

**Green**

**Talk**

**(EVS) – 4**

**Chapter 1. Values in a Family**

**Warm Up Activity**

Do it yourself

**Friendly Activity**

Do it yourself

**Summative Assessment**

- A. 1. A family is a group of people who are related to each other and live together in a house.
2. A small family consists of father, mother and their one or two children whereas if there are more than two children in a family, it is called a big family. A joint family has grandparents, uncles, aunts and their children living in the same house with father, mother and their children.
3. An extended family includes relatives of both father and mother. For example, paternal grandparents, paternal uncles, aunts, their children, maternal grandparents, maternal uncles, aunts and their children. However, The extended family does not live in the same house.
4. Parents provide their children with a comfortable home, care, food, clothes, education and all things they need. Parents also teach good moral values and manners to their children. They help the children in doing their homework and in all the problems they face.
5. Family gatherings important because these are occasions when members of extended family get a chance to meet each other and share their joys and sorrows. Family gatherings may be happy or sad occasions.
- B. 1. Children help their parents in doing household chores like dusting, sweeping, mopping, removing cobwebs, putting things in place, organizing cupboards and putting the garbage in dustbins.

2. Grandparents can help their grandchildren by dropping or picking them from bus stop, school, tuitions or their friend's house. They can tell their grandchildren stories or play with them.
- C. 1. A family is the first school of a child.
2. An extended family includes relatives of both the father and the mother.
3. The members of the family get together during summer and winter vacations of their children.
4. Family gatherings bring closeness between members.
5. Family members have an emotional bond with each other.

**Formative assessment**

1. Do it yourself
2. I enjoy my family in many ways. I play with my sister and watch cartoon films with her. I sit with my family after dinner and we all enjoy jokes and tell each other interesting experiences and incidents. Sometimes my mother sings for all of us. She is a very good singer. On holidays father takes us out for a picnic. My mother cooks tasty snacks and arranges everything. We all enjoy a lot. We enjoy many family outings together like going to the mall, market, shopping, playing in the park, going for a walk, going to eat ice cream and visiting relatives and friends. I also go out in summer and winter vacations with my family.
3. This is a small family. It consists of father, mother, a son and a daughter.

**Chapter 2. Recreation**

**Warm Up Activity**

Drawing, football, visiting a circus

**Friendly Activity**

Indoor games— scrabble, watching comedy shows on television, antakshari

Outdoor games— badminton, hopscotch, hide-and-seek

### Quiz Time

My mother used to play pithoo (seven tiles), langri-taang (chase on one leg), hide-and-seek, pulling the rope, skipping, hoopla, ring-a-ring-a roses.

### Friendly Activity

Enjoying a puppet show, singing, dancing

### Summative Assessment

- A. 1. (c), 2. (c), 3. (b), 4. (b), 5. (a)
- B. 1. Recreation means any activity that is taken up only for relaxation, fun, joy and pleasure.
2. Mostly people get bored of their routine and they are often tired and stressed. They need recreation to get over boredom, relieve their tensions, relax, divert their attention and enjoy.
3. Indoor games can be played inside the house like ludo, chess, table-tennis. Outdoor games can be played outside the house like cricket, lawn tennis, football, basket ball etc.
4. Fair play is playing any game with a sportsman spirit. It means playing honestly giving equal opportunity to each player, following the rules of the game, respecting the opinion of all players and accepting the decision and opinion of the official.
5. Fair is a mela organized on festive occasions like Diwali, Dussehra, Christmas or Eid. There are many stalls that sell food items, handicraft, toys, clothes etc. In a fair there are also many rides, swings and game stalls.
6. We fly kites on Independence Day and Makar Sakranti.
- C. We play hockey, badminton, basketball, volley ball, cricket, lawn tennis, table tennis and throw ball in school.
- D. The occasions which we enjoy with our family members are family functions like birthday parties, weddings, family get together or when we celebrate festivals together like Diwali, Holi, Dussehra, raksha-bandhan, onam, eid, pongal,

Christmas, gurpurab and also when we go for a vacation.

- E. We enjoy flying kites on special occasions like Independence day and Makar Sakranti.

### Formative Assessment

- A. 1. We should follow the rules of the games.
2. We should not push or hurt anyone while playing.
3. We should not use rough language while playing.
4. We should respect the decision of the referee.
5. We need to realize that it is not important to always win a game.
- B. Do it yourself.

## Chapter 3. Houses Then and Now

### Warm Up Activity

**Type of house:** Kuchcha House

Building materials used: mud, thatch (dry grass), wood

**Type of house:** pucca house

Building materials used: bricks, cement, wood, mortar, iron, glass

### Friendly Activity

Do's	Don'ts
We must keep garbage in covered dustbins.	We must not throw garbage on the road or outside our house.
The drains should be covered.	Never leave the drains uncovered.
Keep the drains clear and unblocked.	Never throw plastic bags, cement or stones in the drains because these materials can block the drains.
In case of a blockage or leakage in drains call the plumber and get the sanitary repair done.	Do not try to poke rods into drains because this might do further damage than clear the drain.
	Do not spit on roads.
Use public or private toilets to urinate.	Do not urinate on roadsides.

## Summative Assessment

- A. 1. (b), 2. (c), 3. (d), 4. (d), 5. (c), 6. (c)
- B. 1. In the past houses were built with high ceilings with a lot of open space in and around the house. All the rooms had large windows and ventilators. There were wells or hand pumps in the courtyards of houses.
2. The main differences in a kuchcha and a pucca house are in the building material used and that kuchcha houses are weak and pucca houses are strong houses. Kuchcha houses are made of mud, bamboo, straw, dry grass and wood. Pucca houses are made of iron and steel rods, bricks, cement, stones, wood and glass.
3. The houses in multi-storeyed buildings are called flats or apartments.
4. A modern house is more durable, airy, safe and beautiful.
5. We keep our house clean by keeping the drains covered and cleaning them with phenyl. We should use covered dustbins to throw garbage. We should always throw garbage in the dustbins and get them cleared from time to time. We should sweep and mop the floors daily. We should not allow dust or cobwebs to collect.
- C. Mason, architect, electrician, carpenter, painter, plumber.

## Formative Assessment

1. Do it yourself
2. We should keep our house neat and clean because it is hygienic and keeps infections and diseases away. It is easier to find things when you are looking for something in an organized and clean house. A neat and clean house is pleasing to the eye and gives peace of mind.
3. Do it yourself.

## Chapter 4. Journey of Food

### Warm Up Activity

**Food from plants:** Flour, rice, cauliflower, brinjal.

**Food from animals:** Chicken, eggs, milk, fish

## Friendly Activity

Turmeric, black pepper, saffron, cinnamon sticks.

## Summative Assessment

- A. 1. The farmers grow food in the fields.
2. The farmer takes care of his crops by first preparing the soil for the crop by ploughing the field and adding fertilizers to it. After sowing the seeds he cares for the crops by watering them. He guards and protects crops day and night from insects, birds and animals. He sprays insecticides and pesticides on them.
3. The farmer sells his produce in the 'mandi' or whole sale market.
4. We buy our food items from the grocery store and green grocer.
5. Citrus fruits are juicy fruits like oranges, mausambi, grapes, raspberries and strawberries.
6. Beverages are drinks. Some beverages are tea, coffee and cocoa.
7. Spices are flavouring foods that we get from plants. They add flavour to food. Spices that have medicinal value are turmeric, cloves and ginger.
8. My mother uses mustard oil for cooking.
- B. 1. crops are cut, 2. crops are taken to the market, 3. food items are sold in the market, 4. food is cooked, 5. food is served.
- C. Do it yourself. Example— 1. coriander powder— dhania powder, 2. Brinjal— baigan, 3. Mustard oil— sarson ka tel, 4. Rice— chawal, 5. apple— seb.
- D. Do it yourself.

## Formative Assessment

1. The spices and foods I can recognize by smell are turmeric, clove, garlic, ginger, black pepper, coriander, mint, cinnamon and saffron.
2. Example— I talked to a vegetable vendor. Ram Kumar wakes up early in the morning at 3.30 am and takes a bath. He gets ready and reaches the whole sale market (mandi) by 4 o'clock in

the morning. He buys fresh vegetables and fruits and brings them in gunny bags in a three wheeler. He reaches the local market by 5.30 am and displays the vegetables on his cart and begins his sale. By 10.30 am he sells most of the vegetables. He then carries his cart and takes it around the residential complexes nearby to sell off his left over vegetables. He wraps up by 4 pm and goes home. He eats his food and spends about two to three hours with his family. He goes off to sleep by 7 pm as he has to wake up very early in the morning again.

3. & 4. Do it yourself

5. Fruits— apple, banana. Pulses— kidney beans (rajmah chitra), red kidney beans (red rajmah). Spices— red chillies, clove. Vegetables— ladies finger, cauliflower. Oilseeds— mustard, til. Cereals— Rice, gram. Beverages— tea leaves, coffee beans, Sugar— sugarcane, beet root.

## **Chapter 5. Eating Together**

### **Warm Up Activity**

Yes, I like to sit and have food together with my friends in school during lunch time. I share my food with my friends. I like to share sandwiches, pakoras, rolls, sweets and pancakes with my friends.

### **Quiz Time**

We eat out with our friends on occasions when we want to celebrate together as on a friend's birthday, if a friend wins a prize or a friend stood first in class.

### **Friendly Activity**

1. Wedding— snacks, dinner, ice creams and other sweet dishes
2. Birthday Party— cake
3. Picnic— chips, cold drinks
4. Restaurant or shopping mall— pizza, burger
5. Festival— sweets

### **Time to Think**

Mid-day-meals are served in government schools with the aim of encouraging students to come to school. Many children do not send their children to school because of the expenses incurred in school so they send them to work where they can get food too. This saves their expenditure on food. When

government schools offer free education and mid-day-meal, such people happily send their children to school.

