

# Science Booster 3

## 1

## Living and Nonliving Things

### CHECK POINT 1

1. Pencil
2. Sunflower

### CHECK POINT 2

1. Lungs
2. Stomata
3. Excretion

### PRACTICE TIME

A. 1. (F) 2. (T) 3. (T) 4. (F)

B. 1. (a) 2. (b) 3. (b)

C. 1. eggs 2. food 3. nonliving 4. grow 5. gills

D. 1. Living things breathe, need food, grow, move from place to place, feel and respond to changes in their surroundings, remove wastes from their body and produce young ones of their own kind.

2. Animals move with the help of legs, birds fly with the help of wings and fishes swim with the help of their fins.

Some plants show movement in their parts.

3. We need food because food gives us energy to grow and work.

4. Plants make their food in the presence of sunlight, using water and carbon dioxide gas.

5. Excretion is removal of waste materials by living things from their body.

E. 1. Car does not move on its own but it uses fuel to move. Hence, it is nonliving.

2. A toy monkey cannot climb a tree on its own because it has no life.

3. Leaves make food for the plant. If these are removed, the plant will die.

F. **Top to bot tom:** EXCRETION, GROWTH

**Left to right:** REPRODUCTION, BREATHING, FEELING

G. Sponges have tiny pores on their bodies through which water enters their body. Their body cells catch the tiny food particles coming in with water and expel the water out.

# 2

## Structure and Functions of a Plant

### CHECK POINT 1

1. (T) 2. (F) 3. (T)

### CHECK POINT 2

1. Banyan 2. bud 3. papaya

### PRACTICE TIME

A. 1. (F) 2. (T) 3. (F) 4. (F)

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

C. 1. tap; fibrous 2. Leaf 3. fruit 4. seed

D. 1. Fibrous roots grow as a tuft of thin roots, whereas a tap root grows as a single main root from the base of the stem.

2. Roots hold the plants firmly in the soil, absorb water and nutrients from the soil and pass them to all parts of the plant. Roots of some plants store food for the plants.

3. Stem keeps the plant straight, carries water and nutrients from roots and food from leaves to all parts of the plant. The stem of some plants stores food for them.

4. Do yourself.

5. Stomata on the leaves help the plant in breathing by taking in and giving out air.

E. 1. Plants should not be kept in closed room because they will not get sunlight to make food and will die ultimately.

2. Gardeners use moss sticks in order to keep money plants straight.

3. Animals and their feeding habits.

F. 1. leaf blade 2. root 3. fruit 4. seed

G. Potato and ginger are not grown from seeds as it takes a longer time to grow them from seeds.

# 3

## Animals and their Feeding Habits

### CHECK POINT 1

1. Vulture 2. Sheep 3. Goat

### CHECK POINT 2

1. Chameleon 2. Mosquito 3. Snake

### PRACTICE TIME

A. 1. (F) 2. (T) 3. (F)

B. 1. (a) 2. (c) 3. (a)

C. 1. swallowing 2. trunk 3. live, grow 4. plants

D. 1. Cows and buffaloes bite their food with the help of their sharp front teeth. They swallow half-chewed food. After some time, they bring the food back into the mouth to chew it properly. This is called chewing the cud.

2. A mosquito gets its food by piercing and sucking the blood using its long, hollow and tube-like mouthparts.

3. The teeth of carnivores are long, pointed and slightly curved. They help them tear the flesh.

4. A food chain is a series of living beings in which one eats the other.

**Diagram:** Do yourself.

E. 1. The front teeth of carnivores are not much developed because they do not cut the flesh but tear it with the help of long and sharp canines.

2. Mosquitoes and butterflies cannot eat solid food because they have hollow tube-like mouth through which they suck liquid food.

F. 1. frog 2. butterfly 3. cow 4. mosquito

G. Do yourself.

# 4

## Birds–Beaks, Claws and Nests

### CHECK POINT 1

1. Down feathers
2. Oil glands
3. Streamlined

### CHECK POINT 2

1. Climbing
2. Scratching
3. Grasping or Preying
4. Swimming

### PRACTICE TIME

A. 1. (F) 2. (F) 3. (F) 4. (F) 5. T

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

C. 1. sharp 2. webbed 3. flight 4. cavity 5. cup

D. 1. Aquatic birds have oil glands in their skin which protect their feathers from rotting. They have strainer or spear type of beaks. Swimming birds like duck and swan have webbed feet to paddle water while swimming. Wading birds such as heron, crane, etc., have long and spread-out toes that help them walk in muddy water without getting their legs wet.

2. The bones of flying birds are hollow and filled with air. Such bones make their body light.

3. Ostrich cannot fly because its body is heavy due to heavy and solid bones. It has smaller wing bones and more feathers on its body.

