SCIENCE (CLASS-5)

CHAPTER-1 – PLANTS – INCREASING THE NUMBERS

Let us Answer

A. Tick (✓) the correct answer.

1. (c) 2. (b) 3. (a) 4. (c) 5. (b) 6. (c)

B. Fill in the blanks :

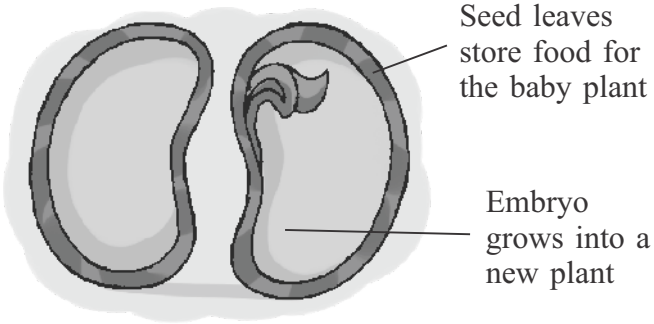
1. seed coat 2. embryo 3. seedling
4. bryophyllum 5. pesticides, insecticides 6. air tight

C. Write short answers :

1. Plants produce so many seeds because all the seeds do not grow into new plants.
2. Dicots are seeds with two leaves. Grams and peas are examples of them.
3. The development of seed into a seedling is called germination.
4. Seeds germinate when they get air, water (moisture) and warmth (sunlight) in a sufficient amount.
5. The various agents of dispersal are wind, water, animals and explosion of fruits.

D. Answers these questions :

1.



2. A seed has an outer covering called the seed coat which protects the seeds. On removing the seed coat of a gram, we will be able to see two seed leaves or cotyledons. Now If we separate them, we find a baby plant inside called embryo. The embryo has tiny root and a ting shoot.

   The cotyledons store food for the baby plant. As long as the baby plants does not grow green leaves it depends on the food stored in the seeds. Some seeds have one leaf, while some have two seed leaves.

3. Plants produce so many seeds because-
   (i) when they are separated from their parent plants, some of them are not fully grown :
   (ii) some seeds are destroyed by strong winds and heavy rains.
   (iii) some seeds are eaten by animals, insects and birds.
   (iv) some seeds do not get the right condition to germinate

4.

	Kharif Crops	Rabi Crops
1.	The crops which are grown in summer are called kharif crops.	The crops that are grown in winter are called rabi crops.
2.	Examples - rice, maize, jower, bajra, etc.	Examples– wheat, barley, gram, etc.

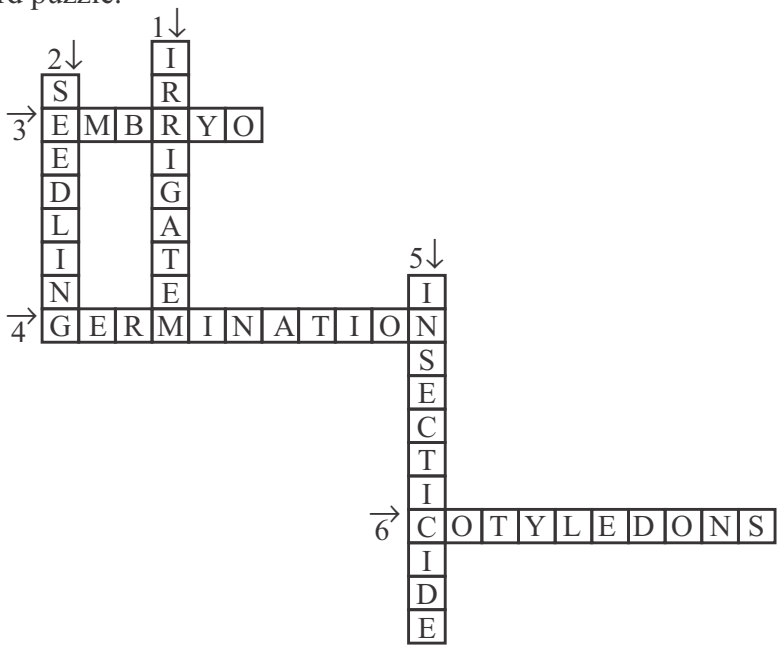
5. The process of growing crops on a large scaled in order to feed the entire population of the country is called agriculture.
   (i) Pesticides and insecticides are sprayed to protect plants from pests.
   (ii) Fences are built around the fields to protect the crops from stray–animals. After harvesting grains or seeds need to be protected from moisture, rats, insects, birds, etc. Therefore, the grains are stored in airtight sealed containers.

HOT QUESTIONS

E. 1. More rice is grown in and around West Bengal because the climatic conditions and type of soil available in this area are suitable to grow rice. The area also gets good amount of rainfall.
   2. A watermelon has many seeds. Each watermelon seed can grow into new plant, but it does not happen because all the seeds of this watermelon do not get the chance to grow into new plants. Most of its seeds are ate up by animals and birds.
   3. We can't grow tea in Rajasthan because the climate conditions and the type of soil of the state are not suitable for growing tea.

Let us Try

F. Solve the crossword puzzle.



G. Do it yourself.

H. Do it yourself.

CHAPTER-2 – FOOD AND HEALTH

Let us Answer

A. Tick (✓) the correct answer.

1. (b) 2. (c) 3. (c) 4. (a) 5. (b) 6. (b) 7. (c)

B. Fill in the blanks :

1. balanced diet 2. sugar, starch 3. plant
4. malaria 5. pasteurization 6. outdoor

C. Match the following :

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

D. Write the short answer :

1. A disease is an abnormal condition in which the body in unable to function properly.
2. A diet containing all the nutrients in the right amount is called a balanced diet.
3. The diseases which can pass from one person to another are called communicable diseases.
4. The lack of particular minerals or vitamins in the body causes diseases. These diseases are called deficiency diseases.
5. Vaccination can prevent or protect the body against certain diseases even if disease-cauring germs outer the body.