### **Summative Assessment**

- A. 1. (c), 2. (c), 3. (b), 4. (a and d), 5. (b)
- B. 1. When a large number of people eat together it is called community eating.
2. Community eating teaches us about equality and importance of community service.
3. The occasions when people eat together are weddings, parties, langar, bhandaras, picnic, in regular schools and boarding schools.
4. Langar is food prepared in gurudwaras in a common kitchen in large quantities. It is cooked in large quantities and is served to thousands of people free of cost. The aim of langar is to promote principles of charity, community service and equality.
5. Mid-day meal is meal served free to students of primary schools in government primary schools by the government. Students are given milk, fruits, biscuits, aaloo-puri, vada, idli etc.
6. Mid-day meal is a scheme started in government schools to promote and provide primary education to all. The aim of mid-day meals is to encourage parents to send their children to school.
- C. 1. Gujiya, 2. Eid – sewian, 3. West Bengal – rice & fish.
- D. 1. false, 2. True, 3. True, 4. True, 5. False

### **Formative Assessment**

1. Menu— Snacks— paneer tikka, chicken tikka, fried fish, fried baby corn, Manchurian, spring rolls, masala dosa, sambhar vada.
- Main Course— dal makhani, butter chicken, paneer butter masala, fish curry, biryani, malai kofta, tawa fried vegetables, chana, mutton curry, pulao, tandoori parantha, naan.
- Sweet— gulab jamun, rasgulla, ras malai, ice cream, cake, pudding.

Drinks— fresh fruit juice, coke, limca, campa orange, fresh lime, lassi.

2. & 3. Do it yourself

## **Chapter 6. Our Tongue and Teeth**

### **Warm Up Activity**

Do it yourself

### **Summative Assessment**

- A. 1. (c), 2. (a), 3. (c), 4. (c), 5. (a), 6. (b)
- B. 1. Milk teeth are temporary teeth which remain in the mouth till the age of 12 years while permanent teeth are stronger. They replace the milk teeth and remain in mouth life-long.
2. Upper jaw is the jaw which rests on top of the lower jaw in the mouth. Lower jaw is movable while upper jaw is fixed to the head.
3. Premolars are flat teeth placed before molars. Molars are placed behind premolars and they are broad and flat in shape. Premolars help in chewing food while molars help in grinding food. Premolars are 8 in number, four in each jaw while there are 12 molars, six in each jaw.
4. Incisors are flat shaped sharp edged teeth that help in biting while canines are long and sharp and help in tearing food. The number of incisors is 8, four in each jaw and the number of canines is four, two in each jaw.
- C. 1. Tongue is a fleshy organ in the mouth. It helps in the movement of food in the mouth and swallowing it. Tongue can also recognize the taste with its taste buds as sweet, sour, salty and bitter.
2. We can take care of our tongue by keeping it clean with a tongue cleaner. We should also rinse our mouth after every meal. We should use a good mouth wash every day after brushing our teeth. We should not eat very hot and spicy food.
3. Teeth are important to us because they

help us to chew and break the food into small pieces so that it can be digested easily inside the body. Teeth also give shape to our face and add to its appeal.

4. To take care of teeth we should brush our teeth twice every day, once in the morning and once before sleeping at night. This removes the food particles sticking to the teeth. The toothbrush should have soft bristles and should be moved in a circular motion over teeth. Avoid eating sticky foods like chocolates and sweets. Eat healthy foods like carrots, cabbage and citrus fruits. Rinse your mouth well to remove food particles after every meal. Floss the teeth once in a day. Visit the dentist once in a month.
5. We should not eat too many chocolates and sweets because they stick to our teeth and if teeth are not cleaned properly these sweets make cavities or holes in the teeth and cause tooth decay.

### **Formative Assessment**

1. (a) Scaling of teeth— Scaling is a process of dental cleaning to remove the hard tartar which forms on teeth. It is hard and cannot be removed by just brushing. Scaling also removes plaque and trapped food inside the teeth which contains germs. If these are not removed they can cause tooth decay and gum disease.
- (b) Bleaching of teeth— Bleaching of teeth is also called whitening of teeth. It is a dental procedure to restore the natural colour of teeth and whiten them. A bleaching solution is used to remove the stains and yellowness of teeth. It can make the teeth brighter by 3 to eight shades.
2. An orthodontist is a special type of dentist who specializes in straightening crooked teeth and misaligned jaws. Mostly orthodontists use braces.
3. Incisor, canine, premolar, molar.

## **Chapter 7. Water**

### Warm Up Activity

Well – U, Canal – S, hand pump – U, pond – S.

### Friendly Activity

Ganga, Yamuna, Narmada, Kaveri.

### Summative Assessment

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

- B. 1. Rivers are formed in two ways. Water is present in solid form on mountains in the form of ice and snow. This snow melts to liquid form and flows in the form of rivers. Glaciers on mountains feed these rivers. Rivers are also formed when water from springs collects to form small streams and these streams join together to form a river. Rivers that get filled up by rain water are called rain-fed rivers.
2. As the river reaches the place where it is about to join the sea, it gets divided into smaller rivers because of deposits of sand, silt and clay at its mouth. This triangular land formation is called a delta.
3. The place where sea water meets land is called a coast.
4. The three forms of water are water vapour (gas), water (liquid) and ice or snow (solid).
5. Evaporation is a process in which water in liquid form on heating, changes to gaseous form called water vapour while condensation is opposite of evaporation because in evaporation water vapour on cooling is changed to water in liquid form.
6. Water cycle is the rotation of states of water in nature; liquid (water) to gaseous state (water vapour) and back again to liquid state. Water in rivers, ponds, lakes, seas and oceans evaporates due to heat of sun rays and forms water vapour in the atmosphere. As it rises to upper atmospheric layers it condenses to form tiny droplets of water. These droplets get bigger to form clouds. When they become heavy they fall as rain, snow, sleet or hail. Rain water collects in water bodies like rivers, lakes etc. and moves to seas and oceans. Evaporation

takes place again in these bodies. This circle is known as water cycle.

Draw the diagram yourself.

7. Judicious use of water is water conservation.
- C. 1. Ground water— tube well, hand pump  
2. Surface water— lake, river.  
3. Salty water bodies— sea, ocean.

### Formative Assessment

1. Clothes dry faster when it is windy.
2. Visit the park. Dew— When we walk on the grass early in the mornings we see very small droplets of water on leaves and grass. These droplets of water are called dew. In winters often water is suspended in air in gaseous form as water vapour. When this water vapour settles on leaves and grass it cools further and gets condensed and thus turns into liquid water drops. These water droplets are called dew.
3. & 4. Do it yourself

## Chapter 8. The Journey of Water

### Warm Up Activity

**Picture 1:** Garbage is being dumped in the water body.

**Picture 2:** Animal is being bathed in water.

**Picture 3:** Waste from factories (industrial waste) is being released into water body.

### Friendly Activity

We can save water in the following ways:

1. Check all taps and pipes for leakage. In case of leakage get the repaired immediately.
2. Do not leave the tap running while brushing or washing clothes when you are not using water.
3. The waste water after bathing can be used for cleaning the house.
4. Fill only as much water in the glass as you want to drink. Do not fill the full glass if you don't need it.
5. Collect rain water in large containers or tanks.

### Summative Assessment

A. 1. (b), 2. (c), 3. (d), 4. (d)

- B. 1. People make the water dirty by immersing idols of gods and goddesses.
2. Polluted water can cause many diseases like typhoid, diarrhea, cholera, jaundice and skin diseases.
3. Water filters can be used to remove impurities in water.
4. Boiled water does not let germs breed in it.
5. People store water in containers made of steel and aluminium.
- C. 1. Water pollution is making the water dirty with dirty and harmful substances.
2. Water pollution is caused by human activities like throwing garbage, washing clothes, bathing animals, disposing factory wastes, immersing idols and throwing dead bodies in the water bodies.
3. Polluted water can cause many diseases like cholera, diarrhea, typhoid, jaundice and skin diseases. Water plants can get infected and animals in water like fish can die or become unhealthy. People who eat these infected plants and animals can also fall sick.
4. We need to purify the water we drink to avoid diseases and infections.
5. Water fit for drinking is called potable water.
6. Water reaches our homes from rivers and lakes through public water distribution system. It is first carried through pipelines to purification unit where it is made free of germs and impurities. It is then distributed through pipelines to different parts of the city. It reaches the storage tanks and then taps in our homes.
7. To protect the water from becoming dirty it should be stored in covered containers or bottles. We should not put our hands in the water container to take out water, a ladle should be used. Boiling water also does not allow germs to breed in water.

### Formative Assessment

- A. 1. rain, 2. river, 3. pipeline, 4. water purification unit, 5. Tank, 6. tap.
- B. There is a lot of difference in the water from a river and water from our taps. There are a lot of solid suspended particles we can see in the water from the river but no particles are visible in the tap water. The colour of river water is muddy while tap water is clear and colourless.
- C. If we store water in a container without covering it, some insect, fly, mosquito, dust or any other particle might fall in the water, making it unfit for drinking.

### Chapter 9. Plants and Trees

#### Warm Up Activity

Do it yourself

#### Friendly Activity

We can take care of plants and trees that grow in our home by watering them regularly and putting fertilizers as and when needed. We should not pluck their flowers uselessly and fruits should be picked only when ripe. To take care of plants and trees that grow in parks and along roadsides, we should not pluck their leaves, fruits and flowers or break their stems.

#### Summative Assessment

- A. 1. money plant, 2. poisonous ivy, 3. amalaki, 4. tulsi.
- B. 1. false, 2. true, 3. true, 4. false, 5. true.
- C. 1. Why are plants and trees useful Plants and trees are useful as we get foods like vegetables, fruits, nuts, spices and crops from them. We also get beautiful flowers from plants and shade from trees. Plants and trees clean the air and give us oxygen to breathe.
2. Government bodies like Municipal Corporation or the Municipality looks after the trees on roadside.
3. Neem, gulmohar, kikar and bel tree are some common trees we see in the neighbourhood. Common plants are

- Dahlia, rose, hibiscus, mint and tulsi.
4. Domestic plants are trees and plants that grow in our homes and gardens.
  5. Weeds are wild plants that grow on their own. They are not grown. For example, water hyacinths, dandelion, congress grass and daisies.
  6. Adivasis are tribal people who still live in forests. These forest dwellers depend on forests for their livelihood. Forests are cultural homes for them. They have a good knowledge of medicinal plants and poisonous plants. They use this knowledge and survive on forest produce. They protect and conserve forests because their life depends on forests.