4. Birds make nests to lay eggs and bring up their young ones.

5. A tailor bird makes its nest by sewing leaves together with its beak using cotton, hair, wool or spider web.

E. 1. A duck has flat and broad beak to strain muddy water to get its food.

2. Aeroplanes are given streamlined shape because this shape helps them fly easily in the air.

3. Parent birds sit on their eggs in order to keep them warm till the babies inside get fully developed.

F. Do yourself.

G. If there would be no trees, most birds will die away and a few of them will find some places on the ground to lay their eggs.

**CHECK POINT 1**

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

**CHECK POINT 2**

1. BLOOD 2. BRAIN 3. NERVES 4. KIDNEYS 5. HEART

**PRACTICE TIME**

A. 1. (T) 2. (F) 3. (T) 4. (T) 5. T

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

C. 1. skeletal 2. organ 3. circulatory 4. dust 5. digestive

D. 1. Skeletal system protects the organs of our body.

2. Kidneys are the main organs of the excretory system.

3. The main function of the circulatory system is to carry oxygen and digested food to all body parts, and wastes from all body parts to excretory organs through blood.

4. The food in the mouth is cut into small pieces by chewing it with the help of teeth. The chewed food gets mixed with saliva which makes it soft and slippery. It is then passed to the stomach through the food pipe.

5. We have five sense organs. They are eyes, ears, skin, nose and tongue.

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

F. 1. Exercises and outdoor games keep us healthy and fit by making our muscles work. They also make our muscles strong. So, we should do exercises and play outdoor games.

2. Brain receives messages from sense organs and sends messages to different organs of the body to work properly. So, brain is called control centre of the body.

G. 1. heart 2. skeleton 3. nose 4. blood

H. SKULL, KIDNEY, BRAIN, NERVES, HEART, FOODPIPE, MOUTH, TEETH

I. If the wastes are not removed from our body, they will gather inside the body and cause poisoning. Some wastes may be very harmful to the body and lead to many fatal diseases.

**CHECK POINT 1**

1. Vegetable group 2. Others 3. Meat group 4. Milk group 5. Fruit group

**CHECK POINT 2**

1. (X) 4. (X)

**PRACTICE TIME**

A. 1. (F) 2. (F) 3. (T) 4. (F)

B. 1. (a) 2. (b) 3. (d) 4. (b)

C. 1. grain 2. food 3. washed 4. growth 5. junk

D. 1. Cashewnuts are protective food items, therefore, they are placed in fruit and vegetable group of the food pyramid.

2. The food that protects us from diseases is called protective food, e.g., fruits, vegetables and nuts.

3. The diet which contains the right amount of food from each group of food pyramid is called a balanced diet.

4. Liquids in our food such as milk, lassi, milk shakes and fruit juices give us energy quickly and help in cleaning our body systems.

E. 1. Junk food is prepared with lots of salt, sugar, spices and oil. As a result, it is unhygienic and harmful for the body. So, Junk food should be avoided.

2. We should wash fruits and vegetables before eating in order to remove dust and germs from them.

3. Sportspersons need lots of eggs, meats, nuts and butter because these food items provide energy, help them develop muscles and also protect them from diseases.

F. 1. ice cream 2. egg 3. nut 4. chowmein

G. We can replace the unhealthy ingredients of junk food with healthy ingredients wherever possible. For example, the refined flour can be replaced with whole wheat flour, vanaspati ghee with pure ghee, sugar with sugar-free, etc.

**CHECK POINT 1**

1. (T) 2. (T) 3. (F)

**CHECK POINT 2**

Do yourself.

**PRACTICE TIME**

- A. 1. (T) 2. (T) 3. (F) 4. (T)
- B. 1. (b) 2. (b) 3. (b)
- C. 1. wet 2. right; left 3. first aid
- D. 1. An accident is a sudden and unplanned event that harms and injures us.  
2. Three precautions to be followed while using the road are:  
(a) Not playing on the road  
(b) Walking on the footpath  
(c) Crossing the road only at the zebra crossing.  
3. In such case, I would clean the cut with some antiseptic lotion and apply an antiseptic cream or cover it with band-aid.  
4. The three precautions that would be taken in playground are:  
(a) Never pushing or hitting others  
(b) Never fighting with others  
(c) Not breaking the rules of the game.
- E. 1. A car driver should not jump red light on a crossing because it can cause an accident by hitting vehicles coming from other sides.  
2. A bleeding cut should be kept at higher level than the heart because at this level bleeding would be relatively low.
- F. 1. accident 2. safety 3. fire
- G. First of all look for a fracture. If there is a fracture, support the arm with splints and a sling and do not allow any movement to it. Take the victim to the hospital. If there is no fracture, apply cold pack to relieve the pain.