E. Answer these questions :

1. Regular exercise help us to gain good health. Exercises build strong muscles and bones. During exercise air is pumped in and out of the lungs at a faster rate. Thus more oxygen is taken in and more carbon dioxide and water vapour are given out. Moreover our blood circulation increases. Exercise also helps the nervous system by supplying more oxygen to the brain.
2. The two ways by which the communicable diseases spread are as follows :
   (i) Through Direct Contact : Certain diseases like chickenpox, measles, ringworm, scarlet fever, whooping cough and common cold spread through direct contact between the healthy person and the infected person.
   (ii) Through Infected Food and Water : Food and water get contaminated when they are not stored properly. Flies an cockroaches carry germs from sewers and contaminate our food and water. When the contaminated food is consumed, it can cause diseases like cholera, diarrhea, polio and jaundice.
3. The following precautions should be taken to check the spread of malaria :
   (i) Water should never be allowed to strange as it becomes a breeding ground for mosquitoes. Mosquitoes lay eggs in the standing water.
   (ii) In order to destroy the mosquito larvae, the surface of the water in the tanks and ponds must be sprayed with oil.
   (iii) Always use a mosquito net or a mosquito repellent at night to keep safe yourself from mosquitoes.
4. The houseflies play a vital role in spreading diseases. They carry germs from sewers and other dirty places and contaminated our food. When the contaminated food is consumed, it can cause diseases like cholera, polio, diarrhoea, jaundice etc.

5. A healthy person can catch whooping cough from a diseased person through infected air. When a diseased person coughs the germs are released into the air. When the healthy person breathes in this air, the germs enter his body leading to the disease.
6. Seema is suffering from anaemia. This is caused by the deficiency of iron in food. Seema should eat iron rich food like grapes, apples, bananas, dates, meat, spinach, etc. to get rid of this disease.

HOT QUESTIONS

F. 1. Anita's mother did not allow Khushid to play with Anita and she also used separate utensils to serve food to Anita, because Anita was suffering from chickenpox, a communicable disease. Her mother did so to keep Khurshid safe from the disease of chickenpox.
2. I do not think Karan is doing the right thing because games or exercise are necessary to keep the body healthy and fit.

Let us Try

G. Do it yourself.
H. Do it yourself.

CHAPTER-3 – SAFETY AND FIRST AID

Let us Answer

A. Tick (✓) the correct answer.
1. (b) 2. (c) 3. (b) 4. (a) 5. (c)

B. Fill in the blanks :
1. First-aid 2. accidents 3. crosspiece 4. blisters 5. sprains

C. Write short answers :
1. First-aid is the immediate help given to an injured person before the doctor arrives.
2. A sprain is a twist in a joint, such as the ankle or wrist.
3. Minor burn can be treated at home. Immediately put the burnt area under running cold water till the pain subsides. Then apply and antiseptic lotion or paste of baking soda and water.
4. In case of sprain, keep or applying ice-packs or ice-cubes on the injured joint till the swelling subsides.
5. Rabies.

D. Answer the questions :
1. The following first-aid should be given in case of cuts and scratches :
(i) Wash the dust around the wound properly.
(ii) Clean the affected area with cotton wool sooked in an antiseptic lotion.
(iii) Cover the wound with cotton wool and bind it with a bandage on a clean handkerchief.
(iv) If the cut is deep, it may bleed more. In this case use a tourniquet to stop the bleeding.
2. The following steps should be taken in case of animal bite :
(i) Wash the wound with soap and water to remove the germs, as the virus causes hydrophobia or rabies.

(ii) Then apply an antiseptic lotion to prevent infection. Bandage the wound with a sterilize gauze. Rush the victim to a doctor.

3. The following first-aid should be given in the case of nose bleed :
   (i) Keep the victim upright in a comfortable position with his head held back.
   (ii) Pinch the bridge of the nose firmly.
4. A break or crack in the bone is called a fracture. In case of fracture the following things should be done :
   (i) Keep the patient calm and do not let the patient move the fractured part.
   (ii) Apply a splint to give support to the broken bone. Any easily available article like sheets of newspaper, magazines, a piece of cardboard or a pillow around the injured bone can also act as a splint.
   (iii) A sling of made from a triangular piece of cloth can be used for support.
5. The following first-aid should be given is cause of a snake bite :
   (i) Let the poisonous blood flow out and do not try to stop the wound from bleeding.
   (ii) Tie a tourniquet just above the bite to stop the flow of blood to the heart. This may help to slow down the spread of poison.
   (iii) Immediately take the victim to the nearest doctor. Always takes precautions while walking through areas where snakes are found. Wear high boots to protect your feet.
6. A fire can be put out by the following methods :
   (i) If a fire has been caused by defective wiring or an electric gadget. Do not throw water on it. This can cause electrocution. Immediately turn off the main switch. Throw sand on it or use a fire extinguisher.
   (ii) In a case fire is caused by petrol, do not throw water on it, instead put out the fire by throwing lots of sand or mud on it.
   (iii) In case, there is a fire in the building, inform the nearest fire station.

HOT QUESTIONS

E. 1. In case of petrol fires, water is not suitable for extinguishing the fire because it is lessdense than water and will float in water. As water will spread such the oil will spread and the fire will become more uncontrolable.
   2. Aman is five years old boy. His mother keeps all the medicines out of his reach because he may eat any medicine and fall in a trouble. So Aman's mother does it for his safety.
   3. Reema's teacher had thought her that is case of gas leak, electrical switches should not be operated. She thinks correctly because in case of gas leak if we operate electrical switches the gas can catch fire and a fire accident may occur. As we know that when an electrical switch is operated it emit sparks.

Let us Try

F. Do it yourself.
G. Do it yourself.
H. Do it yourself.

ACTIVITY TIME–I

A. Do it yourself.

B. Complete the following.

Nutrient	Found in			
Carbohydrate	Potato	Wheat	Rice	Sugar
Protein	Fish	Checken	Egg	Milk
Vitamin A	Mango	Papaya	Tomato	Milk
Vitamin C	Tomato	Amla	Potato	Pulses
Iron	Grapes	Apples	Dates	Spinach

C. Do it yourself.

CHAPTER-4 – HOUSES ALL AROUND

Let us Answer

A. Tick (✓) the correct answer.

1. (b) 2. (b) 3. (c) 4. (b) 4. (c)

B. Fill in the blanks :

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

C. Write short answer :

1. We need a house to live in.
2. The houses in plains have thick walls because these kinds of walls keep the houses cool from inside in summers.
3. Stilts are wooden pillars. A house made on a stilts is called a stilt house. They are found in flood prone areas.
4. The houses in hilly areas have sloping roofs because such roofs do not allow rainwater or snow to collect and make house damp and cold.
5. Cooperative housing societies construct houses for the people at a reasonable cost.

D. Answer these questions :

1. The three main factors which determine the type of house we build are as follows :
   (i) The climate of the place
   (ii) The materials to be use and
   (iii) The budget available to use
2. Bricks, cement, stones, marble, metals like iron, wood, etc. are some building materials used to build a house.
3. The following things should be kept in mind before the construction of a house :
   (i) The doors and windows of the house must be in a direction such that fresh air and sunlight can enter every room.
   (ii) The walls of the house must be strong, damp proof and well-plastered.
   (iii) Doors and windows must be fitted with grills in order to make the house safe.
   (iv) It should have good drainage system. All the drains should be covered.

