclipse.
6. When the moon is partially hidden by the shadow of the earth, it is called partial lunar eclipse.



5. 1. A satellite is an object that goes around or orbits a planet.
2. Natural satellites and hundreds of man-made satellites also orbit the earth.
3. Many of the planets of our solar system have more than one satellite of varying sizes.

4. The moon is the earth's only natural satellite.

- B.** 1. The fixed paths around the sun are called orbits.
2. 1. During quarter moons, the gravitational forces of the sun and the moon oppose each other to produce the lowest tides called neap tides.
  2. During full and new moons, the gravitational forces of the sun and moon combine to produce the highest tides, called spring tides.
  3. When the bright part of the moon is getting bigger, the moon is waxing and when it is getting smaller, the moon is waning.
  4. A lunar month is the time the moon takes to pass through a complete cycle of its phases. Its cycle is measured from new moon to complete to new moon. A lunar month is about 29.5 days.

**C.** 1.Sun and planets 2.east and west 3.27 4.Milk moon

**D.** 1. ✓ 2. ✗ 3. ✓ 4. ✓

**E.** 1.(a)✓ 2.(d)✓ 3.(c) ✓

### Chapter 13 : Our Environment

1. 1. A green house is a house made of glass.
2. It has glass walls and a glass roof.
3. People grow tomatoes, flowers and other plants in them.
4. A green house is warm inside, even during winters.
5. The sun's rays pass through the glass and warm up the inside of the house.
6. The heat is trapped by the glass and does not escape.
7. So, during day light hours, the air gets warmer and warmer inside a green house and remains warm at night too.

2. 1. Earth's atmosphere acts like a green house.
2. Gases present in the atmosphere such as carbon dioxide acts like a roof of the earth.
3. During the day, the sun shines through the atmosphere and earth's surface is heated up in the sunlight.
4. At night, the earth's surface cools and releases the heat back to air.
5. But some of the heat is trapped by the green house gases in the atmosphere. It keeps our earth warm and cozy.
6. It also keeps the temperature moderate thus making the condition suitable for survival of life forms on the earth.

**3. 1.** Gases that help in causing green house effect are called green house gases.

2. These gases either occur naturally or are produced on the earth due to human or natural activities.
3. Water vapour, carbon dioxide, methane, nitrous oxide and ozone are green house gases.
4. These green house gases trap some of the heat in the atmosphere and keeps our earth warm and cozy.
5. They also keep the temperature moderate thus making the condition suitable for survival of life forms on the earth.

**4. Green house effect:**

1. The earth is wrapped in a blanket called atmosphere which is made up of several layers of gases.
2. The sun is much hotter than the earth and gives out heat that travels through the atmosphere and reaches the earth.
3. The rays of the sun warms the earth and heat from the earth travels back into the atmosphere.

4. The gases in the atmosphere stop some of the heat from escaping into space.

5. These gases are called green house gases and the natural process between the sun, the atmosphere and the earth is called green house effect.

**5. Effects of Global Warming:-**

1. The planet will become warmer and the weather all over the earth will change. Water cycle pattern will get disturbed, resulting in more rainfall.
2. Water of the seas and oceans expand. Ice melting in the Antarctica and Greenland will rise threatening the low-lying coastal areas to submerge.
3. Types of crops grown in different parts of the world will be affected.
4. Homes of plants and animals will be affected all over the world. Some special plants and animals may become extinct.
5. Changing climate will have adverse effects on human species living along the coastal areas.

**B. 1.** Increase in more and more green house gases in the atmosphere leads to rise in temperature of the earth. This is known as global warming.

2. The process of damaging environment is called environmental degradation.
3. Cutting of forest trees on a large scale or the clearance of forest land for different purpose is called deforestation.

**C. 1.** Ultraviolet and infrared

2. Water vapour and nitrous oxide
3. Ozone
4. Methane
5. Chlorofluorocarbons

D. 1. Ultraviolet 2. Ozone 3. Green House 4. Revolution

5. Methane 6. Carbon

E. 1. 7 2.3 3. 3 4. 3 5. 3

F. 1.(a)3 2.(a)3 3.(a) 3 4.(d)3 5.(d)3

## Chapter 14 : Natural Calamities

1. 1. An earthquake happens when two blocks within the earth suddenly slip past one another.