#### Formative Assessment

1. Forests are government properties and therefore the government assigns people in the forest department to look after the forests. Forest department assigns officers and guards for forest areas. The officers are responsible for conservation and protection of forests. They also inspect development programs for further development of forests. They keep a track of trees and other forest products. They also keep control of administrative jobs like maintaining all records of accounts relating to revenue, expenditure, timber and other forest produce. They receive and spend on maintenance and development of forests and the department staff. The officer is responsible that no one cuts any trees or damages or destroys any part of the forest in any way. They do not allow any misuse of forest produce.
2. We should take care of plants and trees because they purify air and give us oxygen for breathing. We also get food from plants and trees. Food and oxygen are our basic needs and we can survive only if we get these two things. Trees also give us shelter and shade. We get wood for building houses, furniture and for burning as fuel.
3. Do it yourself

4. Neem, Amla, Tulsi, Bhringaraj, Pippali

### Chapter 10.

#### Warm Up Activity

Do it yourself

#### Friendly Activity

Lily, Hibiscus, Dahlia, Marigold.

#### Summative Assessment

- A. 1. (b), 2. (b), 3. (b), 4. (c), 5. (d)
- B. 1. Dahlia, Pansy, Jasmine  
2. Sunflower, marigold, salvia.  
3. Daffodil, tulip, carnation  
4. Rose, Marigold
- C. 1. Tap root is the type of root in which there is one main root while in fibrous root a small group of roots branches from the base of the stem.  
2. Breathing roots are spongy roots that grow above the ground to absorb air that enables the plant to breathe.  
3. Photosynthesis is a process of making food in leaves with the help of a green pigment present in them called chlorophyll. Sunlight, water and carbon dioxide in air are also essential for photosynthesis.  
4. Florist sells flowers in the market.  
5. Flowers are used for decoration in parties, functions and rangoli. They are given to each other on occasions like birthdays, weddings and anniversaries. They are even offered to honour someone on death as wreaths. They are offered at the time of prayers as offerings. Gajraas and flowers are worn by women in hair. Flowers add to the beauty of gardens and landscapes. Flowers are eaten as food like cauliflower and broccoli. Gulkand for paan is extracted from rose. Some flowers are used in spices such as saffron, clove and caper. Flowers are used for making perfumes, scents, essences, hair oils and cosmetics. Some flowers have medicinal uses while some are used to extract natural dyes like tesu or

palash. Sunflower seeds give us an edible oil used for cooking.

D. summer, spring

### Formative Assessment

1. & 2. Do it yourself

## Chapter 11. Birds – Beaks and Claws

### Warm Up Activity

Stork, sparrow, parrot

### Friendly Activity

Hawk— claws of preying bird, Parrot— claws of climbing bird, Sparrow— claws of perching bird, Duck— webbed claws of swimming bird.

### Summative Assessment

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

B. 5, 4, 3, 2, 1.

C. 1. A vulture has a sharp, hooked beak to pierce and tear flesh because it is a flesh eating bird.

2. Swans have webbed feet because they are swimming birds and use their feet as oars while swimming in water.

3. Flesh eating birds have strong claws for tearing the flesh of their prey.

4. Cranes have long legs with spread out toes as these help them to wade through muddy waters without sinking.

D. 1. Birds use their beaks to collect and eat their food, protect themselves and to clean their feathers.

2. Grain-eating birds need to break their food before eating so they have short, hard and horny beaks while flesh eating birds need to pierce and tear flesh so they need sharp and hooked beaks.

3. A bird uses its claws for catching their food, holding the branches of trees and moving around. They can also use their claws to tear their prey, climb of trees, hold the branches of tree firmly, scratch the ground, wade through water or swim in water.

4. A sparrow eats grains or seeds which are hard so the sparrow first breaks them with its beak into smaller portions and eats it.

5. Swimming birds have webbed feet. They have three toes in front and one at the back. The three front toes are joined by flaps of skin called webs. The swimming birds use their webbed feet as oars while swimming in water.

6. A wood pecker has a chisel shaped beak because it helps the bird to make holes in the bark of the tree to pick out insects.

### Formative Assessment

1. Birds commonly seen in gardens are:

**Common mynah:** Often feeds on ground and has a varied diet including kitchen waste.

**Black Kite:** This bird is a scavenger (feeds on dead rats and other dead animals), it also eats any food left in the open and picks up small squirrels, rats and earthworms.

**Pigeon:** Feeds on a variety of grains and seeds.

**Parrot:** Feeds on fruits and crops.

**Crow:** Crows are omnivorous. They feed on rubbish, left overs, debris and sewage. They also feed on lizards, fish, frogs, insects, crabs, nectar, fruits, cereal seeds, chicks, eggs and small mammals.

**Asian Koel:** Feeds on fruits and berries on trees. It also feeds on insects and caterpillars.

2. Do it yourself

3. Unusual birds in a zoo are Malabar parakeet, Nilgiri laughing thrush, Nilgiri fly catcher, Himalayan Monal, Mrs. Gould's Sunbird, Oriental Dwarf Kingfisher, Ostrich, black Swans, owls, Great Indian Hornbill, Eagle Crested Serpent, black headed Munia, horned owl, great Indian Parakeet, partridge grey, Shikra, painted Stork, blue and yellow Macaw, cockatoos, sulphur-crested Cuckatoo, shovellers, wild ducks and white Vulture.

4. Odd animal in each row— parrot, Nightingale, Koel, Kiwi, Snake

## Chapter 12. Animals in Our Lives

### Warm Up Activity

W, D, W, D, W

### Friendly Activity

3. Rhinoceros, 1. Chiru, 2. Bear

### Summative Assessment

A. 1. Animals useful to us in the following ways:

**Provide food**— we get milk from animals like cows, buffaloes, goats and camels. We use milk as food and also to make curd, ghee, paneer, butter, cheese and sweets. We also eat meat of many animals like goat, chicken, fish etc. We also get honey from bees which we use as sweetener and also as medicine and health food.

**Clothes**— We obtain silk from silk worm. Wool for warm clothes is obtained from sheep and Yak. We make warm clothes using animal furs. Hair of chiru and mountain goats are used to make shawls of shahtoosh and pashmina.

**Medicines**— Snake venom is used to make medicines to treat cancer. Cod-liver oil and shark-liver oil are rich sources of vitamins. Fish oil is also a widely used medicine.

**Soil-enrichment**— Earthworms turn the soil and make it airy and better suited to grow crops. Animal waste is used as manure for crops.

**Fuel**— Cow dung is used as fuel to produce biogas and is also used as fuel in chulha for cooking.

**Means of transport**— many animals are used as means of transport like horses, camels, elephants, donkeys and mules are used to carry loads and people from one place to another. Animals like cows, buffaloes, camels, horses are also used to draw carriages and carts.

**Entertainment**— many animals are trained to entertain us in circuses, dolphin shows, movies etc.

**Companions**— some animals are kept as pets to give us company like dogs, cats, rabbits, goat, monkey etc.

**Ornaments and accessories**— Elephant tusks and teeth of Rhinoceros are used to make combs and ornaments. Pearls are extracted from oysters to make jewellery. Hide of many animals is used to make belts, purses, bags, shoes and dresses.

2. Some animals are in danger of extinction because their number has decreased due to either excessive hunting or loss of habitat. Many animals are killed for their skin or other body parts. Some are killed just for the fun of hunting. Many forest areas are being cleared to fulfill the demand of land for residences, industries, offices, expansion of cities and towns, building roads and railway lines. With the loss of forests many animals lose their natural habitat.
3. Animals whose number has decreased so much that they are facing extinction, are endangered animals. For example, black buck, chiru, musk-deer, elephant and tiger.
4. Illegal hunting of animals for their body parts is called poaching.
5. 'Project Tiger' is a wildlife conservation project in India to save and protect the tiger population from extinction. It was launched in 1973 with an aim to save the Bengal Tiger. The project was started by Government of India with nine tiger reserves.
6. Forests are areas that come under government control so Government plays an important role in saving wildlife. Government sets up areas where hunting of animals, cutting trees and taking forest produce is banned. Government protects animals and their habitat to save wildlife. For carrying out these activities the government has set up a separate department and assigned officers with proper distribution of jobs.

7. National parks are areas where animals can move around in their natural habitat. Here the wild animals are protected along with vegetation. Wildlife sanctuaries are areas marked to prevent wildlife from extinction.

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

- C.
1. Tiger is hunted for almost all its body parts
  2. Black buck is hunted for meat and skin.
  3. Chiru is hunted for its fine under-fleece called shahtoosh which is used for making shawls.
  4. Elephant is hunted for its tusks which are used to make ornaments.
  5. Musk-deer is poached for a pair of scented glands present under the belly of males that produces grains of musk with strong scents. This is used to make medicines and perfumes.
  6. Rhino is poached for its horn.
  7. Bear is hunted for its skin and other body parts to make Chinese medicines.

#### Formative Assessment

1. Project on endangered animals— the students should collect pictures and make their own project. To help the students some information is given below.

#### GHARIYAL

The gharial is also known as the gavial. It is a fish-eating crocodile native to the Indian subcontinent. The gharial is one of the longest of all living crocodiles, measuring up to 6.25 m. It has a long snout well adapted to catching fish, its main diet. The male has a distinctive boss at the end of the snout, which resembles an earthenware pot known as ghara.

Gharials once inhabited all the major river systems of the Indian Subcontinent but today they are extinct in Indus River and their distribution is limited to 2% of their former range.

A population decline of 96–98% has occurred since 1946, and the once-widespread population of an estimated 5,000 to 10,000 individuals

has been reduced to a very small number of widely spaced subpopulations of fewer than 235 individuals in 2006. As the population has declined drastically in the past 70 years, the gharial is listed as critically endangered.

