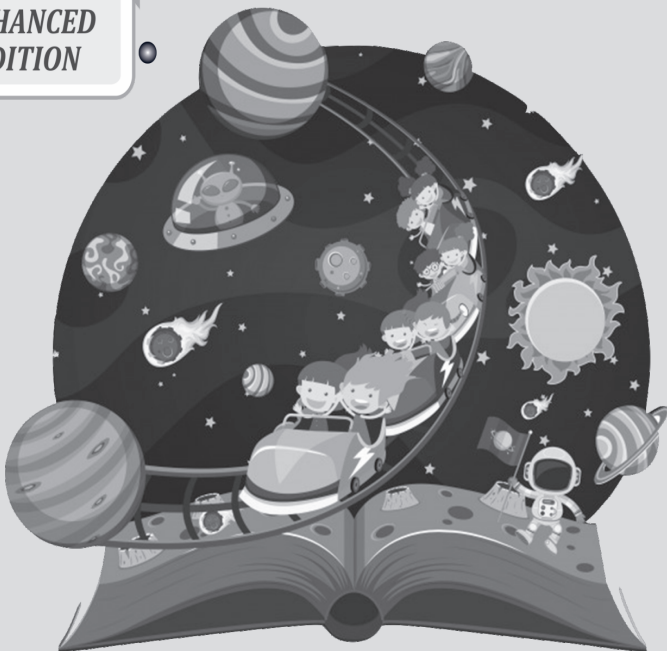


DISCOVERY

# SCIENCE

*Teacher Manual.*

**NEP 2020**  
**ENHANCED**  
**EDITION**



**CHAPTER 1**  
**Food that We Eat**

- A** 1. (a) energy 2. (a) Five 3. (c) potato  
4. (b) Protein 5. (b) Pizza
- B** 1. False 2. True 3. True 4. False  
5. True 6. False
- C** 1. (b) 2. (c) 3. (e) 4. (a)  
5. (d)
- D** 1. Carbohydrates 2. proteins 3. anaemia  
4. right 5. minerals
- E** 1. Fibre rich food is called roughage. Roughage helps in digesting our food. These help to remove waste material out of our body. Salad is a good roughage.
2. A diet that has proper amount of all the nutrients, roughage and water in right proportions required for good health is called a balanced diet. The amount of food required by a person depends on his age, sex, size and level of activity.
3. If food items are kept for a long period of time and not spoilt. Such foods get infected by germs and give foul smell and taste. So, there is a need to preserve food to protect it from germs and getting rotten.
4. Exercise and games are important for good health. They help us to digest food. We must take part in outdoor games to stay healthy, strong and active.
5. All living things need food, they cannot survive without it. Food gives us energy. This energy helps us in doing various activities.  
F To build and repair parts of body.  
F To help us grow.  
F To protect us from diseases.
6. We should eat variety of food that contains nutrients. Thus, the substance that are needed by our body for energy, good health and proper growth are called nutrients. Carbohydrates, proteins, fats, vitamins and minerals are nutrients that should be present in diet.
7. Proteins helps us in building and growing of our body parts. Food rich in proteins is called body building food. Protein makes our muscle strong. They help in growing and rebuilding the tissues. So, growing children need a lot of protein. Meat, pulses, milk, cheese, eggs are protein rich food. Soya bean have highest proteins in them.

## HOTS

- A** Carbohydrates gives us energy to do work, play and think. Food which is rich in carbohydrates is called energy giving food. They are most common components of food. People who do physical work need such food which contains lot of carbohydrates like a labourer, a farmer, a sportsman etc.
- B** A labourer should eat more carbohydrates than a judge because a labourer works too hard to earn his bread and butter. He does lot of physical work as compared to a judge.

### *Let's Enjoy*

- A** 1. Sewing      2. Baking      3. Carrot      4. Mango

**B** Energy Giving Foods

- F Butter
- F Rice
- F Jam
- F Cake
- F Cereals

### **Protective Foods**

- F Green vegetables
- F Milk shake
- F Cheese

### **Body Building Foods**

- F Eggs
- F Dal
- F Fish

### **Life Skill**

Balanced diet

## CHAPTER 2

### Dental Care and Digestive System

#### **Just Do More (Pg 16)**

1. About 20 teeth
2. Eight

#### **EXERCISE**

- A** 1. (b) chewing                      2. (a) Incisors  
3. (a) enamel                          4. (c) Molar  
5. (c) Influenza
- B** 1. False              2. True              3. False              4. True  
5. False              6. True

- C** 1. four                                      2. oesophagus  
 3. crown and root                      4. Canines  
 5. dentine
- D** 1. (d)                      2. (a)                      3. (e)                      4. (b)  
 5. (c)
- E** 1. Milk and Egg                                      2. Polio and Cold  
 3. Cholera and Typhoid  
 4. Ringworm and Athlete's foot  
 5. Malaria and Cholera

- F** 1. After two and a half year, a child has about 20 teeth. These are called temporary teeth or milk teeth. These teeth remain for two or three years.