4. The following things should be kept in mind once the house gets constructed :
   (i) The house should be kept clean in order to prevent the spread of diseases.
   (ii) The house should be kept germ-free. The floors must be swept and mopped everyday using a disinfectant.
   (iii) The kitchen, the bathrooms and the latrine must be washed and disinfected regularly.
   (iv) The doors, windows and walls must be dusted regularly. Dirt and dust make the house unclean.

E. 1. I would give him an advice to fit the large glass windows with grills in order to make them safe.
   2. Mr. Kung Fu is going to face loss of life and property because a house made from bricks and cement is not a safe in an earthquake prone area. The collapse of a such house during an earthquake may cause a serious loss. In such areas people mostly make wooden houses.

Let us Try

F. We need to take care of certain paints before (B), during (D) and after (A) building a house. Write B. D or A against each statement :

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

G. Do it yourself.

CHAPTER-5 – SOLIDS, LIQUIDS AND GASES

Let us Answer

A. Tick (✓) the correct answer.
   1. (b) 2. (c) 3. (c) 4. (c) 5. (b)

B. Fill in the blanks :
   1. matter 2. atoms 3. water 4. physical change 5. compound

C. Write T for true and F for false statements.
   1. (T) 2. (T) 3. (T) 4. (F)

D. Write short answers :
   1. Anything that occupies space and has mass is called matter.
   2. Molecules are extremely small invisible particles which make all the matters.
   3. The liquids can flow because the molecules of them can move around freely.
   4.

	Physical Change	Chemical Change
1.	A physical change is a temporary change that can be reversed.	A chemical change is a permanent change in the in the state of a matter.
2.	No new substance is formed.	A new substance is formed.

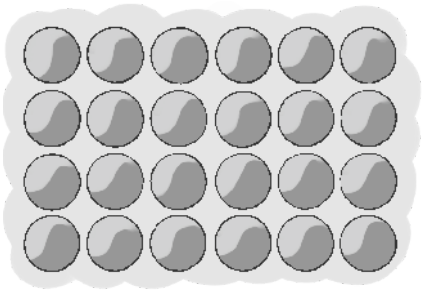
   5. Names of two solids that can dissolve in water are sugar and salt. Names of two liquids that can dissolve in water are glycerine and alcohol.

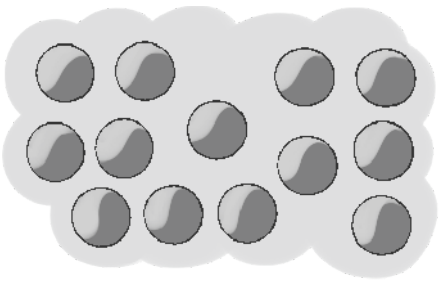
      Names of two gases that can dissolve in water are oxygen and carbon dioxide.

E. Answer these questions :

1. **Particle arrangement is solids–**

In solids, the molecules are closely packed with very little space between them. The molecules attract each other with great force as a result they cannot move freely or away from each other. Hence, solids have a fixed shape and definite volume.



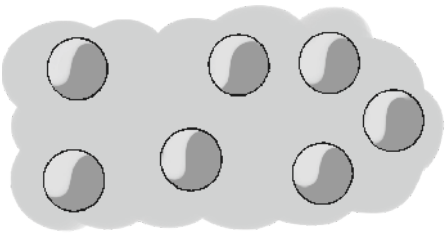


2. **Molecules arrangement in liquids–**

In liquids, the molecules are not packed closely together. The attraction between the molecules in liquids is less as compared with that in solids. Molecules can move around freely due to which the liquids can flow. A liquid has a definite volume but no definite shape. It takes the shape of the container.

3. **Molecules arrangement in gases–**

In gases, molecules are very loosely packed. Hence, they are separated by large empty space. The force of attraction between the molecules of a gas is so less that the molecules are free to move in any direction. Thus, gases have no fixed shape or volume and free to flow in any direction.



4. When we boil water, bubbles are formed on the side of the vessel and at the bottom of the water. These bubbles are actually of the dissolved gases that separate from water on heating.
5. When we burn a piece of paper, it change into ash. The molecules of paper are different from the molecules of ash. Therefore the burning a piece of paper is a chemical change.

HOT QUESTIONS

F. 1. Water cannot dissolve paint in it but turpentine is a paint. solvent. The paint molecules find space between the molecules of turpentine thus, it helps to get the paint off the hands.

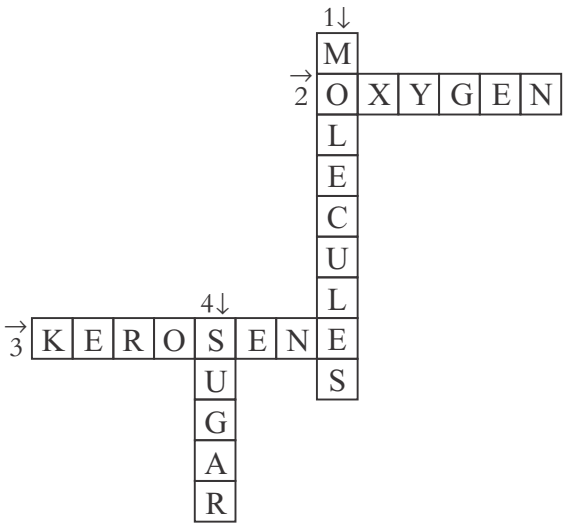
2. The level of water will not change because sugar does not take up extra space. Its molecules only fill up the empty spaces between the molecules of water.

Let us Try

G. Do it yourself.

H. Do it yourself.

I. Solve the crossword puzzle by reading the clues given below :



J. Do it yourself.

K. Write P against physical changes and C against the chemical changes

1. P 2. C 3. C 4. P 5. P 6. C

CHAPTER-6 – SOIL EROSION AND CONSERVATION

Let us Answer

A. Tick (✓) the correct answer.

1. (b) 2. (b) 3. (b) 4. (c) 5. (c)

B. Fill in the blanks.

1. soil 2. air and hard rocks 3. fertility
4. rivers, lakes 5. grass, creepers

C. Write short answers :

1. The process of breaking down of rocks under the action of wind, water and temperature changes in called weathering.
2. Soil erosion is the process by which to the top fertile layer of the soil is washed away by moving water or wind.
3. Floods damage crops and carry away top soil leaving the poor farmer with less fertile soil for the next season of crop.
4. The protection of soil against erosion is called soil conservation.
5.

