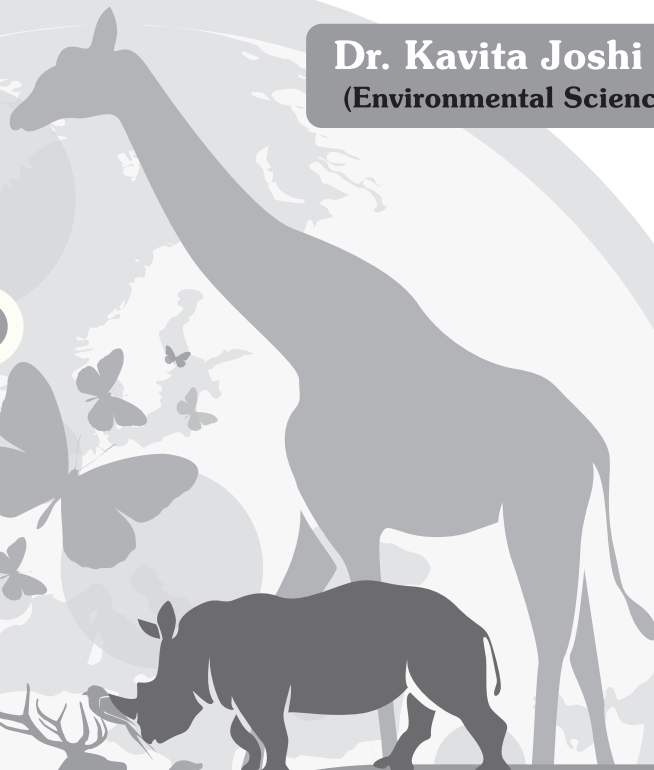
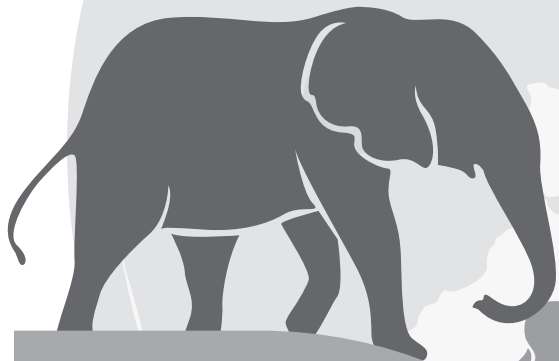
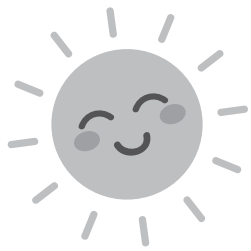


MASTERMIND

Environmental Studies



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(Environmental Science), Ph.D.**

Based on NCERT 2025

Key Features

- Key Points to Remember
- Key Words for Better Understanding
- NCERT Questions, Activities and Projects
- Exam Oriented Additional Questions with Answers
- AI Integrated
- NCF Compliant
- Competency Based Questions

5

Answer Key : Class-5 EVS

Chapter 1: Super Sense

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(ii) they have sharper senses	Animals react faster than humans mainly because their senses are much sharper than ours.
2	(iii) the smell is different	Ants recognise their own group members by smell; a different smell shows the ant belongs to another group.
3	(iii) Dolphin – Sound communication	Dolphins use clicking and whistling sounds to communicate with their group.
4	(ii) They need to search for food for a longer time	Plant-eating animals sleep less because they must spend more time finding food.
5	(iii) A dog tracking a missing person	This directly shows an animal using its super sense of smell to help in survival/rescue work.

B–E. Short Answer Questions

B. Why can animals not depend on tools like human beings?

Answer: Unlike human beings, animals cannot make or use tools and machines. They must rely completely on their natural abilities and sharp senses to find food, sense danger and survive in their environment.

C. How does smell help animals avoid fights?

Answer: Animals use smell to mark their own territory or area. When other animals smell these marks, they recognise that the area already belongs to another animal and stay away, which helps avoid fights and keeps balance in nature.

D. Why are warning sounds important for animals living in groups?

Answer: Warning sounds alert the entire group about danger, such as the presence of a predator. On hearing these sounds, other members become alert and move to a safe place, helping the whole group survive.

E. Give one example to show how super senses help maintain balance in nature.

Answer: Dogs use their strong sense of smell to help humans in police and rescue work, such as tracking criminals, finding missing people and detecting explosives. This shows how an animal's super sense benefits both the animal and the wider environment.

Additional Questions

A. Match the situation with the correct sense. (1. Hearing warning calls, 2. Recognising friends, 3. Seeing prey from height)

Answer: 1 – (b) Hearing, 2 – (c) Smell, 3 – (a) Sight

B. How does the placement of eyes help animals survive in nature?

Answer: Animals that hunt have eyes in front to judge distance accurately, while animals that are hunted have eyes on the sides to watch for danger from many directions.