At the age of six, milk teeth start falling out one by one. Slowly, new ones, which are bigger in size, take their place. These teeth are called permanent teeth. They are 32 in number and remain throughout life.

2. A tooth has a crown and a root. The visible part of tooth is called crown and invisible is called root. The white part on outside of tooth is called enamel. It is white and hardest substance of our body. The layer inside enamel that forms main part of tooth is dentine. It is hard like bone. Inside dentine pulp is present which is very soft and has blood vessels and nerves. The gums hold the teeth in their place.
3. Healthy food is essential for good health we must follow wealthy eating habits like:

F We must eat on time.

F We must use roughage in every meal.

F Chew the food well and do not swallow it whole.

F We must eat on time.

F We must use roughage in every meal.

F Chew the food well and do not swallow it whole.

4. Proper care of tooth is important. Tiny food particles stuck in spaces between our teeth can cause growth of bacteria and germs which form sticky yellow layer called plaque. This plaque will start causing pain, bad breath, toothache etc.

Ways to protect our teeth-

F Move the brush upward and downward.

F Brush top teeth downwards and bottom teeth upwards.

F Brush out the back of the teeth.

F Brush the flat surface of premolars and molars.

F Clean the tongue lightly.

5. Microbes are very small organism that cannot be seen with naked eyes. They are visible only through microscope. Some harmful

microbes cause diseases like ringworm, cold, cholera, malaria. Therefore they are harmful to us.

6. The process by which food is broken into a simpler form so that it can be easily taken in or absorbed by the body is called digestion.

Our digestive system is made up of many organs.

**Mouth-** Here, the food is broken down by biting and chewing. Saliva present in mouth helps to make food soft.

**Food Pipe-** The swallowed food slips down into food pipe which is called oesophagus.

**The Stomach-** From food pipe food is collected in a bag like structure. Here, it is churned and mixed with digestive juices.

**Small Intestine-** From stomach, food passes to small intestine, more digestive juices are added and digestion of food is completed here. It is in liquid form and can enter the blood.

F **Large Intestine-** The undigested food is passed in large intestine. Most of water is absorbed back from the food. The undigested food is passed to rectum.

F **Rectum-** The undigested food removed from body through anus.

## HOTS

- A Cavity is caused due to action of bacteria and germs on the tooth. Therefore, these germs causes toothache.
- B Do it yourself.

## Lets Enjoy

- A Do it yourself.
- B Do it yourself.
- C Do it yourself.
- D Do it yourself.

## Life Skill

Do it yourself.

## CHAPTER 3 Clothes We Wear

- A 1. (c) Both (a) and (b) 2. (b) synthetic fibres  
3. (c) uniform 4. (c) flax plant
- B 1. weather 2. gumboots 3. Natural 4. Woollen  
5. Moth
- C 1. (b) 2. (e) 3. (a) 4. (c)  
5. (d)
- D 1. False 2. True 3. False 4. True  
5. True

- E**
1. We wear clothes for following reason:
    - F Clothes protect us from rain, and help to keep us dry.
    - F They protect us from cold.
    - F They protect us from insects like mosquito bites.
    - F They make us look smart.
    - F They protect us from heat of the sun.
    - F We wear woollen clothes in winter, as they keep us warm.
  2. We wear clothes according to the season, place and occasion. Cotton clothes make us feel light and soothing in summers. Therefore, we wear cotton clothes in summers.
  3. Fibres obtained either from plants and animals are called natural fibres. Cotton, jute, linen etc. are the fabrics obtained from plants. Wool, silk, fur etc. are fabrics obtained from animals. Clothes made from these fibres are called natural fabrics.
  4. To keep ourselves fit and healthy, we should wear clean clothes and take proper care of them.
    - F A patient's clothes must be disinfected with an antiseptic solution.
    - F Woollen and silk clothes should be kept with moth balls and dried neem leaves to protect them from insects.
    - F Clothes must be washed properly daily.
    - F Expensive clothes should be dry cleaned.

### **HOTS**

**A** People wear uniform because it help us to identify, what he or she is. The clothes that a person wear at time of job is called uniform.

**B** Raincoats should be made of rubber because rubber is water resistant.

### ***Let's Enjoy***

Do it yourself.

### **CHAPTER 4** **Matter and it's State**

- A**
1. (a) matter
  2. (a) solid
  3. (a) condensation
  4. (a) hydrogen
  5. (a) solute
- B**
1. (d)
  2. (c)
  3. (b)
  4. (f)
  5. (a)
  6. (e)
- C**
1. weight and space
  2. gas
  3. shape, volume
  4. molecules
  5. solution

- D** A Melting  
 C Freezing  
 E Sublimation/Deposition
- E** 1. Chair, Book      2. Milk, Water  
 3. Hydrogen, Oxygen      4. Sugar, Salt  
 5. Water, Milk
- F** 1. Any substance that has mass and occupies space is called matter. All matter exist in three different forms, solid, liquid and gas.