Deforestation	Afforestation
The act of cutting or burning the tree in an forest area is called deforestation.	The process of planting areas of land with trees in order to form a forest is known as afforestation.

D. Answer these questions :

1. The soil formation is a long process. Due to the action of wind, water and temperature, the rocks broke down into small pieces. These small pieces further broke into still smaller pieces. They were carried around by wind and water. They rubbed against each other till they became tiny particles which we call soil. Soil formation takes million of years.
2. Human activities also cause soil erosion. Roots of trees and plants hold the soil together. Feeling of trees or deforestation is a major cause of soil erosion. when trees are cut down the soil becomes loose and is easily carried away.

   The ploughing of hill slopes is get another human factor that leads to soil erosion. Overgrazing by cattle also causes soil erosion.
3. Floods are caused by heavy rains. During the monsoon when it heavy rain many rivers overflow and the water spreads in the nearby areas. In this way these areas face serious floods.
4. Wind is an agent of soil erasion because when it blows in a great speed, it carries away the top fertile sail from the fields and leaving the layer havent.
5. The tree ways to conserve soil are :
   (i) Plants more trees. Roots of plants hold the soil firmly and do not allow it to be washed away with water.
   (ii) Step farming should be practiced on hill slopes. Steps reduce the speed of running water. As the water stays on the steps, it gets absorbed by the roots of plants, or seeps through the soil.
   (iii) In the plains, fast winds blow away the soil. Tall trees should be planted in a row to reduce the speed of the wind. This prevent soil from blowing away with the wind.

HOT QUESTIONS

E. 1. The farmers grow hedges along the boundry of their farms because they reduce the speed of the wind which cause soil erosion.

2. In rocky areas trees grow in rocky soil which is present in cracks of rocks. No one waters these trees, they get water from the rain to survive in those regions.
3. We celebrate 'Earth Day' on 22nd April.

Let us Try

F. Do it yourself.

G. Do it yourself.

CHAPTER-7 – ROCKS AND MINERALS

Let us Answer

A. Tick (✓) the correct answer.

1. (c) 2. (c) 3. (b)

B. Name the following :

1. magma 2. Granite 3. Shale 4. Calcium Carbonate 5. Petroleum

C. Write short answers :

1. The three kinds of rocks are igneous rocks, sedimentary rocks and metamorphic rocks.
2. The three minerals present in granite are quartz feldspar and mica.
3. In India, coal mines are located in Jharkhand, Madhya Pradesh, West Bengal, Tamil Nadu and Andhra Pradesh.
4. Petroleum is obtained by drilling holes called oil wells into the earth's crust.
5. In India, petroleum is obtained from Ankaleshwar in Gujarat, Digboi in Assam and Bombay High on the Mumbai coast.

D. Answer these questions :

1. The igneous rocks are formed from magma. Deep inside the Earth rocks are present in the molten state. These hot, molten rocks present in huge underground pockets of the earth are called magma. Due to the intense pressure of other rocks magma is pushed towards the surface. Some of it cools and hardens below the surface of the earth while some flows out on the earth's surface and then hardens to form igneous rocks. Granite is an example of igneous rocks.
2. As the weathering of rocks occur due to the action of wind and water, the broken rocks and stones flow down the rivers and streams. River and streams flow to lakes and seas carrying tiny particles of rocks, solid and dissolved minerals with them. These particles make a layer at the bottom of lakes and seas. As more and more layers sediments pile up, the layers below get squeezed together. Due to the continuous pressure, the bottom layers harden, leading to the formation of sedimentary rocks. Sandstone and shale are two example of these rocks.
3. Metamorphic rocks are formed from igneous or sedimentary rocks. When the igneous and sedimentary rocks are subjected to increase heat and pressure inside the earth, the minerals present in those rocks undergo a change and they turn into metamorphic rocks. Slate and marble are two examples of these rocks.
4. Metals are extensively used in making cycles, scooters, cars, buses and aeroplanes. They are also used to make wires, coins and furniture.

   Precious metals like gold, silver and platinum are used for making jewellery
5. Coal is one of the most valuable minerals stored in the earth. Millions of years ago, the land was covered with swamps. Many plants grew in the swamps. As they died they fell into the swamps are were soon covered with layers of soil and more dead plants. Over the years, because of the heat and pressure, they get converted to coal.

   Petroleum is formed from the remains of ancient land and sea animals. Millions of years ago, these animals got buried under the surface of the earth. The intense heat and pressure slowly them into petroleum.
6. Few ways to converse the fossil fuel-coal and petroleum.
   (i) Coal and petroleum should be used carefully.
   (ii) We should use the inexhaustible sources of energy like the sun, the wind and water.
   (iii) We should keep our vehicles in good condition as they will use less fuel.

HOT QUESTIONS

E. 1. Pumice is formed when the lava cools quickly with a lot of air trapped within it. It has many holes in it, which makes it very light and helps it to float on water.

2. Granite is commonly used for making kitchen counters and floors because it is a hard rock and a good building material. Limestone cannot be used to make kitchen counters because it is a soft rock.

F. Do it yourself.

CHAPTER-8 – ANIMALS EVERYWHERE

Let us Answer

A. Tick (✓) the correct answer.

1. (c) 2. (b) 3. (b) 4. (a) 5. (c) 6. (a)

B. Fill in the blanks :

1. habitat 2. spiracles 3. snakes 4. forelimbs 5. migration

C. Match the columns :

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

D. Write short answers.

1. The home or the natural surroundings of an animal is called its habitat.
2. The air holes found along the sides of insect's body are called spiracles.
3. Fish breathe is water through their gills.
4. Frog breathe in water through their moist skin and on land they breathe through their lungs.
5. Animals move from a one place to another in search of food and shelter and to protect themselves from being hunted.
6. Animals migrate to escape harsh weather, to search for food and to reach their breading grounds.

E. Answer these questions :

1. Human beings take in air through the nose. This air entres the lungs through the wind pipe, Exchange of gases takes place in the lungs. The lungs are richly supplied with blood vessels. Oxygen from the air passes into the blood and carbon dioxide from the blood passes into the air.
2. Herbivores like cows, goats and giraffe have sharp front teeth to bite and strong broad teeth to chew green plants.

   The carnivores like lion, tigers have sharp, pointed and curved teeth for tearing flesh. They also have grinding teeth to chew the flesh and bones.
3. The following special features help water animals to move :
   (i) A fish used of its fins for swimming. The paired fins help it to move forward and unpaired fins help it to keep its balance. Tail fin helps it to change the direction.
   (ii) Frogs and aquatic birds use webbed feet to swim.
   (iii) Turtles have four paddle-like limbs to push water back and to swim.