**CHECK POINT 1**

1. No 2. Yes 3. Yes

**CHECK POINT 2**

1. RAYON 2. SILK 3. WOOL 4. COTTON

**PRACTICE TIME**

A. 1. (F) 2. (T) 3. (F) 4. (T)

B. 1. (a) 2. (a) 3. (c) 4. (d)

C. 1. building 2. cleaned 3. plants; animals 4. Nylon

D. 1. Clothes are important to us because they cover our body. They protect us from heat, cold, rain and insect bite, and also make us look beautiful.

2. Door and windows should have wire meshes to check the entry of flies, mosquitoes and other insects into the house. It also allows fresh air to enter the house.

3. A good house is one which is clean, has a good drainage system and gets good amount of sunlight and fresh air.

4. Polyester and nylon clothes are used during rainy season because they do not absorb water and hence dry fast.

E. 1. (a) **Towel:** It is made up of natural fibre, whereas other three are made up of synthetic fibre.

(b) **Straw:** It is used to make a kutcha house, whereas other three are used to make a pucca house.

(c) **Kitchen:** It is a part of house, whereas other three are types of houses.

2. (a) Sunlight keeps the house dry and germ-free. So, a house must receive plenty of sunlight.

(b) A house must have a good drainage system because it helps to remove the waste water from the kitchen, bathroom and toilets to the main drain of the city.

F. **Down:** 1. JUTE 3. POLYESTER

**Across:** 2. SHEEP 4. NYLON 5. SYNTHETIC

G. 1. synthetic fibre 2. silk 3. sunlight

**CHECK POINT 1**

1. BREEZE 2. OXYGEN 3. STORM 4. POLLUTION

**CHECK POINT 2**

1. Breeze 2. Dust 3. Atmosphere 4. Breathing

**PRACTICE TIME**

A. 1. (F) 2. (T) 3. (F) 4. (T)

B. 1. (a) 2. (d) 3. (b)

C. 1. wind 2. germs 3. polluted 4. evaporation

D. 1. A thick layer of air around the earth is called atmosphere.

2. Four uses of air are as follows:

(a) All living beings breathe in air.

(b) Plants get carbon dioxide gas from air to make their food.

(c) Moving air helps in drying clothes and wet surfaces.

(d) Water vapour in air forms clouds that give us rain.

3. When we heat water, it evaporates and turns into its gaseous form called water vapour or steam.

4. We can prevent water pollution by avoiding washing of clothes, throwing of garbage and dumping of harmful substances in rivers and other waterbodies.

E. 1. Factories give out lots of smoke and harmful gases which mix up with the air and make it polluted. Polluted air is harmful to us. So, factories should be made far away from living areas.

2. Air-filled tubes do not sink in water. Therefore, they prevent swimmers from drowning.

F. 1. Air has dust and smoke from vehicles, factories, etc. These make our clothes dirty.

2. If there is no air in the tyres of bicycle, they would deflate and the bicycle will not move smoothly.

G. 1. rain 2. air 3. water

H. The increased amount of carbon dioxide leads to global warming, that is, increase in the temperature of the earth. Carbon dioxide is important to us because plants use it to make their food by the process of photosynthesis. This food is used by us and other animals.

**CHECK POINT 1**

1. Storm 2. Breeze 3. Loo

**CHECK POINT 2**

1. SNOWFALL 2. SPRING 3. HUMID 4. SUMMER

**PRACTICE TIME**

A. 1. (F) 2. (T) 3. (F) 4. (T)

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

C. 1. sun 2. overhead 3. straight 4. hot 5. morning 6. cool 7. slanting

D. 1. The weather depends on the sun, clouds, wind and rain.

2. The weather is the condition of the air at a particular place and time, whereas changes in weather in a fixed cycle throughout the year are called seasons.

3. A cloudy day is cooler because the clouds do not allow the sunrays to reach us.

4. Spring comes after winter. It is a pleasant season. Plants get new leaves and blossom with beautiful flowers.

E. 1. The sunrays fall straight at noon and slanting in the evening. Straight sunrays spread over lesser area as compared to slanting rays and produce more heat. Therefore, noon is hotter than evening.

2. Cotton clothes absorb sweat and keep us cool. So, people prefer to wear cotton clothes in summer.

F. **Down:** 1. WIND 3. SUMMER 5. AUTUMN

**Across:** 2. SEASONS 4. RAINY 6. STORM

G. During rainy season, the air is moist. It contains many germs and spores of fungi which on getting in food can spoil it. So, it is advised to have freshly cooked food during rainy season to avoid diseases.