- 2.
- | Solid   | Liquid   |
|---|--|
| <ul style="list-style-type: none"> <li>• Particles are packed very close to each other.</li> <li>• Definite shape.</li> <li>• Cannot flow.</li> <li>• Eg. pen, chair</li> </ul> | <ul style="list-style-type: none"> <li>• Particles are not packed very closely to each other.</li> <li>• No definite shape.</li> <li>• Can flow.</li> <li>• Eg. oil, milk</li> </ul> |
3. Matter can change its form one state to another by heating or cooling. For example ice changes into water on heating (solid to liquid) and also from water to steam (liquid to gas). On the reverse side, cooling changes steam into water (gas to liquid) and water into ice (liquid to solid).
4. When no new substance is formed, by changing the substance from one state to another, it is called physical change.
5. When the new substance is formed by changing the substance from one state to another is called chemical change.

### HOTS

- A** This is because the molecules of solute occupy the empty spaces between molecules of solvent.
- B** It is mixture of a solid and liquid. Solid is the flour used to make dough and liquid is water.

### Let's Enjoy

- A** Do it yourself.  
**B** Do it yourself.

## CHAPTER 5

### Soil

- A** 1. (a) Gravel      2. (c) bedrock  
 3. (c) Clay      4. (c) Both (a) and (b)  
 5. (a) soil erosion
- B** 1. True      2. False      3. False      4. False
- C** 1. Plants      2. dark      3. Loamy      4. erosion  
 5. conservation

**D** Do it yourself (labelling).

**Top Soil**– The top layer that is about an inch thick contains fine particles of sand, clay, water, humus and air. It is rich in nutrients. Most of the plants grow in this layer of soil.

**Subsoil**– The middle layer of soil which has less organic matter and is less dark. It has less air and is not good for plants growth. It is made up of broken pieces of rocks.

**Bed Rock**– The last layer which is orangish or yellowish in colour. It is quite deep inside the earth. It is made up of many pebbles and pieces of rock and is sandy. Plants do not grow here at all.

- E** 1. Soil is formed in several ways. The breakdown or weathering of rocks is one way in which soil is formed. It is also formed by mixing of sand with organic matter like dead and decay of animals and minerals.

Main types of soil are-

- F Gravel- It has small stones and pieces of rock. It holds water and has gaps for keeping air stored in it.
  - F Sand- The particles in this soil are smaller than gravel. It is rough and gritty when not wet. It does not have much nutrients and even water does not flow freely in it.
  - F Clay – It is made of very fine particles. It is smooth when dry and sticky when wet.
  - F Loam- It is mixture of both sand and clay. It is good for growth of plants. For example garden soil, which is rich in humus and allows water to pass.
2. Soil is one of the most precious resources. Plants get most of their nutrients from the topmost layer of earth, soil. Since, plants give us food and oxygen, we are dependent on soil for our food and oxygen. Therefore soil is very important for all living things present on earth.
3. The remains of dead plants and animals makes humus. It provides nutrients for plants to grow well. In other words, humus makes the soil fertile.
4. Loamy soil contains both sand and clay. Loamy soil is very good for growth of plants. It is rich in nutrients and humus, and allows water to pass through easily.
5. The removal of the fertile topsoil by the action of wind and water is called soil erosion. The factors that increase soil erosion are-
- F **Deforestation** – Trees are cut or burnt which leads to immediate loss in organic matter.
  - F **Overgrazing** by animals leads to deforestation which further leads to soil erosion.



- F **Rain and strong winds**- They take away the nutrients in soil from one place to another with them, which leads to soil erosion.

## HOTS

- A Potter will use clay as it is sticky, smooth when wet.  
B Life would not have been possible on earth without soil.

## Let's Enjoy

- A Do it yourself.  
B Do it yourself.

## CHAPTER 6 Food for Plants

- A 1. (b) chlorophyll                      2. (b) green  
3. (c) Both (a) and (b)                  4. (c) oxygen
- B 1. True                      2. True                      3. False                      4. True
- C 1. veins                      2. blade                      3. glucose                      4. sunlight  
5. carbon dioxide                      6. starch
- D 1. The flat part of leaf is leaf blade. There is one main vein and many side veins in a leaf. Veins help in transportation of substances like water, minerals and food to and from the leaf. There are millions of tiny pores on surface of a leaf known as stomata. Air enters leaf through stomata. To make food, the leaves absorb carbon dioxide gas present in the air.
2. The process by which the leaves make their food with the help of water and carbon dioxide in the presence of sunlight is called photosynthesis (Photo means light; synthesis means putting together).
3. The functions of leaves are-
- F Some leaves are used as medicines. For example leaves of neem, tulsi and mint.
  - F We eat the leaves of some plants as food. For example spinach, cabbage etc.
  - F It makes food for plants. Therefore it is called food factory of a plant.
4. Chlorophyll in leaves help a plant to make their food to make food, leaf also needs water, carbon dioxide and sunlight. Water is absorbed by the roots and is carried by stem to leaves. Leaves take in carbon dioxide through stomata. When sunlight falls on them, it is absorbed by chlorophyll. Then, the food is prepared.
5. A chain that shows a series of organisms where each member depends on lower member in the series for food is called food chain.