4. Snakes are reptiles and they do not have legs. They have scaled or plates on the underside of their bodies. As the snake moves forward or backward the scales push against the ground. This helps it to grip the ground and to move its body.
5. The following features help most of the birds to fly :
   (i) Most birds do not weight much compared to their body size because their bones are light and hollow.
   (ii) Their wings are attached to the breastbone of them with the help of strong muscles. These muscles enable them to flap their wings and to fly.
6. The mass movement of some animals over thousands of miles at certain times of the year is called migration. Migration is most common in birds. The Europes stork travels from Europe to Africa every winter. During spring, it returns to Europe to the same nest.

   The Arctic terms travel a distance of nearly 35,000 km between the Arctic and the Antarctic twice a year.

HOT QUESTIONS

F. 1. fish and whale both are aquatic animals, yet they are different from each other because whale is a mammal.
2. Insects are the small organisms which have six legs. but spiders have no six legs, they have eight legs. On the basis of this, we can say that the spider is not an insect.
3. Jelly fish is really a fish.

Let us Try

G. Write in the correct column the names of the animals given in the box.

Lungs	Gills	Spiracles	Body surface
elephant crow monkey pigeon camel crocodile dolphin whale bat frog	prawn tadpole shark frog	cockroach grasshopper butterfly spider honeybee	amoeba paramecium

H. Do it yourself.

I. Do it yourself.

CHAPTER-9 – OUR SKELETON SYSTEM

Let us Answer

A. Tick (✓) the correct answer.

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

B. Fill in the blanks :

1. organ system 2. vertebrae 3. rib cage 4. radius, ulna 5. hinge

C. Complete the following :

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

D. Write short answers.

1. The different parts of a skeleton are the skull, the backbone, the rib cage, the limbs and the girdles.
2. The lowest two pairs of ribs in our rib cage are called floating ribs. They are joined only to the backbone.
3. The place where two or more bones meet is called joint.

Movable Joint	Immovable Joint
Joint that allow free movement of bones are called movable joints. This happen because of a fluid which acts like a-lubricant.	Immovable joints are those which do not allow free movement of bones. As the bones in the skull except the lower joints jaw) are interlocked making the joints immovable.

4. The lower jaw is movable part of the facial region.
5. The muscles are joined to the bones with the help of tissues called tendons.

E. Answer these question :

1. The main functions of skeleton are :
   (i) The bones of skeleton give shape, strength and support to our body.
   (ii) They protect the delicate organs. The skull covers the delicate brain, the backbone protects the spinal cord and the rib cage protects the lungs and the heart.
   (iii) The bones are attached to the muscles and help in movement.
2. The backbone is mole up of 33 small bones called vertebae which is turn form a strong column called the vertebral column. Each bone of the vertebral column has a hole in the centre through which the spinal cord passes.
3. Forelimbs are our arms. They are joined to the spine by the help of shoulder girdles which consists of a pair of shoulder blades and a pair of collarbones.
4.

	Ball and socket joint	Hinge joint
(i)	A ball and socket joint is very flexible and allow movement in almost in all directions.	A hing joint is similar to the hinges present in a door. It allows only back and forth movement.
(ii)	The hip and shoulder joints are of this type.	The elbows, knees, fingers and toes have hinge joints.

5. **Voluntary muscles :** These muscles are under our conscious control. Our legs, neck, shoulders have voluntary muscles.
   Involuntary muscles : These muscles are not under our control, they move on their own. The muscles in our stomach and intestines are example of such muscles.

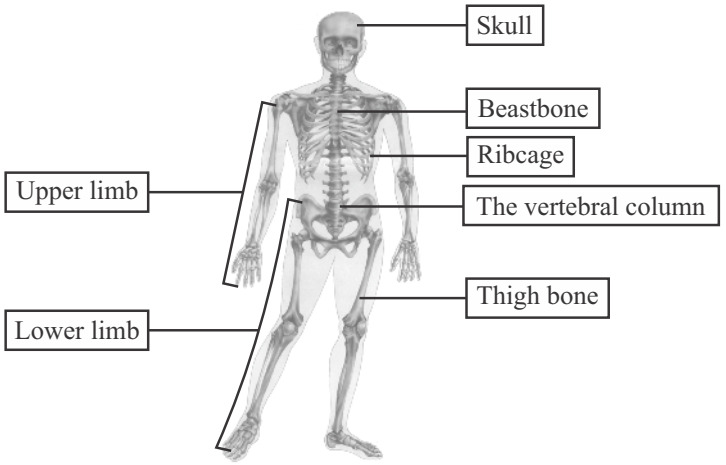
HOT QUESTIONS

F. 1. If our body had only the skeleton system but no muscular system, movement would not be possible. As we know that our bones got movement with the help of muscles.

2. If our backbone is made up of just one long bone we would find ourselves unable to bend it.

Let us Try

G. Label the different parts of the human skeleton system.



H. Which joints help you to do the following actions ?

1. Ball and socket joint 2. Pivot joint 3. Gliding joint
4. Hinge joint 5. Ball and socket joint and hinge joint

I. Do it yourself.

J. Do it yourself.

CHAPTER-10 – OUR NERVOUS SYSTEM

Let us Answer

A. Tick (✓) the correct answer.

1. (c) 2. (a) 3. (c) 4. (c) 5. (c)

B. Fill in the blanks :

1. brain, spinal cord, nerves 2. reflex actions 3. Nerves
4. mixed nerves 5. sense organs

C. Mark the following as true or false :

1. false 2. true 3. false 4. true 5. true 6. false

D. Write short answers :

1. The nerous system consists of the brain, spinal cord and nerves.

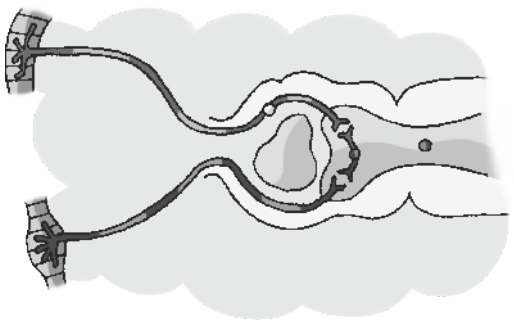
2.

Sensory Nerves	Motor Nerves
These are the nerves which bring message from the sense organs to the brain or the spinal cord.	These are the nerves that carry orders from the brain or the spinal cord to the muscles or the glands.

3. The outer ear helps us toe receive and direct sound waves to the inner ear.
4. When a cold block our nose food does not taste so good.
5. The four major tastes that our tongue can detect are sweet, salty, sour and bitter.