2. The earth has four major layers: Inner core, outer core, mantle and crust.

3. The crust and top of the mantle make up a thin layer on the surface of our planet.

4. But this layer is not one piece. It is made up of many pieces.

5. These pieces keep moving around slowly, sliding past one another and bumping into one another on some occasions.

6. These pieces are called tectonic plates and the edges of plates are called plate boundaries.

7. The plate boundaries are made up of many faults and most of the earthquakes around the world occur on these faults.

8. Since the edges of the plates are rough, they get stuck while the rest of the plates keep moving.

9. Finally, when the plate tends to move far enough, the edges dissociate on one of the faults and there is an earthquake.

### 2. Effects of Earthquake:

1. An earthquake sends shock waves that are strong enough for altering the surface of the earth, thrusting up cliffs and opening deep gorges in the ground.

2. Causes great damage like the collapse of buildings and other man - made structures.

3. Causes the break down of power and gas lines thus causing fire.

4. Causes land slides, snow avalanches, tsunamis and volcanic eruptions.

### 3. Safety procedures during the course of an earthquake:

1. Do not try to run out of the building when you are inside your house.

2. Get under a bed or table. Cover your head and face with the help of a pillow, newspaper, blanket, etc., to protect yourself from falling debris.

3. Never use the elevator during the course of an earthquake because electricity supply may be cut off leaving you stuck up in the elevator.

4. Stay at a place till the earthquake stops, if you are outdoors. Do not stay near walls, buildings, lamp posts, power poles, etc.

4. Types of Volcanoes: There are two different types of volcano - active volcano and extinct volcano.

**1. Active volcano:** It is a volcano that has at least one eruption during the past 10,000 years. An active volcano could be erupting or dormant.

**(a) Erupting Volcano:-** It is an active volcano that is having an eruption. Ex: Etna of the Mediterranean Sea.

**(b) Dormant Volcano :-** It is an active volcano that is not erupting but is supposed to erupt again. Ex: Fujiyama in Japan.

**2. Extinct Volcano:** Volcano that has not erupted for atleast 10,000 years and is not expected to erupt again in a comparable time scale of the future.

Ex: Popa in Myanmar and Mt. Kneya.

### 5. Causes of Tsunami:

1. The drop down and upthrust of the earth's crust

result in earthquake. The vast majority of tsunamis occur due to earthquakes.

2. A large -scale under sea landslide also triggers tsunami.

3. Under sea volcanic eruption of a certain degree also results in a tsunami.

**6. Causes of flood:**

1. Heavy rainfall.

2. Heavy snow melting.

3. High tides, storms, cyclones, etc. in coastal areas.

4. Deforestation.

**B. 1. Hypocenter:-** The location below the earth's surface where the earthquake starts is called hypocenter.

**2. Extinct Volcano:-** Volcano that has not erupted for atleast 10,000 years and is not expected to erupt again in a comparable time scale of the future.

Ex: Popa in Myanmar and Mt. Kenya.

**3. Epicenter:-** The location directly above the hypocenter on the surface of the earth is called epicenter.

**4. Lava:-** The liquid rocks and gases that flow out of a volcano are jointly called lava.

**5. Tectonic Plates:-** The crust and top of the mantle make up a thin layer on the surface of our planet. This layer is made up of many pieces that keep moving around slowly, sliding past one another and bumping into one another on some occasions. These pieces are called tectonic plates.

6. **Volcano:-** A volcano is a land form(usually a mountain) where molten rock erupts through the surface of the earth.

**C. 1. Extinct**

2. Cracks 3. Epicenter

4. Richter scale

5. Natural

**D. 1. Tsunami 2. Epicenter 3. Volcano 4. Seismograph**

5. Dormant

**E. 1. ✓ 2. ✓ 3. ✓ 4. X 5. X 6. ✓ 7. X**

**F. 1.(b)✓ 2.(a)✓ 3.(a) ✓**