## HOTS

Photosynthesis cannot take place in a dark room because sunlight is important to carry the process of photosynthesis.

### *Let's Enjoy*

- A Do it yourself.
- B Do it yourself.

## CHAPTER 7 Adaptation in Plants

- A 1. (a) ocean beds                      2. (b) Land  
3. (c) Both (a) and (b)              4. (a) Cactus
- B 1. plains                      2. insectivorous                      3. water  
4. adapt                      5. evergreen
- C 1. False                      2. False                      3. False                      4. False  
5. True
- D 1. (c)    2. (e)    3. (b)    4. (a)    5. (d)
- E 1. To survive, certain plants adopt to the extreme heat and physical and behavioural functions. They grow extremely long roots, allowing them to use water present deep in the ground. Also, some plants have thin leaves and short height so that they do not require large amount of water for their survival.  
2. Plants that grow on land are called terrestrial plants. For example neem, deodar etc. Whereas plants which grow in water are called aquatic plants. For example- lotus, hydrilla etc.  
3. Only those plants which need very less water can survive in a desert. Cactus, babool, keekar and date palms grow in deserts. These plants have certain features that help them to survive in severe condition of desert. These plants do not have leaves or have very few leaves. Photosynthesis is thus carried out by green stems.  
4. The trees which grow in very cold places like hilly areas and mountains are usually tall, straight and have a conical shape. They allow the snow to easily slide off their branches.  
5. Some plants are non green in colour because they lack chlorophyll. They cannot make their own food and depend on other organism for food insectivorous plants depends on insects for their food and plants like algae and fungi grow on dead and decaying matter.  
6. Some plants are carnivorous in nature. Their leaves are modified to trap insects and hence they are known as insectivorous plants. For example venus flytraps, pitcher plant etc.

## HOTS

- A Most desert have no roots because there is no water in the ground and desert soil does not have nutrients in it.
- B It has waxy coating which prevent them from rotting.

## Let's Enjoy

- A Do it yourself.

## CHAPTER 8

### Circulatory System and Excretory System

- A 1. (a) Circulatory system  
2. (b) Kidneys  
3. (a) Vein
- B 1. (c)                      2. (d)                      3. (a)                      4. (b)
- C 1. Heart, Blood vessels    2.    Water, Oxygen  
3. Veins, Arteries            4.    Kidney, Urinary bladder
- D 1. The circulatory system is an organ system that helps to transport substances inside our body to the heart, blood and blood vessels.  
2. With the help of circulatory system, blood is transported to one part of body to another.

**Heart** – It is muscular organ to pump blood to different parts of body.

**Blood** – It is a fluid that provides nutrients, water, oxygen, carbon dioxide to our body.

**Blood Vessels**- These include arteries, veins and capillaries which helps in transportation of blood from heart to other body parts and vice versa.

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

The excretory water from large intestine is transported to a pair of bean shaped organs called kidney. Kidneys help body to get rid of waste water in form of urine. The thin tubes called ureter carry urine from kidneys to muscular organ called urinary bladder when bladder become full, it is passed out through urethra. Skin remove waste from the body in form of sweat.

## HOTS

- A We will not stay alive since blood is the only source to provide nutrients, water, oxygen and carbon dioxide to our body.
- B We have so many organ system because this helps in proper functioning of our body efficiently.

## Let's Enjoy

- A Do it yourself.
- B Do it yourself.
- C Do it yourself.

## CHAPTER 9 Animal's Life

### Just Do More (Pg 66)

- 1. Kid
- 2. Albumen

### EXERCISE

- A**
  - 1. (a) mammal
  - 2. (c) egg shell
  - 3. (a) Hen
  - 4. (b) incubation
  - 5. (a) yolk
- B**
  - 1. (d)
  - 2. (e)
  - 3. (b)
  - 4. (a)
  - 5. (c)
- C**
  - 1. egg
  - 2. reproduction
  - 3. continue
  - 4. food
  - 5. colt
- D**
  - 1. The process by which animals reproduce their young ones is called reproduction. Different animals reproduce in different ways. We can divide them in two categories:
    - F Animals which give birth to babies.
    - F Animals which lay eggs.
  - 2. A thin protective shell of an egg is known as egg shell within the shell there is a sticky white fluid. This fluid is called albumen. It is rich in protein. The yellow inner part is yolk. It has a red spot in it known as embryo. The baby draws its food from yolk. As baby grows inside, the yolk diminishes. When baby is fully grown and ready to face the world, the egg shell breaks and baby comes out.  
Diagram (Do it yourself)
  - 3. Some animals reproduce by giving birth to young ones that feed on their own milk. These animals are called mammals. They have well developed brain and have hair on their body. For example- dogs, deer, monkeys, human beings, elephants etc.
  - 4. After getting continuous warmth by the hen, the young chick grows fully and hatches out of the egg. This is called hatching.
  - 5. The hen lays eggs. Then, it sits on the eggs to keep them warm. This is called incubation. After getting continuous warmth, the young chick grows fully and hatches out of the egg. This is called hatching. The chick forms and grows inside the yolk. The growing chick is called an embryo, which gets its food from yolk. The embryo develops into chick.