E. Answer these questions :

1. The three parts of brain are cerebrum, cerebellum and medulla. One function of each part of the brain is given below :
   1. **Cerebrum** – It controls the working of our eyes, ears, nose, tongue and even our voice.
   2. **Cerebellum** – It controls and coordinates the movements of voluntary muscles as well as helps in keeping the body balance.
   3. **Medulla** – It controls the involuntary actions like breathing, sneezing and heart beat.
2. The spinal cord extends from the medulla to the lower end of the backbone. It is enclosed inside a tough bony but flexible spine. It is responsible for the transfer of messages or information between the brain and other parts of the body through nerves. It also controls the actions that do not involve the brain. Such actions are called reflex action.
3. Not all the message go to the brain. Some message require an immediate response. Such automatic and immediate responses are controlled by the spinal cord and are known as reflex action. For example. When our finger comes in contact with a hot object, the sensory nerves immediately pass a message to the spinal cord. The spinal cord sends orders through the motor nerves for the muscles to tighten up. We pull our hand away from the hot object even before we feel the pain.



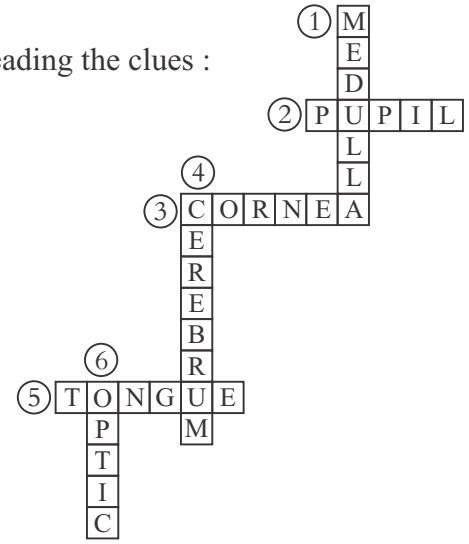
4. The four points to take care of our eyes are given below :
   (i) Always wash your eyes will clean water regularly.
   (ii) Do not read in a moving vehicle as this strains our eyes.
   (iii) Do not read or write in a dim light.
   (iv) Sit upright while reading. Keep your book about 12 inches away from your eyes.
5. To keep our skin healthy we should do the following things :
   (i) Take bath everyday with soap and clean water.
   (ii) Wear clean and comfortable clothes.
   (iii) Protect the skin from powerful sunrays by proper clothes and application of sun screen lotion.
   (iv) Always treat a cut on the skin with an antiseptic location to prevent infection.

HOT QUESTIONS

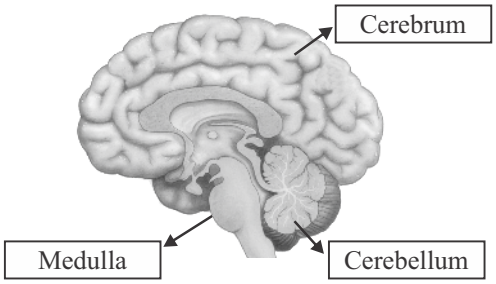
F. If will affect Vinod's vision because the damaged optic nerve will find itself unable to carry the image formed on the retina to the brain. This is the main obstacle for his vision.

Let us Try

G. Solve the crossword puzzle by reading the clues :



H. Label the parts of the brain in the given diagram.



1. Cerebrum
2. Cerebellum
3. Medulla

I. Do it yourself.

J. Do it yourself.

CHAPTER-11 – FORCE AND ENERGY

Let us Answer

A. Tick (✓) the correct answer.

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

B. Fill in the blanks:

1. mascular 2. elastic 3. pulley 4. energy 5. running water

C. Write the following statements as true or false.

1. false 2. false 3. true 4. true 5. true

D. Write short answer :

1. A force is a push or pull action on an object.
2. The different types of forces are mascular force, gravitational force, frictional force, elastic force, mechanical force and buoyant force.
3. Simple machines are tools that make our work easier, faster and more convient.
4. The law of a conservation of energy is that energy can neither be created nor destroyed but it changes from one form to another.
5. The names of four different forms of energy are mechanical energy, electrical energy, sound energy and light energy.

E. Answer these questions :

1. A force can be used to-
   (i) move a stationary object and can even make a moving object move faster.
   (ii) stop a moving object and can even slow down a moving object.
   (iii) change the direction of a moving object.
   (iv) change the shape and size of an object.
2. A lever is a bar or board that rests on a support or is fixed at are point. The levers can be classified as the following :
   (i) First class lever – The fulcrum is in between the load and the effort.
   (ii) Second class lever – The load is in between the fulcrum and the effort.
   (iii) Third class lever – The effort is in between the fulcrum and the load.
3. An inclined plane is a flat surface that is raised at one end. It takes less time to move an object up along an inclined plane that it does to lift is straight up. In hospitals and some other buildings, inclined planes called ramps are provided next to staircases. This helps in pushing up wheelchairs. A slide to is an inclined plane.

HOT QUESTIONS

F. 1. A rolling ball stops after sometime because of frictional force that opposes its movement.
2. The screw is better than a nail because things joined with a screw held together through a longer distance and thus cannot be forced apart easily. On the other hand, things joined with a nail held together only for a short distance, that is through the length of the nail.

Let us Try

G. Identify the figures and tell whether it is a first class, second class or third class lever.
First class lever Third class lever Third class lever

H. Name the simple machine used for the following.

1. lever	2. pulley	3. pulley	4. wheel and axle
5. wheel and axle	6. lever	7. lever	8. pulley

I. Do it yourself.

CHAPTER-12 – OUR LIFE SUPPORTS

Let us Answer

A. Tick (✓) the correct answer.
1. (b) 2. (b) 3. (c) 4. (c)

B. Fill in the blanks :
1. air 2. atmosphere 3. humidity 4. wells, ponds, river, lakes
5. distillation 6. cholera, jaundice, dysentery

C. Write the following as true or false :
1. true 2. true 3. false 4. false 5. false

D. Write short answers.
1. The layers of atmosphere are troposphere, stratosphere, mesosphere, thermosphere, and exosphere.
2. Atmosphere is important as it protects the earth from the intense light and heat of the sun.
3. Two types of impurities are found in water-soluble and insoluble or disease-cauring germs.