Ghariyal is hunted for its meat and skin and also for specific medicines. However, hunting is not the only reason for decline in Ghariyal population. The drastic decline in the gharial population can be attributed to a variety of causes:

- ❖ Loss of riverine habitat to dams, barrages, irrigation canals, siltation, changes in river course, artificial embankments, sand-mining, riparian agriculture, and domestic and feral livestock.
- ❖ Depletion of fish resources
- ❖ Use of fishing nets
- ❖ Egg collection for consumption
- ❖ Affected by the increasingly levels of pollution in the water

The Indian government stepped up and provided protection to the ghariyal population under the Wildlife Protection Act of 1972. Project Crocodile began in 1975. The project included an intensive captive breeding and rearing program intended to restock habitats with low numbers of gharials.

Conservation programs have been undertaken in India and Nepal, based on the establishment of protected areas and restocking these with animals born in captivity. Gharials are bred in captivity in the National Chambal Sanctuary in Uttar Pradesh, and in the Gharial Breeding Centre in Nepal's Chitwan National Park, where they are generally grown for two to three years and average about one metre in length and then released in the wild.

Sixteen crocodile rehabilitation centers and five crocodile sanctuaries including the National Chambal Sanctuary and Katarniaghat Wildlife Sanctuary were established in India between 1975 and 1982.

## Indian Rhinoceros

The Indian rhinoceros is also referred to as the Great One-Horned Rhinoceros. Its single horn distinguishes the Indian rhinoceros from its African counterparts, who all have two horns. The greater one-horned rhino once ranged the entire stretch of the Indo-Gangetic Plain— northern Pakistan, much of northern India (including Assam), Nepal, northern Bangladesh, and Myanmar. It occurred mainly in alluvial plain grasslands, where the grass grew up to 8m tall. It was also found in adjacent swamps and forests. Weighing up to 2200 kg (4800 lb.), Indian rhinos graze in flood plain areas in Northern India and Nepal.

It is a herbivorous animal meaning that it sustains itself on a purely plant based diet. They survive on the densely vegetated sub-tropical forest for leaves, flowers, buds, fruits, berries and roots which they dig up from the ground using their horns.

Interestingly, they have lips that are specially adapted to grasp the grass they eat (also known as prehensile lips). They occasionally eat crops as well.

To combat the heat, Indian rhinos eat during the cooler parts of the day and immerse themselves in nearby rivers and mud holes during the hottest parts of the day. They are considered to be good swimmers and sometimes eat the aquatic plants they encounter.

The rhinoceros uses its horn for defence, intimidation, digging up roots and breaking branches during feeding. The horn of the Indian rhinoceros is made from a substance called keratin and is therefore very strong.

The species came very close to extinction in the early 20th century. By the early 1900s, the population was so far reduced that rhino hunting was prohibited in Assam, Bengal and Myanmar. Only 600 individuals survived in the wild in 1975, in India and Nepal.

The causes of decline in population of rhinoceros were:

- ❖ Hunting for horn— Rhinoceros is mainly killed for their horn which is hard, hair-like growth, which finds medicinal use in China, Taiwan, Hong Kong, and Singapore. The horn is also valued in North Africa and the Middle East as an ornamental dagger handle.
- ❖ Hunting for sport— Rhinos were hunted for sport by both Europeans and Asians.
- ❖ Hunting for crop protection— Rhinos were also killed as agricultural pests in tea plantations.
- ❖ Habitat loss and degradation— Today, the need for land by the growing human population remains a major threat. The enormous reduction in the species' range was mainly caused by the disappearance of alluvial plain grasslands.

## Conservation of Rhinos

WWF (World Wide Fund for Nature) stepped in to check the decline in rhino population. They started programs in Kaziranga National Park in India and Royal Chitwan National Park, Nepal.

WWF is working in both India and Nepal to conserve the greater one-horned rhino by:

- ❖ Strengthening anti-poaching efforts and protected area management
- ❖ Trying to restore dispersal corridors
- ❖ Creating additional populations through translocations
- ❖ Working with local communities in Nepal to enable them to benefit economically from the presence of rhinos.

Even so, the species faces the ever-present threat of poaching for its horn.

## Success Story

The greater one-horned rhino is a conservation success, with numbers increasing dramatically since 1975.

By 2011, conservation efforts saw the population grow to 2,913 in the Terai Arc Landscape of India and Nepal and the grasslands of

Assam and north Bengal, northeast India. It is now often found in cultivated areas and pastures, as well as modified woodlands. Greater one-horned rhinos are now the most numerous of the three Asian rhino species. Now there are thought to be around 3,000 Indian rhinoceros individuals left in the wild, two thirds of which are believed to be in the Assam region of India. Strict protection has allowed the rhino population to increase, currently at a rate of approximately 5% per year. With at least half of the total population, India's Kaziranga National Park remains the key reserve for this species. Royal Chitwan National Park, Nepal, currently holds about 500 individuals.

### **Asiatic Black Bear**

The Asiatic Black Bear is a medium to large sized species of bear that is found inhabiting the deciduous tropical forest throughout Asia.

Despite being classed as carnivores, like other bear species Asiatic Black Bears have a widely varied omnivorous diet meaning that they eat both small animals and plants throughout their natural range. Acorns, beechnuts, walnuts and other nuts and seeds, along with fruits such as cherries, bamboo shoots and leaves, grasses, herbs, grubs and insects including termites and ants make up the majority of their diet, supplemented by the occasional bird or rodent when other foods are in short supply.

In areas where human settlements have encroached heavily on the Asiatic Black Bear's natural habitats, they are sometimes known to raid agricultural plantations along with taking occasional livestock from farms.

Known to be closely related to the American Black Bear, the two species exhibit a number of similarities including their size, appearance. Unlike the American Black Bear however, that is showing increases in population numbers particularly in certain areas, the Asiatic Black Bear is considered to be an endangered species throughout its native range today. Although they have a relatively wide distribution

throughout South-East Asia as well including Myanmar, Vietnam, Laos, Cambodia and Thailand they are today absent from Malaysia.

It is widely believed that there are fewer than 50,000 left in the wild today. Despite the ban of their hunting throughout their natural range with the exception of Japan where numbers are thought to actually be increasing, Asiatic Black Bears remain heavily threatened by both hunting and habitat loss, along with the capture of them as pets, for sport or to spend the rest of their days in the misery of a bile farm.

Asiatic Black Bears are listed by the IUCN's Red List as a species that is endangered in its natural environment and could become extinct in the near future if the situation continues without change. The major threat to bears in China and Southeast Asia is the commercial trade in live bears and bear parts, especially gall bladders (bile).

Causes of decline in population of Asiatic black bear are:

- ❖ Loss of natural habitat— Deforestation has led to loss of natural habitat for this species. Habitat loss is attributed to logging, expansion of human settlements, roadway networks, and hydro-power stations and increasing levels of agriculture. This has resulted in the remaining populations of Asiatic Black Bears being pushed into small and isolated pockets of vegetation at higher altitudes. Habitat loss and degradation is most severe in the southern portion of the range.
- ❖ Gall bladder Trade— They are the most prized of all bear species that are hunted for their body parts mainly the gall bladder. Asiatic Black Bears are mainly hunted for gall bladders as dried bile is used in traditional Chinese medicines and believed to contain numerous healing properties. This industry alone has contributed heavily to the severe decline in population numbers. It is believed that bile from wild bears is more effective at healing various

ailments, and thus people are willing to pay higher prices for this product and this may actually increase demand for bile from wild bears.

- ❖ Commercial bear farming — It was started in China and Viet Nam to satisfy the demand for bile by practitioners of Traditional Chinese Medicine. This has led to the bears being captured and kept in bile farms particularly in China and Vietnam where their living conditions are often a great cause for concern for environmental activists and conservationists. Other uses of bile are in manufacture of lotions, shampoos, cosmetics. The bile is periodically drained, so the captive bears do not have to be killed though initially bears are removed from the wild and kept in captivity. Despite a ban in 1992 the practice continues and the number of wild-caught farmed bears in Viet Nam is estimated to have increased. It is believed that bile and other parts from this captive population supply an illicit market.
- ❖ Skin Trade— Bears are also hunted for their fur and skin.
- ❖ Served as a culinary delicacy— In some areas bear paws are considered to be an exotic culinary delight so Asiatic Black Bears are hunted for their paws. The market for bear paws also appears to be increasing.
- ❖ Entertainment (Bear baiting) in Pakistan— The capture of live bears presents yet another threat to this species. In several Southeast Asian countries Asiatic black bears are routinely confiscated from people attempting to raise them as pets.
- ❖ Asiatic Black Bears are often captured and kept as pets and captured in Pakistan to fight dogs, in a process known as bear baiting. Not only is this sport morally horrendously wrong but the teeth and claws of the Asiatic Black Bears are also removed before the fighting begins so they have no chance to defend themselves

against the onslaught of the Bull Terriers. This practice was made illegal in 2001, but continues to some extent.

The demand for these bear products has fuelled a growing network of international trade throughout Southeast Asia, and has turned many subsistence hunters into commercial hunters.

### Conservation Actions

The most beneficial conservation measure for Asiatic black bears would be to substantially lessen the demand for bear products, and thus reduce hunting and trade. The species is protected under both international and national laws, but often these laws are not enforced. In most range countries Asiatic black bears are listed as a protected species. For example, they are protected under Class 2 of China's Wildlife Protection Law (a limited number of permits are issued to kill nuisance animals), and under Schedule I of the Indian Wildlife (Protection) Act. In South Korea they are designated as a national monument (No. 329) within the Cultural Properties Protection Law and also as an Endangered Wild Animal. In Japan, this species is listed under the Law for Conservation of Endangered Species of Wild Fauna and Flora, which for trade requires certification of legal take; however, gall bladders and paws are exempted. Throughout Southeast Asia this species is totally protected in every range country, with the exception of Myanmar, where this species is classified as "normally protected", meaning that it may be killed with a special license (although such licenses are rarely issued). Sport hunting of Asiatic black bears is legal only in Japan and Russia. However, a high number (generally 1,000–2,000, but as many as 4,000) of nuisance black bears are killed annually (using guns, traps, and snares) in towns or agricultural areas of Japan.