## HOTS

- A** The process of die and birth continues. To continue this process all living things reproduce.
- B** Dolphins are mammals and breathe through lungs, therefore they frequently come out of water to breathe as they cannot breathe in water.

## Let's Enjoy

- A**
- |                |        |               |         |
|----------------|--------|---------------|---------|
| 1. Lion – (e)  | - (ii) | 2. Duck – (d) | - (iii) |
| 3. Cat - (b)   | - (v)  | 4. Dog – (c)  | - (i)   |
| 5. Horse - (a) | - (iv) |               |         |
- B** Do it yourself.
- C**
- |         |             |         |          |
|---------|-------------|---------|----------|
| 1. frog | 2. housefly | 3. deer | 4. whale |
|---------|-------------|---------|----------|

## Life Skill

Calcium and protein

## CHAPTER 10 Animal's Adaptation

- A**
- |                   |                    |
|-------------------|--------------------|
| 1. (b) Scavengers | 2. (b) Cold region |
| 3. (a) gills      | 4. (a) Duck        |
| 5. (a) Dinosaur   |                    |
- B**
- |                |          |             |              |
|----------------|----------|-------------|--------------|
| 1. terrestrial | 2. limbs | 3. arboreal | 4. Parasites |
| 5. scavengers  |          |             |              |
- C**
- |        |        |        |        |
|--------|--------|--------|--------|
| 1. (c) | 2. (e) | 3. (b) | 4. (a) |
| 5. (d) |        |        |        |
- D**
- |          |         |          |         |
|----------|---------|----------|---------|
| 1. False | 2. True | 3. False | 4. True |
| 5. False |         |          |         |
- E**
- |                       |                   |
|-----------------------|-------------------|
| 1. Crabs, Fishes      | 2. Bats, Frogs    |
| 3. Toads, Salamanders | 4. Vulture, Hyena |
| 5. Mosquito, Leech    |                   |
- F**
1. Animals that live on land are called terrestrial animals. These animals have features suitable for life on land. Animals of cold areas have thick fur on their body, which protect them from the cold. For eg. yak, bear etc.

Animals living in deserts have little hair on their body. Camels drink large amount of water at one time and can survive without water for many years. Terrestrial animals have legs to move from one place to another. Animals who do not have legs move with the help of muscles and scales on their body. Most of land animals breathe through lungs.

2. Animals of cold areas have thick fur on their body, which protect them from the cold. Some animals are adapted to live in freezing areas. They have thick layer of fat called blubber. Seals, penguins, walrus etc. are such animals.
3. Land animals that live mostly on trees are called arboreal animals. Squirrel, sloth, monkey etc. are example of arboreal animals. They have sharp claws to climb up and down the branches of trees. They have strong, muscular and long tail for holding on the branches.
4. Animals protect themselves from their enemies in following ways:
  - F Some animals can change their body colour according to their surroundings to confuse their enemy. This is called caumoflaging. For eg. chameleons.
  - F Some animals like zebra, artic fox, polar bear etc. can hide themselves because of colour of skin.
  - F Some animals move fast to escape from their enemies. Eg. rat, rabbits etc.
  - F Elephants and hippopotamus have thick skin to protect themselves from heat in hot climate.
5. The animals that are in danger of becoming extinct are called endangered animals.

### HOTS

- A** Dinosaurs could not change themselves according to the surroundings, hence they got extinct.
- B** No, because polar bear has thick fur and the climate of rainforest will not suit his body.

### *Let's Enjoy*

- A** Do it yourself.
- B** Do it yourself.
- C** Do it yourself.

### Life Skill

No, it is not fair as every living organism has a right to live free.