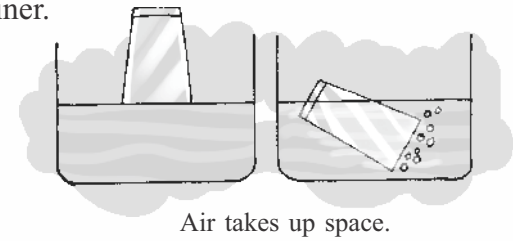
4. Filteration is a method to remove insoluble impurities in water through a filter paper.

E. Answer these questions.

1. Air is a mixture of many gases. Clean air consists of about 78 percent nitrogen, 21 percent oxygen and less than 1 percent of argon, carbon dioxide and other gases. It also contains water vapour, dust and smoke.
2. The uses of air pressure are as follows :
   (i) Air pressure is used in a doctor's syring.
   (ii) Filling fountain pens and droppers require air pressure.
   (iii) We need air pressure for sucking a liquid through a straw.
3. The following activity show that air occupies space :

Experiment-1

Take some water in a glass tub or a container. Try to push an empty glass into water while holding it upside down. You would not be able to push it into the water. This is because the space inside the glass is filled with air and hence there is no space left for water to enter.



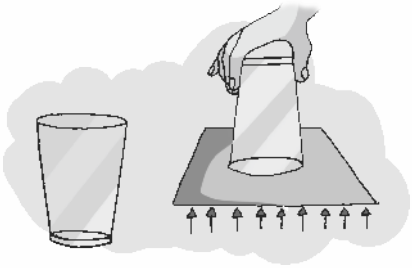
Air takes up space.

Now, tilt the glass, you will observe that the air escapes from the glass in the form of bubbles. Now, water can enter the glass.

4. The following activity process that air exerts pressure.

Experiment-3

Take an empty glass and fill it with water upto its brim. Now place a piece of cardboard over the glass in such a way that there is no air bubble or space between the water and the cardboard.
Now, hold the cardboard with one hand and turn the glass upside down. Remove your hand gently from th cardboard. You will observe that the cardboard stays in its place and the water does not fall. The outside air exerts pressure on the cupboard and prevents it from falling.



Air exerts pressure in the upward direction.

Similarly, you will observe that juice flows out of a tin can having two holes much faster than a tin can having single hole. This is because of the fact that air enters the juice can from the second hole and its pressure pushes out the juice from the first hole.

5. The water collected in the flask after distillation is totally pure and free from all impurities. This water is known as distilled water. This water is mainly used in car batteries, medicines and science experiments.
6. The water is treated through the following ways before being supplied to our homes :
   (i) The water is pumped from the river into a tank and is left undisturbed for a few

days. Chemicals like alum are added which help the insoluble impurities to settle down. Air and sunlight kill many harmful bacteria.

(ii) After sedimentation, the water is filtered through a clean sand bed to remove finer suspended particles.

(iii) The filtered water is then disinfected with very small quantity of chlorine gas to kill bacteria. This water is now safe for drinking.

HOT QUESTIONS

F. 1. When the air has a high humidity, the sweat cannot evaporate. This leaves our body feeling hot and sticky. This makes us feel unfortable.

2. The underground water is safe to drink because it is free from all kind of impurities-solutble and insoluble impurities.

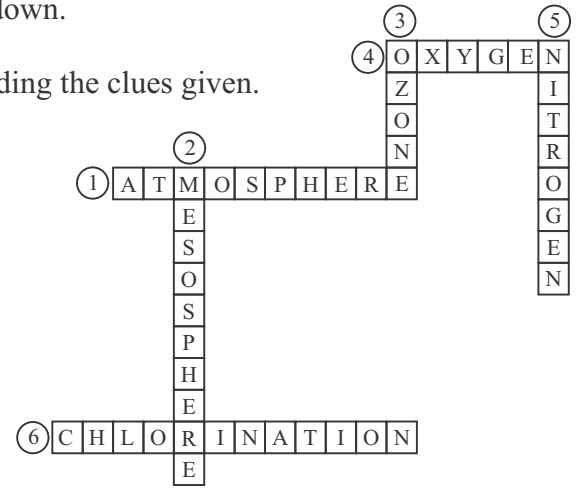
3. There are people who collect the used bottles and refill them with normal water. Unknowingly, we buy this water and it may cause serious health issues.

4. When oil comes out through a tin with one hole, the pressure inside the tin becomes less than the atmospheric pressure when two toles are made in the tin, air keeps on entering the tin through the other hole and maintains pressure inside. This makes oil come out of the tin easily

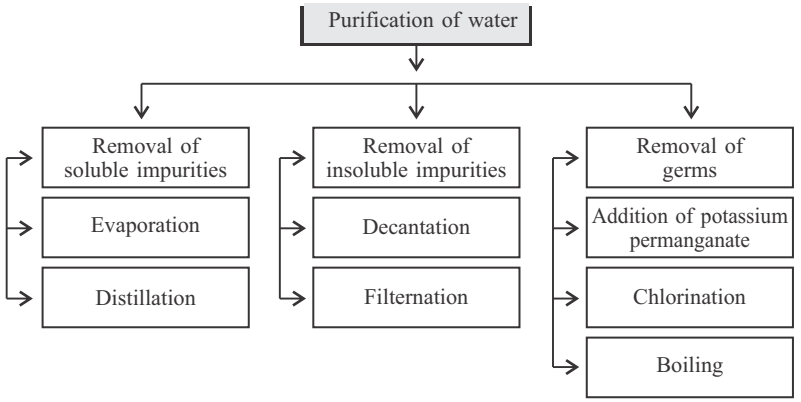
5. Alum is added to remove the insoluble impurities from water because it helps the insoluble impurities to settle down.

Let us Try

G. Solve the crossword puzzle by reading the clues given.



H. Fill in the empty boxes with the help of the words given below.



I. Do it yourself.

CHAPTER-13 – OUR EARTH'S NATURAL SATELLITE

Let us Answer

A. Tick (✓) the correct answer.
   1. (b) 2. (c) 3. (a) 4. (c)

B. Fill in the blanks :
   1. satellite 2. rough, uneven 3. phases 4. Lunar Eclipse 5. Apollo 11

C. Write short answer.
   1. The moon has no light of its own, but it reflects the light of the sun that falls on it. As a result it seems shining.
   2. The moon has no air or water, therefore, no life exists on the moon.
   3. The moon looks different at different times when viewed from the earth. These varying appearances are called phases.
   4. The eclipses occur due to revolutions and changing positions of the earth and the moon.
   5. Satellites which send messages from one country to another are called communication satellites.