**CHECK POINT 1**

1. No 2. Yes 3. Yes 3. Yes

**CHECK POINT 2**

1. BEDROCK 2. SUBSOIL 3. DIAMOND 4. GRAVEL

**PRACTICE TIME**

A. 1. (T) 2. (F) 3. (T) 4. (F)

B. 1. (b) 2. (d) 3. (a)

C. 1. rocks 2. nutrients 3. gravel 4. Loam

D. 1. We get soil by the breaking of rocks.

2. Loamy soil is made up of equal amounts of sand and clay.

3. Humus makes the soil rich in nutrients which are required by the plants to grow.

4. Soil is important to us because we get food from plants that grow in soil by absorbing water and minerals from it.

E. 1. We should water the plants regularly because it helps the plants in growing as it is needed to make food.

2. Diamond is the hardest rock on the earth. So, sharp diamond tips are used to cut hard materials.

3. Farmers add fertilisers and manures to the soil in their farms and fields in order to make the soil more fertile.

F. 1. The farmer should dump the plant waste into a pit. The waste in the pit will change into manure which is useful to plants.

2. Marble and granite are hard. They can bear the load. So they are good for making kitchen slabs and floors in the buildings. Kitchen slabs cannot be made from wood as it can catch fire easily.

G. 1. diamond 2. granite, marble 3. topsoil 4. clayey soil

H. Earthworms make holes in soil and they feed on the dead and decaying leaves of plants. Thus, they make the soil porous and let the air in and help in bringing the inner soil to the top. This helps to enrich soil in nutrients.

**CHECK POINT 1**

1. Space 2. Orbit 3. Revolution

**CHECK POINT 2**

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

**PRACTICE TIME**

A. 1. (T) 2. (T) 3. (F) 4. (T) 5. (F)

B. 1. (a) 2. (b) 3. (a) 4. (a)

C. 1. rotation 2. constellation 3. sun 4. revolution

D. 1. The two movements of the earth are rotation and revolution.

2. The solar system is a family of the sun, the eight planets, their satellites and some other heavenly bodies.

3. When the moon is not visible at all, it is called new moon. When the moon gets back its full round shape, it is called full moon.

4. Constellations are groups of stars that make some patterns. For example, Ursa Major makes the shape of a big bear.

5. The eight planets of the solar system, starting from the sun, are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.

E. 1. **Sun:** The sun is a star, whereas Earth, Mars and Venus are planets.

2. **Moon:** The moon is a natural satellite while other three are constellations.

3. **Mountain:** Here, mountain is not a part of solar system while other three are the parts of our solar system.

4. **Globe:** It is a model of the earth, whereas other three are the seasons in a year.

F. 1. MOON 2. SUN 3. ORION 4. SATELLITE

G. The moon shines by the light of the sun that falls on its surface.

**CHECK POINT 1**

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

**CHECK POINT 2**

1. sound 2. good 3. Force

**PRACTICE TIME**

A. 1. (T) 2. (F) 3. (F) 4. (F) 5. (T)

B. 1. (a) 2. (a) 3. (a)

C. 1. light 2. luminous 3. larynx 4. good

D. 1. An object that gives us light is called a luminous object.

2. The irritating and unpleasant sounds are called noise.

3. Force can change the shape of an object. For example, by applying force, we can stretch a rubber band or we can roll a chapati.

4. Shadow is the dark shape of an opaque object, formed on a surface, when it comes in the path of light.

The length of the shadow changes when the object moves away or comes closer to the source of light. It becomes shorter, when object moves away from the source of light

E. 1. Moon shines at night by sunlight that falls on it. It is nonluminous object because it does not have its own light.

2. Speaking softly is pleasant to hear. So, we should not make a noise but speak softly.

F. FORCE, PULL, SOUND, PUSH, NOISE, MUSIC, SOURCE, LARYNX

G. Rubber band is flexible and when we apply force on it, its shape gets changed. As soon as we release the rubber band, it comes back to its shape. All this happens due to application of force.

**CHECK POINT 1**

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

**CHECK POINT 2**

1. Kilolitre 2. Weight 3. Thermometer 4. Capacity

**PRACTICE TIME**

A. 1. (F) 2. (T) 3. (F) 4. (T)

B. 1. (b) 2. (b) 3. (a)

C. 1. weight 2. hours 3. one 4. litre

D. 1. The objects that are used for measuring length are ruler, measuring tape and metre scale.

2. We measure the time with the help of watches and clocks.

3. The amount of a liquid that a container can hold is called its capacity.

4. The measure of the hotness or coldness of a body is called its temperature.

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

F. 1. 1000 2. 1000 3. 365 4. 24

G. 1. **Thermometer:** It is used to measure the temperature, whereas other three are used to measure the length.

2. **Litre:** It is the unit of capacity, while other three are units of time.

3. **Kilometre:** It is the unit of distance (length) while other three are units of weight.

H. 1. We can buy grocery items by using some nonstandard weights, such as bricks, stones, etc.

2. 1 kg = 1000 grams

I. No, these methods are not used today. This is because these units vary from person to person. Hence, they cannot measure same quantity all the time.