## CHAPTER 11

### Force, Work and Energy

- |          |                   |                          |
|----------|-------------------|--------------------------|
| <b>A</b> | 1. (a) force      | 2. (c) sun               |
|          | 3. (c) kinetic    | 4. (a) third class lever |
| <b>B</b> | 1. Muscular Force | 2. Heat Energy           |
|          | 3. Magnetic Force |                          |

- C** 1. False      2. False      3. False      4. False  
5. True
- D** 1. (f)      2. (d)      3. (a)      4. (b)  
5. (c)      6. (e)
- E** 1. Friction      2. Force      3. Heat Energy  
4. Electrical Bulb
- F** 1. The force that is present when two things are in contact with each other is called frictional force. This stops an object to slide over from surface. We are able to stand due to frictional force. We can write on paper due to friction. We can light a matchstick only due to friction.
2. 1. Changes the position of an object.  
2. Changes directions of the object.  
3. Slows down or speed up movement of an object.  
4. Changes size and shape of an object.
3. Energy is the ability to do work. Force can be produced by anybody if it has energy. To perform any activity like playing, reading, running, we need energy. Only a body which has energy can produce force. Even machines need energy to work.
4. Any device which makes our work easy is called a machine. Machine exerts force to get the work done. Lever, inclined plane, pulley, screw, wheel and axle are common machines we use daily.

### HOTS

- A** Because of the gravitational force which pulls it downward towards the centre of earth.
- B** Wheel and axle.

### *Let's Enjoy*

- A** Do it yourself.
- B** F Mixer Grinder  
F Television  
F Washing Machine  
F Oven  
F Refrigerator  
F Dryer  
F Iron  
F Lamps
- C** **Types of forces**  
F Frictional Force  
F Gravitational Force

### Forms of energy

- F Light Energy
- F Electrical Energy
- F Heat Energy
- F Potential Energy
- F Kinetic Energy

### Types of simple machines

- F Lever
- F Inclined plane
- F Pulley
- F Screw
- F Wheel and Axle
- F Scissors

### Sources of Energy

- F Sun
- F Wind
- F Electricity

## CHAPTER 12

### Air, Water and Weather

- A** 1. (a) day and night                      2. (b) Weather  
3. (c) Both (a) and (b)                      4. (c) Both (a) and (b)
- B** 1. equator                      2. sea                      3. dew                      4. Snow  
5. Rain water                      6. Chlorine
- C** 1. True                      2. False                      3. False                      4. False
- D** 1. (b)                      2. (a)                      3. (e)                      4. (c)  
5. (d)
- E** 1. Weather is the condition of atmosphere of a place at a particular time.  
2. The heat of the sun causes winds to blow. When the air gets heated up due to the sun, it becomes lighter. It rises up. Cold air from the surrounding comes in to take its place. This movement of air cause winds.  
3. There is water in lakes, ponds, rivers, oceans etc. and this water changes into water vapour due to the heat of the sun and makes cloud. Clouds rises up in air and cools down then water vapour gets converted into water droplets. When these water droplets in the cloud get too heavy to remain in air, they fall down as rain and goes to river, ponds, oceans etc.



4. The process in which the insoluble impurities settle down is called sedimentation. The process in which the water is gently poured out after sedimentation is called decantation. Decanted water can still have a lot of impurities.
5. We can purify water in following ways:
  - F **Sedimentation**– The insoluble impurities settle down in this process.
  - F **Decantation** – The water is gently poured out after sedimentation in this process.
  - F **Chlorination**– The process in which chlorine is added to kill the germs in dirty water.
  - F **Filtration** – The process in which water is cleaned by passing it through filter paper.
  - F **Boiling**– Boiling water for atleast 10 minutes kills the germs in it.
6. The cycle involving the change of water into water vapour and then to water again is called water cycle.

## HOTS

The sun heats land and water both. During the day, the land gets heated up which in turn heats the air above the sea. The hot air rises up. The cold air from seas rushes in to take its place. It causes a cool breeze to blow from the sea to the land.

### Let's Enjoy

- A Do it yourself.
- B Do it yourself.
- C
 

1. evaporation	2. condensation
3. water table	4. sleet
5. windy	

## CHAPTER 13

### The Solar System

- A
 

1. (c) tilted	2. (c) Both (a) and (b)
3. (a) Mercury	4. (b) Mercury
5. (c) autumn season	
- B
 