Efforts are underway in South Korea to restore the wild bear population through restocking, initially with captive-born

bears, but more recently with orphaned wild bears from Russia. Some Southeast Asian countries, like Cambodia and Thailand are also considering reintroducing bears from captivity.

1. Students should attempt this on their own but some guidelines about the features, likes and dislikes and eating habits of some animals and birds have been given here to help the students.

Birds and animals I liked the most at the zoo are: Deer, Kangaroo, Tortoise, Lion-tailed Macaque, White Tiger and Emu.

### Deer

Deer are animals that have hoofs with an even number of toes. Deer can be found around the world. They are native to all continents except for Australia and Antarctica. There are about 100 types of deer, including the whitetail deer, reindeer, elk, moose, mule deer, black-tail deer and caribou. Male deer are called bucks, bulls, stags or harts. Female deer are called does, cows or hinds. Young deer is called fawn or calf. Deer lives in a variety of habitat from forests to croplands. They use the woodlands for cover and shelter and the open land to graze in. Deer usually stay in the same area called a home range.

#### Features

- ❖ **Antlers:** Deer are the only animals that have antlers. Antlers are usually only found on males. In some species, like caribou, you will also find them on females. Moose have the largest antlers. Antlers grow from spring until fall. While growing, antlers are covered with a soft tissue known as velvet. This tissue contains a network of nerves and blood vessels and is very sensitive. In the fall, the velvet is shed and the antlers harden. In the winter, the antlers are shed. Antlers should not be confused with horns. Horns are never shed and continue to grow throughout the animal's life. If they are broken, they won't grow back.

- ❖ **Sense of hearing:** Deer have a great sense of hearing. They have a lot of muscles attached to their ears which allow them to turn their ears in any direction, without moving their heads. They can hear higher frequencies of sound than humans.
- ❖ **Coat:** The brown coat of the deer provides great camouflage in the woodlands. By standing still, they can go undetected by a passing predator. Fawns have a reddish-brown color covered with white spots, which help camouflage them and disappear when they are 3-4 months old. In the fall, deer will shed their summer coat and receive a much thicker winter coat.
- ❖ **Eyes:** Deer have their eyes on the sides of their head, giving them a 310 degree view. This wide view does make it hard for deer to focus on a single point. Deer have a good night vision, which is useful in the early morning and near dusk.
- ❖ **Teeth:** Deer have small teeth in the front of the bottom jaw, which they use for tearing and breaking apart food. They have no teeth in the front of the top jaw. Instead they have a hard palate, which is used in much the same way as teeth. In the back of the mouth deer have molars, canines and incisors, which are used for chewing. Deer are born with four baby teeth and develop baby incisors and premolars in their first months. Their adult teeth come in and replace the baby teeth when they are about 18 months old. You can guess the age of deer by looking at the type of teeth they have and by how worn these teeth are. Each year, molars loose about one millimeter of height.
- ❖ **Legs:** They have long legs with powerful muscles and are able to run 40 miles per hour and jump 10 feet high. They are also fast swimmers.
- ❖ **Smell:** Deer have an excellent sense of smell, which allows them to detect predators from a long distance away. Deer

lick their nose to keep it moist, which helps odor particles stick to it, improving their sense of smell. The nose also plays a role in communication. Deer produce scents with glands located on their head, legs and hooves. These scents provide information to other deer about their gender, social status, physical condition and whether an area is safe.

- ❖ **Babies:** Fawns are able to stand and walk shortly after birth. The mother keeps them hidden in bushes and checks up on them about 6 times a day to feed them. Young deer stay with their mothers for 1-2 years.
- ❖ **Food Habits:** Deer are herbivores. They eat grass, leaves, stems, shoots, berries, herbs, acorns, mushrooms, wild fruit and agriculture crops like corn and soy beans. Deer are ruminants (cud chewers) and have a four-chambered stomach. Other ruminants include cattle, goats and antelope. Deer start eating in the morning. They hardly chew their food which goes into the first stomach. While they rest, the food will move to the second stomach and form little balls. Now the food is brought back to the mouth and chewed. This chewed food goes into the third and fourth stomachs.
- ❖ **Life Expectancy:** The life expectancy of deer is 20 years.

### **Kangaroo**

Red Kangaroo is the largest living marsupial. Males can be as tall as two metres and weigh up to 198 pounds (90kg). The female is smaller and a blue-grey colour. The Red Kangaroo has long distinctive ears, powerful back legs with long feet and a long thick muscular tail. Its front legs are smaller.

Kangaroos are found only in Australia. The Red Kangaroo can go without water for a long time, so it can live in the inland desert, grassland, mallee and mulga areas. Kangaroos usually stay in one location, but when there's a drought they

can travel up to 112 miles (180km) looking for food.

### **Features**

- ❖ The female has a pocket of skin called a pouch on the lower part of her stomach to carry her young.
- ❖ Kangaroos hop instead of walking or running, and except when swimming, can only move both their hind feet together. The Red Kangaroo hops on its powerful back legs at speeds up to 37 miles per hour (60km).
- ❖ Their long heavy tail is used to counterbalance the top part of their body when moving and as a prop when sitting or fighting. Their smaller front legs give them slight support when they bend down to graze or move slowly along the ground.
- ❖ When moving quickly they tuck their front legs under their chest.
- ❖ Living in the drier areas, Red Kangaroos eat grass, leaves and tree bark. If they can find enough green grass they can go without drinking water for a long time.
- ❖ Kangaroos are sociable and move in groups of 10-12 up to 100. There is usually one dominant male in the group. He will fight outsiders and younger males trying to take over the group.
- ❖ Kangaroos fight by standing on their rear legs and attacking with their front legs. They can also balance their whole body on their strong tail, lift their back legs off the ground and hit out with the sharp claws of their rear feet.
- ❖ When grazing together they are always on the lookout for danger and will warn others in the group by stamping their feet. This is a sign for young joeys to hop back into the pouch.
- ❖ When a kangaroo is born it is blind and has no fur. The 3/4 of an inch long (2cm) Joey takes three minutes to climb, without help.

Once it has a covering of fur the young Joey leaves the pouch for short exploring trips. The Joey stays out for longer periods returning only for milk, until it becomes independent.

### **Tortoise**

The tortoise is the third member of the Chelonian family— along with turtles and terrapins. Chelonians are also reptiles, which means they are cold-blooded and warm themselves by drawing heat from their environment. They have four legs and a shell that is joined down the sides. They also have strong, horny mouths, or beaks, and no teeth. There are about 40 types of tortoise. Most species of tortoise live on land, but some live in fresh water. They live in many different types of environments from deserts and semi-arid areas to lakes, lagoons and swamps and tropical forests. Tortoises are also kept as pets in many countries.

#### **Features**

- ❖ In the wild, most tortoises browse for food— moving around a large area, eating small amounts of food as they go. Some tortoises are herbivores, and eat only plants. Others are omnivores, meaning they will eat anything available including plants, fruit, live prey and carrion.
- ❖ Tortoises need calcium to build their bones in the same way that humans do. Those that live in warmer climates bask in the sun. The rays produce vitamins in the tortoise's body, which work with the plants they eat to produce calcium. Colder climate tortoises get less sunshine, so they eat more protein and foods that contain calcium.
- ❖ Tortoises are also kept as pets in many countries. In Australia the Macquarie, Murray River short-neck and Common long-neck are popular.
- ❖ Tortoise legs are short and stumpy, and their feet have claws for digging and moving around on the ground. Sea turtles

have longer legs with flippers, and fresh water turtles or terrapins have claws and webbed toes, for digging and swimming.

### **Lion-Tailed Macaque**

Of the world's 21 macaque species, lion-tailed macaques are among the rarest. They are the only macaque species currently listed as endangered on the World Conservation Union's (IUCN's) Red List of Threatened Animals. Lion-tailed macaques are unique to India. In the early 1970s, they still ranged through the southern third of the country. Today, they only live in mountain forests scattered across three Indian states: Karnataka, Kerala, and Tamil Nadu. These monkeys are found only in India in the Western Ghats Mountains. They live in evergreen and semi-evergreen rainforests and monsoon forests. They typically are associated with broadleaf trees, and can be found at elevations as great as 1,500 m.

#### **Features**

- ❖ **Size and appearance:** Lion-tailed macaques are 40 to 61 cm in length, with the tail adding an additional 24 to 38 cm. Males typically weigh between 5 and 10 kg, but the smaller females weigh only 3 to 6 kg.
- ❖ The body is covered with black fur. The tail is long, thin, and naked, with a tuft of black puffy hair at the tip. Both males and females have a grayish lion-like mane of fur that surrounds the face. The face itself is bare and black.
- ❖ **Cheek Pouches:** Lion-tailed macaques have cheek pouches that open beside the lower teeth and extend down the side of the neck. Their cheek pouches enable them to quickly gather large amounts of food in times of danger.
- ❖ **Care of young ones:** Females nurse and care for their young for extended periods while the young learn and grow. When offspring reach adolescence, females generally stay in the social group of their birth, but males leave, and live in nomadic

all-male groups until they are able to defend a harem of their own. Males may establish a new family group or steal one from an old or injured male of another group

- ❖ **Life span:** It has a maximum lifespan of 38 years in captivity, although it is more typical for them to reach about 30 years of age. In the wild, the expected maximum lifespan is about 20 years.
- ❖ **Social Life:** Lion-tailed macaques mostly live on trees. They travel in a family group consisting of 10 to 20 members, but there can be as many as 34 members. Some groups may have as many as 3 adult males, but there is usually only one dominant male.
- ❖ **Diet:** Lion-tailed macaques are omnivorous but their diet consists mainly of fruit. They also eat a wide variety of vegetation such as leaves, stems, flowers, buds, and fungi. They occasionally eat meat from insects, lizards, tree frogs, and small mammals. These macaques obtain some of their water by licking dew from leaves. The Zoo's lion-tailed macaques eat a variety of fruits and vegetables, monkey chow, and, once a week, meat or hard-boiled egg. In addition, keepers occasionally scatter "forage foods"—food pellets, peanuts, mealworms, or crickets—that the monkeys seek, find, and eat.
- ❖ **Predators and Threats:** Lion-tailed macaques prefer to forage quickly for fear of predators. It is likely that these animals fall prey to snakes, raptors, and larger carnivores. *Macaca silenus* is hunted for its skin and meat. Over the years, many of this species were captured for the pet trade, zoos, medical research, and use in traditional Chinese medicine. The macaques declined as human settlement advanced. Teak, coffee, and tea plantations as well as dams and roads destroyed many forests. At the same time, they are widely hunted for their meat and fur.