D. Answer these questions.
   1. The effect of moon's gravity can be seen on the earth. The moon seems to pull the earth's water towards it. The water of the seas and oceans, on the side of the earth facing the moon is attracted upwards. This attraction causes high tides.
   2. In certain positions of the earth and moon cast their shadows on each other. This blocks the sun light and caused eclipses to occur.
   3. During a solar eclipse, the moon comes between the sun and the earth. Thus, the moon blocks out the sunlight and the shadow of the moon falls on some part of the earth. This is called solar eclipse.
   4. When the moon is only partly hidden by the dark shadow of the earth, it is a partial lunar eclipse.
   5. Artificial satellites are the man-made satellites that revolve around the earth. Some India's satellites are Aryabhatta, Bhaskara, Rohini, Apple, Insat 1A, Insat 1B, Insat 1c, Insat 1D, Insat 2A, Insat 2B, Insat 2C, Insat 3B, Insat 3C, Insat 3A and Insat 3E. India launched a remote-sensing satellite into space in April 2008 called CARTOSA T-2A.

HOT QUESTIONS

E. 1. It is because, there is no air on the moon.
   2. It is because gravitational force on the moon is very less in comparison to the earth.
   3. According to the known information regarding to the universe, the earth is the only planet that has life on it.
   4. Air is the medium through which sound travels. But there is no air on the moon and as a result we cannot hear the crashes on the surface of the moon.

Let us Try

F. 1. Lunar Eclipse 2. Solar Eclipse

CHAPTER-14 – NATURAL DISASTER

Let us Answer

A. Tick (✓) the correct answer.
   1. (b) 2. (c) 3. (a) 4. (c) 5. (c)

B. Fill in the blanks :
   1. plates 2. vent 3. Barren Island 4. extinct 5. twentieth

C. Write the short answer.

1. Earthquakes are caused due to the sudden movements under the surface of the earth.
2. A volcano is an opening on the earth's surface which allow hot. molten rocks, ash and gases to escape from below the surface.
3. Volcanoes which have no erupted for thousands of years and are the expected to erupt again as the opening of the volcano has been closed by hardened lava are called extinct volcanoes. Mt. Kilimanjaro in Africa is an extinct volcano.
4. Volcanoes that have not erupted in recent years but may erupt in the further are called dormant volcanoes. mount Fujiyama is a dormant valcano.

D. Answer these questions.

1. Seismograph is an instrument used to measure the intensity, duration and direction of an earthquake, It consists of a frame, a spring, a stone, a drum, paper and a pen, As the earth trembles, the spring moves the pen over the paper wrapped on the drum. This reading or pattern obtained on the paper is called a seismogram.
2. The mantle of the earth contains molten rocks called magma. Since the pressure inside the earth is very high, the molten magma and gases are sometimes forced to escape through cracks or openings on the earth's crust. Such cracks or openings form volcanoes. The molten magma and gases escape through a tunnel called a vent. Once the magma reaches the earth's surface, it is called lava. The bursting of the magma from the vent is called an eruption.
3. A seismograph consists of a frame, a spring, a stone, a drup, paper and a pen.
4. During a tsunami, large amounts of water swell up in the form of gigantic waves that move towards the land at a very great speed.
5. Some particular area receives no rain or less rain than normal for a long period, it is said to be affected by drought. Drought affects plants, animals and people. People have to wait for help to come in the form of food, water and medicines from neighbouring places or international agencies.

HOT QUESTIONS

E. 1. When temperature increases, the intensity of evaporation of water increases. Evaporated water change into vapour and vapour makes clouds. More vapour means more clouds in the sky and more clouds in the sky means more rain on the earth. More than average rain on the earth causes floods.

2. Out break of epidemics is very common after any natural disaster, Infectious diseases are caused by poor sanitation, a lack of safe drinking water, contaminated food and huge mass of rubbish which includes parts of dead plants and animals and sometimes human dead bodies.

Let us Try

F. 1. Tsunami 2. Flood 3. Earthquake

G. Do it yourself.

CHAPTER-15 – CHANGES IN OUR ENVIRONMENT

Let us Answer

A. Tick (✓) the correct answer.

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

B. Fill in the blanks :

1. farmlands 2. air 3. escape 4. Global warming 5. ice caps

C. Write short answers.

1. The greenhouse gases have the property of trapping energy from the sun. These gases warm up the earth and this effect is called as the greenhouse effect.
2. Chlorofluorocarbon (CFC) is a chemical widely used in refrigerators.
3. Global warming is the steady rise in the average temperature of the earth's surface.
4. Pollution refers to the contamination of air, water on land by human activities.

D. Answer these questions.

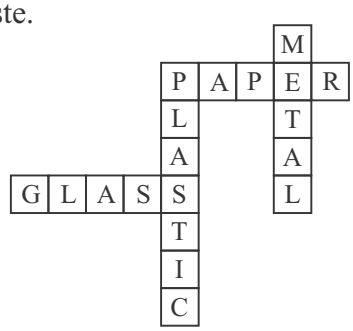
1. Earth's atmosphere is a natural atmosphere that we see around. We survive in this atmosphere and this atmosphere supports plants and animals to live and survive.
   Greenhouse is an artificial kind of atmosphere. It is an atmosphere created by a green house, that is, a house made of green plastic or glass which traps the heat of the sun. This trapped heat allows the plants to grow in winter (the weather not fit for the plants).
2. Smoke coming from the factories, vehicles burning of coal or wood causes air pollution. Waste water release from factories, offices, industries etc. is the main source of water pollution. Garbage from house dumped in open leads to lead pollution.
3. Global warming can leads to a climate change. It can cause the polar ice caps to melt, This can lead to a rise in the water levels of oceans and flooding of places near the sea. Plants, animals and buildings a long coastline would be in danger.
4. Smoke coming from the factories, vehicles burning of coal or wood causes air pollution. Waste water release from factories, offices, industries etc. is the main source of water pollution. Garbage from house dumped in open leads to lead pollution.
5. The following measures should be taken to control pollution.
   (a) The factories should have tall chimney fitted with filters to let out smoke and gases.
   (b) Tree are air purifiers. They should be grown in a large number.
   (c) All vehicles should be checked for pollution.
   (d) Waste should be treated and made harmless.
   (e) House-hold garbage should be thrown at proper dumping places.
6. The process of getting a thing back to its original form is called recycling. Using a thing again after recycling is known as reuse. Metal and rubber goods can be recycled and reused both.

HOT QUESTIONS

E. 1. Scraps of waste food, used paper plates and napkins will decompose and become part of the soil. The other things like empty tins and bottles will not decompose soon and create soil pollution. The children should have thrown the waste in their respective dustbins i.e., green dustbin for the biodegradable waste and the blue bin for non-biodegradable waste.

Let us Try

F.



G. Do it yourself.