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

1. crust	2. core	3. gases	4. equator
5. rotation	6. planets		
- D
 

1. True	2. True	3. False	4. False
5. True			

- E** F **Mercury** – It is smallest and closest planet to the sun. It can be seen just before sunrise and sunset.
- F **Venus** – It is second planet in solar system. It is also called evening star. It is brightest planet.
- F **Earth** – It is third planet in solar system. It is also called blue planet because 70% of its surface is covered with water. It is only planet where life is known to exist.
- F **Mars** – It is fourth planet in solar system. It is known as red planet because the soil and rocks in this planet is red.
- F **Jupiter** – It is fifth planet and largest planet in solar system. It spins very fast while spinning, it pulls its cloud into stripes.
- F **Saturn** – It is known as the planet with rings because there are several rings around its middle.
- F **Uranus** – It is seventh and third largest planet in our solar system, it is the fastest revolving planet.
- F **Neptune** – It is very cold planet. It is farthest from the sun.
- F**
1. Earth is also called blue planet, because nearly 70% of its surface is covered with water. It appears blue when seen from the space.
  2. **Mercury** – It is the smallest and closest planet to the sun. It can be seen just before sunrise and sunset.
- F **Venus** – It is the second planet in the solar system. Venus is also called the evening star. It is the brightest planet in our solar system. It is known as earth's twin.
- F **Earth** – It is third planet in the solar system. It is also called blue planet, because nearly 70% of its surface is covered with water. It appears blue when seen from the space.
3. Stars are glowing balls of gases that spread out heat and light in space. They are huge heavenly bodies and have their own light. Stars are much bigger than they appear, as they are far away from us.
  4. The rotation of the earth on its axis causes day and night. The earth takes about 24 hours to complete one rotation on its axis. Thus, one day is 24 hours.
  5. The free flying objects that circle a planet is called a satellite. The moon is the natural satellite of the earth. It has no light of its own. It reflects light of the sun.
  6. The revolution of the earth around the sun causes seasons. The seasons on the earth are caused because the axis of the earth is tilted. As the earth moves around the sun, the tilt causes the sun's rays to fall more directly on either of the two hemispheres, depending on the position of the earth.

## HOTS

- A** There will be no day and night for one half of the earth. Since, during rotation of earth, one half of the earth the sun and so it is day in one half and night in the other half. So, this will stop if earth doesn't rotate.
- B** As the earth moves around the sun , the tilt causes the sun rays to fall more directly on either of the two hemispheres, depending on position of earth. The half that gets more sunshine has summer, while the other half has winter. After half year situation changes.

### *Let's Enjoy*

Do it yourself.

## CHAPTER 14 Keeping Our Earth Green

- A** 1. (c) Both (a) and (b) 2. (b) deforestation  
3. (b) 5th June
- B** 1. False 2. True 3. True 4. True  
5. True
- C** 1. Soil 2. Oxygen 3. Paper 4. Waste
- D** 1. Trees are very important for animals as they are useful in many ways:  
F They take in carbon dioxide and release oxygen which helps in keeping balance in environment.  
F The roots of trees holds the soil which helps in preventing soil erosion.  
F Trees are home for many animals.
2. Animals that live in the forests are part of wildlife. Different wild animals are important to the environment in the following way-  
F All animals depend on plants and on each other for food. This connection between for food forms the food chain. The loss of any form will affect another animal dying, causing imbalance in nature.  
F Animals such as squirrels, monkey and even some birds eat the fruits and seeds of some plants. Sometimes they throw away the seeds to far off places which are later removed from there and through it some other places.
3. We should not cut down too many trees at one time because they help in keeping the temperature low.  
F They are home to many animals. The roots of trees holds the soil which helps in preventing soil erosion. They are also very essential to maintain ecological balance since they take in carbon dioxide and release oxygen.

## HOTS

Now a days wild animals are in great danger. They are in the stage of becoming extinct from the earth due to the careless human activities, like mining, destruction of forests for creating cities, towns, hunting and killing of animals.

### *Let's Enjoy*

- A** Do it yourself.
- B** Importance of trees
- F Holds soil
  - F Home to many animals
  - F Provide furniture, wood etc.

### **Saving trees**

- F Reduce use of paper
- F Plant more trees

## **Model Test Paper 1**

- A**
1. (b) Protein
  2. (a) enamel
  3. (c) flax plant
  4. (a) solute
  5. (a) Gravel
  6. (b) chlorophyll
- B**
1. True
  2. False
  3. True
  4. True
  5. True
  6. False
- C**
1. Sewing – All others are method of cooking.
  2. Mango – All others are components of food.
  3. Brush – All others are different kinds of teeth.
  4. Sweater – All others are clothing of summer season.
  5. Solutions - All others are states of matter.
- D**
1. (d)
  2. (f)
  3. (a)
  4. (b)
  5. (c)
  6. (e)
- E**
1. Potato, Sugar
  2. Green vegetables, Milk
  3. Sugar, Salt
  4. Cactus, Date Palm
  5. Peepal, Deodar
- F**
1. Food which are rich in carbohydrates is called energy giving food. Sweets, potatoes, cereals, bread etc. Whereas vitamins and minerals protect us from disease and keep us fit and healthy. They are called protective food. For example milk, egg etc.
  2. Solids are substance in which the particles are packed very close to each other. It has a definite shape and volume. Eg. pen, book etc. Liquids are substances in which the particles are not very closely packed. A liquid has a definite volume but it does not

have a definite shape. Gases are substances in which the particles are very loosely packed. A gas does not have a definite shape and definite volume. It takes shapes and volume of the container. For eg. oxygen, hydrogen etc.

- G** 1. The top layer that is about an inch thick contains five particles of sand, clay, humus, water and air. This layer is known as topsoil. Most of the plant grow in this layer of soil.