## White Tiger

There are only a small quantity of white tigers in existence and present numbers are around 500. White Tiger is also known as White Bengal Tiger. Its natural habitat includes tropical forests, mangrove swamps and moist jungles that generally support dense vegetation and have a good source of fresh water. They are found in Bengal, Bihar, and Assam in India, Nepal, Bhutan and Bangladesh, and although populations are severely declining, they remain the most numerous Tiger species in the world.

This animal has become rare but can still be found in a handful of zoos and animal sanctuaries around the world. However, the fact is that there are no White Tigers known to be found outside of captivity.

### Features

White Tiger is considered to be the second largest species of Tiger in the world after the Siberian Tiger.

- ❖ It can weigh up to 300kg with length of the white tiger measuring around 1.4 – 2.8 meters (41/2 – 9 feet), with the tail measuring 3 – 4 feet (90 – 120 cm).
- ❖ It has black or dark brown stripes that run vertically along its body. They have blue eyes rather than the green or yellow coloured eyes of normal Bengal Tigers.
- ❖ They do the majority of their hunting at night as this also helps them to hunt more successfully. Despite their size and weight Tigers are incredibly quick and agile at running and they are also very capable swimmers.
- ❖ White Tigers have incredible hearing and sight which, along with their stealth, helps them when hunting in the jungle in the dark.
- ❖ They are solitary animals. Bengal tigers lead a solitary way of life. White tigers occasionally travel in groups of 3 or 4. The group usually consists of mother with sub-adult children. Each Tiger occupies a large

territory that is marked by urine and claw marks on trees, and can be up to 75 square miles in size. Both males and females mark territories. However, the male's territory is several times as large as the female's.

- ❖ **Food Habits:** White Tiger is a carnivorous animal meaning that it only hunts and eats other animals. Its main preys are large, herbivorous animals including deer, wild boar, cattle, goats, chital, nilgai, buffalo, gaur, sambar, barasingha and wild pig that feed both in the jungle and on its outskirts. These animals are also found to prey on pythons, sloth bears, crocodiles, sika deer, Manchurian wapiti, Malayan tapir, moose, roe deer, musk deer, saiga antelope, Caucasian wisent, yak, muntjac, camels, horses and other leopards. They also like to eat smaller animals like hares, rabbits, peafowls, fish, and monkeys. Conflicts often arise between tigers and elephants even though elephants do not serve as a gentle prey for white tigers. Typically, wild tigers gorge themselves on fresh kills, and can eat as much as 40 pounds (18 kg) of meat at one time. The tiger will not eat again for several days. White tigers move towards domestic livestock when the prey is not abundant. These domestic animals include cows, donkeys, cows and dogs.
- ❖ These tigers tend to hunt at night and spend the whole day in their den while sleeping.
- ❖ The average lifespan is 10 years in the wild.
- ❖ Females litter 2 – 3 cubs. The newly-born cubs weigh around 1 kg (2 – 3 pounds). These juveniles begin to hunt after 18 months or so. They become fully mature after 3 – 4 years.

**Causes of decline in numbers:** The White Tiger has no predators due to the fact that it is such a big and powerful animal itself.

The main threat comes from man as they were often captured by the rich, who kept them as an incredibly exotic pet. They have been both

captured and hunted for their beauty. Their numbers have declined because of deforestation due to growing human settlements and agriculture. With the loss in forest, there is also a decline in the White Tiger's prey so populations are becoming increasingly harder to sustain.

## Emu

Emus are large birds. This bird is native to Australia. It is the second-largest extant bird in the world by height after Ostrich. There are three subspecies of emus in Australia.

### Features

- ❖ This soft-feathered, brown, flightless bird reach up to 1.9 metres (6.2 ft) in height. Emus weigh between 18 and 60 kg (40 and 132 lb), with an average of 31.5 and 36.9 kg (69 and 81 lb) in males and females, respectively. Females are usually larger than males by a small amount.
- ❖ They have long thin necks and legs. Emus can travel great distances at a fast, economical trot and, if necessary, can sprint at 50 km/h (31 mph). Their long legs allow them to take strides of up to 9 feet. Their feet are long, with three toes. One toe on each foot has a long talon, for fighting.
- ❖ They have two sets of eyelids, one for blinking and one to keep out the dust.
- ❖ The emu has good eyesight and hearing, which allows it to detect nearby threats.
- ❖ Emus use their strongly clawed feet as a defence mechanism. Their legs are among the strongest of any animal, allowing them to rip metal wire fences.
- ❖ The feather structure prevents heat from flowing into the skin, permitting emus to be active during the midday heat. They can tolerate a wide range of temperatures.
- ❖ Male does most of the incubation and the young are nurtured by their fathers.
- ❖ They reach full size after around six months, but can remain with their family until the next breeding season half a year

later.

- ❖ Emus can live between 10 and 20 years in the wild.
- ❖ Predators: They are preyed by dingos, eagles and hawks. They can jump and kick to avoid dingos, but against eagles and hawks they can only run and swerve.
- ❖ Emus are farmed for their meat, oil and leather.
- ❖ They are also known to be inquisitive animals, and are known to approach humans if they see movement of a limb or a piece of clothing. They may follow and observe humans in the wild.
- ❖ It does not sleep continuously throughout the night. It can awake and arise up to eight times per night in order to feed or defecate.
- ❖ Emus are also able to swim when necessary, although they rarely do so unless the area is flooded or they need to cross a river.

**Food** — They may travel long distances to find food; they feed on a variety of plants and insects, but have been known to go for weeks without food. Emus feed on grains, flowers, berries, soft shoots, insects, grubs and whatever else they can find. They also eat insects, including

grasshoppers, crickets, lady birds, soldier and saltbush caterpillars, Bogong and cotton-boll moth larvae and ants. They are also known to eat wheat crops. Emus ingest stones, glass shards and bits of metal to grind food in the digestive system.

They also eat charcoal. Captive emus are also known to eat shards of glass, marbles, car keys, jewellery and nuts and bolts. Emus drink at infrequent intervals, but ingest large amounts when they do so. They typically inspect the water body in groups for a period before kneeling down at the edge of the water and drinking. They often drink continuously for 10 minutes, unless disturbed by danger, in which case they interrupt themselves to deal with the threat before resuming. Due to the arid environment, they often go one or two days without finding a source of water and drinking. They typically drink once per day or night, but can do so several times daily if supply is abundant. In the wild, they often share water sources with kangaroos, other birds and wild camels and donkeys.

When food is plentiful, emus store large amounts of fat in their bodies. They use these fat stores to survive while looking for more food.

### 3. Table

Name	Wildlife Sanctuary or National Park	Place where situated	Name two animals that are found
Mudumalai	Mudumalai Wildlife Sanctuary	Tamil Nadu	Indian elephant, Bengal Tiger, Gaur, Indian Leopard
Corbett	Jim Corbett National Park	Nainital district of Uttarakhand	Tiger, green bee-eaters, sambhar deer
Dachigam	Dachigam National Park	Srinagar, Jammu and Kashmir	Musk deer, leopard, Hill fox
Dudhwa	Dudhwa National Park	Terai, Uttar Pradesh	Tiger, Swamp Deer, Indian narrow headed softshell turtle
Simlipal	Simlipal National Park	Mayurbhanj district, Odhisa	Tiger, Elephant
Periyar	Periyar National Park	Kerala	Tiger, Elephant, Gaur, Barking Gaur
Kaziranga	Kaziranga National Park	Golaghat and Nagaon district of Assam	Indian Rhinoceros, Indian roller, wild Boar, wild water buffalo

Ghana	Keoladeo Ghana National Park, formerly known as Bharatpur Bird Sanctuary	Bharatpur in Rajasthan	Great Egret, Eurasian Spoonbill, painted Storks, Sambar, Neel gai, Indian Saras
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#### 4. Do it yourself

### Chapter 13.

#### Warm Up Activity

Lion – den, Birds – nest, hen – coop, rabbit – burrow.

#### Friendly Activity

Birds	Kinds of Nest	Characteristics of the nest
Pigeon	Deep cup-shaped nest	Prevent the young ones from falling.
Kingfisher	Nest in the tree trunk	Drills into the tree trunk till it reaches the hollow space in tree, the nest is lined with fine chips of wood.
Tailor Bird	Leafy nest	Two or three broad leaves are stitched together with thread and straw.
Partridge	Shallow nest on the ground	Nest is lined with tree leaves and dry grass.
Weaver Bird	Cradle like nest	Looks like a hanging basket. It hangs from the tree. It is made by weaving, knitting and twining grasses. Nest is strong and long lasting. There is a false entrance to fool predators.
Wood pecker	Nest in a hole in the tree trunk	A hole is dug into the tree trunk deeper till it reaches a hollow space in the tree. It makes its nest there. The nest is lined with fine chips of wood.

#### Summative Assessment

- A. 1. (a), 2. (b), 3. (c), 4. (c), 5. (a)
- B. Owl— grass and feathers, Tailor bird— fish bones, Wood pecker— fine chips of wood, Partridge— tree leaves and dry grass, Kingfisher— cotton, wool, hair
- C. 1. Animals need shelter to protect them from heat, cold, rain and enemies.  
 2. Birds build nests to lay eggs and keep their young ones warm and safe in them.  
 3. Weaver bird makes a cradle like nest because it is deep and it keeps the young ones from falling.  
 4. A spider's web is used by tribals to make fishing nets and baits. They are also used to bake bandage to stop blood flow and to make bird snares.
- D. Animals that we see in our neighbourhood are cow, horse, donkey, mule, buffalo, cat, dog, squirrel, lizard, rat and monkey.

- E. Animals that live only in water are fish, jelly fish, sea turtle, water rattle, whale and dolphins.
- F. Birds build their nests with dry grass, leaves, straw, threads, fish bones, grass, feathers, fine chips of wood, cotton, wool and hair.

#### Formative Assessment

1. Nuts and grams should be fed to pigeons, peacocks, monkeys, chimpanzees and parrots as these animals eat grains and nuts. Grass should be fed to giraffes, zebras, goats and deer as they are grass-eating animals. Bananas can be fed to monkeys, chimpanzees and elephants because they are fond of it. Chillies should be fed to parrots as they love chillies.
2. We should not tease birds and animals because they get disturbed and upset. Some of them get angry and irritated by teasing. Some animals or birds may also attack us or hurt us if they get irritated.
3. Do it yourself

## Chapter 14. Animal Groups

### Warm Up Activity

1. Horse move together in a group called troop.
2. Fish swim in a group called shoal.
3. Ants live in a group called colony.
4. Lions walk in a group called pride.
5. Sheep walk in a group called flock.

### Friendly Activity

Animals who like to live alone— Tiger, Rhinoceros, zebra, bear, horse.

### Summative Assessment

- A. 1. (b), 2. (b), 3. (c).
- B. Flock of birds, colony of insects, herd of buffaloes, swarm of bees, pod of fish, troop of monkeys.
- C. 1. Some animals live in groups to protect each other from danger, raise their babies, get warmth from each other's bodies and search for food and water easily.
2. Herds of elephants constitutes of adult related females, their off-springs and calves below 12 to 14 years of age. Adult male elephants are not a part of the herd and do not stay with them. The oldest female elephant is the leader of the group. Method of communication in the herd is through touch, visual cues and audible sounds. The sounds cannot be heard by human ear. The young calves are very affectionate and playful. The adult cows take care that the offsprings do not stray away from the herd. Elephant cows are highly protective of their young ones. While travelling in search of food, the herd is led by eldest elephant cow and others follow in a single file. The calves hold on to the tails of their mothers with their trunks. Other adult females surround the calves to protect them from outside dangers.
3. Some animals are seen to help each other. Crocodile does not eat the bird called Egyptian Plover as it sits in its mouth and cleans its teeth. Birds called egrets sit on

the backs of cattle, deer and elephants and eat the insects found on the body of these animals and in this way clean their coat.

4. Pollination is a process in which pollen grains from one flower reach another and help the plant to create new seeds that grow into plants.
5. Some animals are shy by nature. They run away or withdraw when someone approaches them For example, squirrels run away when someone goes near them and a tortoise draws its head into its hard shell. Friendly animals are those that play with us and are not scared like dogs, cats, goats. Aggressive animals can attack when someone approaches them. They avoid contacts with humans. Most wild beasts are aggressive by nature.

### Formative Assessment

1. Animals in the neighbourhood are mostly not scared of human beings. If you pass near them without disturbing them, they do not get irritated and do not attack people. They may only attack when provoked or get scared and run away. However animals in the zoo are either shy or aggressive. Mostly they avoid human interaction.
2. Do it yourself

## Chapter 15. Animal Hairs, Ears & Teeth

### Warm Up Activity

Dog, Lion, Rabbit, fish

### Friendly Activity

Elephant, Zebra, Lion, Bear

### Summative Assessment

- A. 1. (a), 2. (b), 3. (b), 4. (b)
- B. 1. True, 2. True, 3. True, 4. False, 5. true.
- C. 1. fish, crocodile, 2. whale, dolphin, 3. rat, buffalo
- D. 1. All animals that give birth to young ones have hair on their bodies. These hair may be of different kinds like fur, whiskers or

spines. Hair give protection to the skin. Hair in the form of fur keeps the body warm. Spines give protection and whiskers help the animal to sense the surroundings.

2. Elephants have huge triangular ears. They flap both the ears together to keep their body cool.
  3. Birds do not have outer ears as these could slow them down in their flight. Instead they have two holes in their heads. Their tiny internal ears are very sensitive as they can hear sounds that even we can't hear. For example, an owl's ears are located on the sides of its head behind its eyes. The ears are covered with feathers. One ear is placed higher than the other which helps it pick up sounds more accurately.
  4. Fish do not have any ears that can hear. They hear through ridges on their body.
  5. Animals that chew their food are cow, zebra and goat.
  6. Animals that eat grass are horse, goat and cow. These animals have strong grinding teeth that are flat and sharp.
  7. Most wild animals are carnivores— or meat eaters with sharp curved teeth. These teeth help wild animals to tear the flesh of their prey.
  8. Sharp teeth of rodents— Animals like mongoose, rats and squirrels are rodents. They eat grain, nuts and even hard fruits. They have a pair of very sharp front teeth in each jaw for cutting and biting food.
- Teeth of flesh eating animals— Carnivores are flesh eating animals like lion, tiger, jackal etc. These animals have very sharp curved teeth that can tear the flesh of their prey. Their grinding teeth are also sharp and strong for chewing and breaking the bones and flesh of the prey.
9. Whiskers are long thin hair near the mouth of an animal or insect which help them to sense their surroundings like whiskers in a cat. Fur is a thick coat of closely placed

hair on the skin of an animal. These keep the animal warm and protected like fur of a bear.

10. Snakes do not have any ears. Instead their tongue is sensitive to sound vibrations.

### Formative Assessment

1. Do it yourself
2. Yes, I have a pet dog. My dog's name is Tanya. Her skin covered with is pure white soft fur coat. Her fur is thick. It has medium sized ears which stand erect on its head. It has sharp teeth for eating meats. Its grinding teeth are also sharp and strong as she is a carnivore. Her teeth are meant for cutting and tearing flesh.
3. Do it yourself

## Chapter 16. Money Matters

### Warm Up Activity

The bus conductor sells the tickets in the bus.  
The TC checks the tickets in a train.

### Friendly Activity

USA— American Dollar, England— Pound, China— Renminbi, Japan— Japanese Yen, Germany— Euro.

### Summative Assessment

1. (c), 2. (a), 3. (c)
1. False, 2. True, 3. True, 4. True
- Do it yourself
1. We pay with currency notes, coins and metro-rail card when we travel by metro trains.
2. We pay with currency notes, coins and bus pass when we travel by bus. When we travel by taxi we pay with currency notes and coins.
3. Coin is made of metal and is of a lower denomination like rupee 1, 2, 5 and 10 while currency notes are made of paper and can be of denomination Rs. 1, 2, 5, 10, 50, 100, 500 and 1000.
4. The currency of India is rupee. Coins are

made of metal and currency notes are made of paper.

5. All countries do not have the same currency.

### Formative Assessment

1. It is important to buy tickets when we use public transport for travelling because the money we pay is used to cover the cost of running public transport. This means that all the money collected from sale of tickets is collected by the department running the public transport. This money is used to pay the salaries of drivers, conductors and fuel cost along with maintenance of vehicles and cost of new vehicles introduced in the transport system.
2. The vehicles that we come under the category of public transport are buses, trains, aeroplanes, rickshaws, auto-rickshaws and metro trains.
3. & 4. Do it yourself

## Chapter 17. Animals for Travelling

### Warm Up Activity

Rath. Colour it yourself.

### Friendly Activity

This is a horse shoe. It is a man-made product made mostly of metal but sometimes of modern synthetic materials designed to protect a horse's hoof from wear. Shoes are attached on the surface of the hooves by nailing. The main purpose of nailing horse shoe on the animal's hoofs is to protect them from injury and splitting. The stresses that these animals are subjected to are the additional weight of the rider, pack load, cart or wagon.

It is also considered to bring good luck when kept as a talisman.

### Summative Assessment

1. (c), 2. (a), 3. (b)
1. True, 2. True, 3. False, 4. False, 5. False.
- Animals that are used for travelling— Horse, Cow, Elephant, Camel, Donkey, Ox, Buffalo.
1. After the wheel was invented, people could drag their loads easily.  
2. Mules can carry heavy loads.

3. Horse can run fast.
  4. Kings rode on elephants with pride in wars.
  5. Mules carry loads in hilly areas.
- E.
1. Early man travelled from one place to another on foot, on horses, donkey, elephant, camel and buffalo.
  2. Buggy is a four wheeled luxury coach pulled by one or more horses.
  3. Some domestic animals are buffalo, cow, donkey, mule, horse and camel.
  4. Elephants are the largest living land animals. They are strong and capable of carrying heavy loads so they can be used as a mode of transport. They can easily travel through forests and transport heavy logs. In olden days kings and rich people used to take pride in travelling on elephants.
  5. Horses were used by man for travelling from one place to another. They were also used in battles. Now horses are used in carts and carriages and in sports in horse polo and horse racing.
  6. We use donkeys and mules for carrying loads particularly in hilly regions where other there are no proper roads.
  7. We should be kind towards animals because they help us in many ways. They are also our friends.
  8. Ox, horse, camel and buffaloes normally pull a cart.
  9. Invention of wheel brought a major change in transport because it led to invention of means of transport as most of the vehicles move on wheels. For example, carts and then all modes of transport like car, scooter, rickshaw, bus, train etc.
  10. We should take care of our domestic and pet animals and always be kind to them. We can take of them by giving them food and clean drinking water, clean and proper shelter, bathing them regularly, not forcing them to work beyond their capacity or when they refuse to work. We should provide

them with medical care when needed.