The middle layer of soil is subsoil. It has less organic matter and is less dark. It is made of broken pieces of rocks. It has less air. It is not good for plant's growth.

The last layer is called bed rock. It is orangish or yellowish in colour and quite deep inside the earth. It is mainly made up of pebbles and pieces of rocks. Plants do not grow on this layer of soil.

2. Chlorophyll in leaves helps a plant to make their own food. To make food, leaf also needs water, carbon dioxide and sunlight. Water is absorbed by the roots and is carried by stem to the leaves. Leaves take in carbon dioxide through stomata. When sunlight falls on them, it is absorbed by chlorophyll. Then the food is prepared. This process of making food with help of water and carbon dioxide in presence of sunlight is known as photosynthesis.

- H** 1. If food items are kept for long period of time and are not stored properly, they get spoilt. Such foods get infected by germs and give foul smell and taste. So, there is a need to preserve food and protect it from germs and getting rotten.

2. Microbes are very small organisms that can not be seen by our naked eyes. They are visible only through microscope. Some harmful microbes causes disease like ringworm, cholera, cold, malaria etc. Therefore, they are harmful to us.

3. We wear clothes according to place, season and occasion. Cotton clothes make us feel light and comfortable in summer. They are soothing and absorb heat during summer season.

4. A chain that show series of organisms where each member depends on lower member in the series for food is called food chain.

5. The trees that grow in very cold places like hilly areas and mountains are usually tall, straight and have a conical shape. They allow the snow to easily slide off their branches.

## Model Test Paper 2

- A** 1. (a) Vein 2. (a) yolk  
3. (a) gills 4. (c) kinetic  
5. (b) Mercury 6. (b) 5th June
- B** 1. reproduction 2. Parasites  
3. chlorine 4. rotation  
5. food 6. limbs
- C** 1. Frogs, Toads 2. Mosquito, Leech  
3. Hen, Crow 4. Vulture, Hyena  
5. Dodo, Dinosaur
- D** 1. Calf 2. Colt 3. Kid 4. Cub  
5. Kitten

**E** 1. The thin protective shell of an egg is known as egg shell. Within the shell there is sticky white fluid. This fluid is called albumen. It is rich in protein. The yellow inner part is yolk. There is a red spot in yolk. This red spot grows into a embryo on baby. The baby draws its food from yolk. A baby grows inside the yolk diminishes. When baby is fully grown and ready, the ego shell breaks and baby comes out.

**F** 1. **Diagram** (Do it yourself.)

Plant eating animals are called herbivores animals. Sheep, horse, cow etc. are herbivores. Such animals have sharp cutting teeth for biting food and very strong teeth for grinding.

Whereas flesh eating animals are called carnivores or carnivorous animals. For eg. lion, leopard etc. Such animals have sharp tearing teeth for tearing the flesh. They also have sharp claws to catch their prey.

2. The rotation of earth on its axis causes day and night. The earth takes about 24 hours to complete one rotation on its axis. Thus, one day is of 24 hours.

Whereas, the revolution of the earth causes season. The earth takes  $365 \frac{1}{4}$  days or 1 year to complete one resolution around the sun.

- G** 1. Metamorphosis 2. Water vapour  
3. Sun 4. Turbines
- H** 1. Windy 2. Blood 3. Machine 4. Fog

**I** 1. By the process of blood circulation, blood transports the various substances from one part of the body to another.

**Heart:** It is muscular organ that pumps the blood. The blood vessels carry the blood throughout body.

**Blood:** It is fluid that is carried by blood vessels to all parts of body. It provides nutrient, water, oxygen carbon dioxide to our body.

**Blood Vessels:** They are of three types arteries, veins and capillaries. They carry oxygen from heart to other parts of body and veins carry blood with carbon dioxide back to heart.

2. Animals have many adaptations but some animals are in danger because of the destructive activities of humans. The cutting of forest for man's need is reducing habitats and food for animals. Such animals are called endangered animals. These animals are disappointing gradually.
3. The force that is present when two things are in contact with each other is called frictional force. It stops an object from sliding over some surface. We are able to stand or walk due to friction. We can write on paper only due to friction. We can light a matchstick only due to friction.
4. There is water in lakes, ponds, rivers, oceans etc. and this water changes into water vapour due to heat of the sun and makes cloud. Cloud rises up in air and cool down. Then, water vapour gets converted into water droplets. When these water droplets in the cloud get too heavy to remain in the air, they fall down as rain and goes to river, ponds, oceans etc.
5. Animals that live in the forests are part of wildlife. Different wild animals are important to the environment in following ways-
  - F All animals depend on plants and on each other for food. This connection between them for food forms food chain. The loss of any form will affect another animal dying causing imbalance in nature.
  - F Animals such as squirrels, monkeys and even some birds eat the fruits and seeds of some plants. Sometimes they throw away the seeds so far off places which are later removed from there and through it some other places. In this way, these animals help to scatter seeds.

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