### Formative Assessment

1. Do it yourself
2. My elephant ride— I took my first elephant ride in the zoo. A mahaut was sitting on the neck of the elephant behind his ears. He patted the animal and on his instructions the huge animal sat down on the ground. I stood with my father near the animal. For a minute I was scared just looking at the massive size of the elephant. A wooden saddle called Howdah was tied on the elephant's back to carry passengers on the elephant for a ride. Even after sitting the elephant was so huge that we could not climb up. The care taker or Mahaut put a ladder against the saddle and we climbed up inside. I was scared when the howdah moved while the elephant stood up but was soothed by my father. Then I enjoyed the swaying movement as we took two rounds and then climbed down. Now I was not scared as the mahaut had told us how gentle the animal was. I patted the elephant and moved away.
3. The snake does not like to live in the basket of a snake charmer because he is not free and has to live according to the snake charmer's wishes.

## Chapter 18. Individual and Team Games

### Warm Up Activity

Watching television, picnic, playing Ludo.

### Friendly Activity

Games that are played as a team— Polo, Cricket, Basketball, Kabaddi, Hockey, Football.

### Friendly Activity

Girls are playing stappoo. Boys are playing football. Boys are playing volleyball. Girls are playing kho-kho.

### Summative Assessment

- A. 1. Activities that give us pleasure are sitting and gossiping, watching television, reading story books, going shopping, playing games with our friends, talking to each other on phone and internet, messaging,

sending and reading jokes and going for a walk etc.

2. Games that are played inside the room are called indoor games like chess, ludo and carom while outdoor games are played outside the rooms in parks, stadiums, lawns or courts like cricket, volleyball, hockey, basketball etc.
  3. Team spirit is a feeling of oneness with the team, giving more importance to the team and keeping team-interest above self-interest.
  4. A captain's role is important because the captain takes decisions on strategy of the game, order of players, placement of players and how the opposite team is to be handled. These are important decisions which may lead a team to victory or defeat. A captain role is also important as captain is the role model as well as motivating factor for the team.
  5. A team needs team spirit to play a game properly. They should also have faith in their captain and trust each other. To play the game properly a team also needs skill and good training.
- B. 1. While playing a game, play as a player , and never think that you are a boy or girl.
2. People have accepted that girls can play different games.
  3. Cooperation among the members is the strength of a team.
  4. Games played in a stadium are called outdoor games.
  5. A good captain instills team spirit among the team members.
- C. 1., 2. & 3. Do it yourself
4. The main difference between playing for the team and playing for yourself is that when you play for yourself, you just concentrate on your own performance and thinking how to win over others but when you play for a team, you have to give more

importance to your team than yourself. The aim is to make the team win even if you do not get a chance to prove your personal skills.

### Formative Assessment

1. Cricket, Hockey, Basketball, wrestling, carom, swimming
2. Some people still think that boys are better at sports because boys are physically stronger and have more stamina than girls. Boys also get more opportunities to practice the game, they can practice at any time while girls have restrictions of timings and they can't travel freely like boys. Girls also have duties to perform at home.
3. National level player for cricket— Mohinder Singh Dhoni, hockey— Dhanraj Pillay, Tennis— Sania Mirza.

## Chapter 19. Environmental Sanitation

### Warm Up Activity

Do it yourself

### Friendly Activity

Instructions that help in keeping the environment clean –

We must clean the spider-webs off our ceilings regularly.

We must throw food particles in dustbins.

We should collect all the garbage from our house and throw it in the dustbins.

Food should be kept covered.

### Summative Assessment

1. (b), 2. (a), 3. (c), 4. (b), 5. (c)
1. (c), 2. (e), 3. (d), 4. (b), 5. (a)
- (a) Solid waste is waste material that is solid by nature like paper, vegetable peels and garbage while liquid waste in waste material that can flow through pipelines. Main liquid waste is sewage.  
(b) Reduce means lessening the amount of waste generated like not throwing away half used paper. Reuse means using the things again like glass and plastic bottles and jars

can be used again to refill something else.

1. Environment means our surroundings that include the area we live in, plants that grow around us and animals that live in our surrounding. Environmental sanitation means keeping our surroundings clean.
2. Biodegradable waste is waste material that can be disposed off easily and mix with soil after decomposing.
3. Non-biodegradable waste is waste material that does not mix with soil and reduce the fertility of soil or harm it.
4. Some biodegradable wastes are paper, leaves, leftover food, vegetable peels, peels of fruit, excreta, clothes and wood. Some non-biodegradable wastes are polythene, metals, glass and plastic.
5. We should have covered dustbins so the insects and flies do not sit on the garbage. If flies and insects sit on the garbage, the germs stick to their body and when they sit on our food or things we use these germs are disposed off on these items and cause infections and diseases.
6. In big cities waste water disposed off by a drainage system. The liquid waste which is mainly sewage is carried to the main drain pipe of the area and then the sewage is carried to the sewage treatment plant. All the harmful substances are removed from the liquid waste and it is disposed off in rivers.
7. Jaundice, Cholera, malaria and plague are some of the diseases caused due to dirty surroundings

### Formative Assessment

1. We can reduce wastage in our school and home by remembering the three Rs— reduce, recycle and reuse. Reduce means using the item completely before discarding like using both sides of the paper before discarding it. We can reuse the jars, bottles and containers of pickles, jams and many other products for storing other things. For making paper machie we can

use old newspapers or other waste paper. We can reuse gift-wrapping papers that we get on birthday gifts for decorations. We can sell our broken plastic and metal toys and other items to the kabadiwala so that these materials can be recycled.

2. & 3. Do it yourself

## Chapter 20. Bridges and Buildings

### **Warm Up Activity**

**Rashtrapati Bhawan**— This building is made of materials like bricks, stone, marble, cement, steel, iron, wood and glass.

**Bridge on River Yamuna in Delhi**— This is made of iron, steel, cement, mortar and thick wires.

### **Friendly Activity**

**Jadukata Bridge in Meghalaya** is the longest cantilever bridge in India.

**Howrah Bridge in West Bengal**, is the largest cantilever bridge in Asia.

### **Summative Assessment**

A. **Mason**— Lays the bricks

**Architect**— makes the plans of buildings and bridges

**Electrician**— does electrical fittings like laying wires, fixing plugs, switches and electrical appliances.

**Contractor**— looks after all construction activities and directs his men to do different jobs related to construction of the building.

**Carpenter**— does woodwork. Makes doors, windows, almirahs and cabinets

**Welder**— joins pieces of steel and iron to make grills and frames of doors and windows

B. 1. Flyovers— (d) beam Bridge, 2. Howrah Bridge— (a) cantilever Bridge, 3. Bamboo Bridge— (b) tree logs and ropes, 4. Lakshman Jhoola— (c) Suspension Bridge

C. 1. People who help in the construction of a building are engineer, architect, contractor, mason, carpenter, electrician, plumber, welder and painter.

2. Materials required in construction process are bricks, cement, stones, marble, iron, steel, wood, glass, pipes, sanitary-ware and many types of equipment and tools.
3. Some materials used in building of modern bridges are cement, reinforced concrete, iron and modern machines.
4. We need bridges to cross lakes, rivers, railway tracks and busy roads.
5. To make bricks first the clay is dug out of river beds. It is then crushed to fine particles. Water is added and mixed with it to make it soft. This mixture is put in moulds and shaped into bricks. These are first dried in sun and then baked in kilns. Now the strong bricks are ready.

### **Formative Assessment**

1. Different Types of bridges in the world—
  - ❖ **Arch Bridge**— Chaotianmen Bridge over Yangtze River in China, and The Hell Gate Bridge in New York, Godavari Bridge in India
  - ❖ **Beam Bridge**— Lake Pontchartrain Causeway in Southern Louisiana
  - ❖ **Cantilever Bridge**— Quebec Bridge in Quebec, Canada, Queensboro Bridge in New York City, Howrah Bridge in West Bengal
  - ❖ **Tied Arch Bridges** (Bow-stringed Bridge)— Yumemai Bridge of Japan, Sydney Harbor Bridge in Australia
  - ❖ **Truss Bridges**— Forth Rail Bridge in Scotland
  - ❖ **Suspension Bridge**— Akashi Kaikyo Bridge of Japan, Golden Gate Bridge in San Francisco, Lakshman Jhoola in India
  - ❖ **Cable-Stayed Bridge**— Russky Bridge in Russia, Tatara bridge in Japan, Sundial Bridge in Spain
  - ❖ **Box-Girder Bridge**— River Kosi Bridge in Bihar, India
  - ❖ **Double-decked Bridge**— George

Washington Bridge, USA; Prince Edward Viaduct, Toronto, Canada

- ❖ **Bascule bridge**– Tower Bridge of London
- ❖ **Three-way Bridge**– The Tridge, Zanesville Y-Bridge

2. Tools of a carpenter, Tools of an electrician, Tools of a painter, Tools of a plumber.

## **Chapter 21. People at Work**

### **Warm Up Activity**

Do it yourself

### **Friendly Activity**

Kalpana Chawla, Santosh Yadav, Sania Mirza

### **Summative Assessment**

- A. 1. (a), 2. (c), 3. (b), 4. (d)
- B. 1. The work done by people to earn money is called an occupation.
2. Human beings are engaged in activities in which they can earn money and those in which work is done but money is not earned. This type of work may be done for recreation or satisfaction. The first type of work is called occupation. For example, engineering and architecture are occupations while cooking for family and watching television is done for satisfaction and recreation.
3. The job that needs specific training in some institutes is a skilled job. For example, you need to study medicine in a medical college

before start working as a doctor. Semi-skilled job involves learning some skills but this training can be given in polytechnics or other institutes. For example, a beautician, driver and a tailor may learn their skill from private institutes or polytechnics. Some jobs that do not require any formal training but can be learnt from family members, relatives, friends or by self-practice are called unskilled jobs. For example, the job of washer-man/woman, house maid, weaver and potter can be easily learnt at home from family and self observation.

4. A doctor treats the patient, gives medicines, injections or even operates on the patient according to the condition and requirement of the patient.
5. We get our motor repaired by a mechanic in the workshop.
6. Yes, I do some household work. I clean the cupboards, clean the refrigerator from time to time, bring milk from the market and help my mother lay and clear the table
7. Do it yourself.
8. Women are so successful in different occupations because they are equally intelligent and hard working as men. They do their work with dedication and strong will.

### **Formative Assessment**

1. & 2. Do it yourself