C. Fill in the table using the information from the chapter.

Animal	Strong Sense	How It Helps
1. Dog	Smell	Finds missing people
2. Ant	Smell	Recognises friends
3. Owl	Sight	Hunts at night

Animal	Strong Sense	How It Helps
4. Elephant	Hearing	Communicates over long distances
5. Sloth	Sleep habit	Saves energy

D. Explain how dogs help human beings using their sense of smell.

Answer: Dogs have a very strong sense of smell and can detect even very faint smells. Because of this, dogs help the police track criminals, find missing people and detect explosives. They are also used in rescue operations during disasters, which makes their strong sense of smell very useful to human beings.

E. Why do animals that hunt usually have eyes in front, while animals that are hunted have eyes on the sides?

Answer: Animals that hunt need to judge distance accurately, so their eyes are in front. Animals that are hunted need to watch for danger from many directions, so their eyes are on the sides. This arrangement helps both types of animals survive.

F. Why are animals like owls more active at night?

Answer: Owls have eyes that are adapted to low light, which helps them see clearly at night. Being active at night helps them hunt food easily and avoid competition from other animals.

G. If ants could not recognise smell, what problems would they face?

Answer: Ants would not be able to recognise their group members. They would have difficulty finding food and protecting their colony from strangers, as smell is very important for their survival.

H. Why are super senses sometimes not enough to protect animals today?

Answer: Human activities like deforestation, hunting and noise pollution destroy animal habitats. Because of this, even animals with super senses find it difficult to survive.

I. Why do animals need super senses more than human beings?

Answer: Animals cannot use tools or machines. They depend completely on their senses to find food and escape danger, so they need super senses more than human beings do.

J. Case Study — Riya and the kite

1. Which sense helped the kite find the food?

Answer: The sense of sight helped the kite find the food.

2. Why is this sense stronger in birds than in humans?

Answer: Birds have very sharp eyesight that allows them to see objects clearly from great heights.

3. How does this sense help birds survive in nature?

Answer: Sharp eyesight helps birds find food easily and stay alert to danger.

Chapter 2: A Snake Charmer's Story

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(iii) follow the movement of the been	Snakes cannot hear the sound of the been; they respond only to its movement.
2	(iii) They helped treat snake bites and spread awareness	In earlier times, snake-charmers identified snakes and gave treatment when doctors were not easily available.
3	(iii) They help control rats	Snakes eat rats that damage crops, so they help farmers protect their harvest.

B–C. Short Answer Questions

B. Why did people trust snake-charmers in earlier times?

Answer: People trusted snake-charmers because doctors and hospitals were not easily available in villages. Snake-charmers could identify snakes from the marks of a bite and treat snake bites using medicines prepared from forest plants, so people relied on their knowledge and experience.

C. Why is it wrong to use animals for entertainment?

Answer: Using animals for entertainment is wrong because animals are kept in cages, forced to perform tricks against their will, and are sometimes hurt or frightened by people. This causes them pain and suffering and takes away their right to live freely.

Additional Questions

A. Match the following.

Column A	Column B
1. Been	(a) Poisonous teeth
2. Fangs	(b) Folk community
3. Kalbeliya	(c) Wind instrument
4. Snake	(d) Controls rats

Answer: 1 – (c), 2 – (a), 3 – (b), 4 – (d)

B. Name any two poisonous snakes found in India.

Answer: Cobra and Common Krait.

C. How did snake-charmers earn their livelihood earlier?

Answer: Snake-charmers earned their livelihood by travelling from village to village, performing snake shows, treating snake bites and receiving money or food grains from people in return.

D. Why are snakes not enemies of human beings?

Answer: Snakes help control the population of rats, which damage crops. In this way, they help farmers and maintain balance in nature.

E. List any three ways people can earn a living without harming animals.

Answer: Dairy farming, poultry farming and fishing are three ways people can earn a living without harming animals.

F. Why should traditional knowledge be used responsibly today?

Answer: Traditional knowledge should be used responsibly to protect animals and nature, and not to exploit or harm them.

G. Why did people in earlier times depend on snake-charmers, and how has the method of treating snake bites changed today?

Answer: Earlier, people depended on snake-charmers because hospitals and doctors were not easily available in villages, and snake-charmers identified snakes and gave treatment using medicines made from forest plants. Today, the correct method of treating a snake bite is to take the patient to a government hospital for proper medical treatment and anti-snake venom.

H. What value does this chapter teach us about animals?

Answer: The chapter teaches us kindness, respect for animals, and responsibility towards nature.

I. Case Study — Aryanath and Roshan Nathji

(a). Why did Roshan Nathji support animal protection laws?

Answer: He understood that animals should not be harmed and must be protected to preserve nature.

(b). How do snakes help farmers?

Answer: Snakes eat rats that destroy crops, which helps farmers protect their harvest.

Chapter 3: From Tasting to Digesting

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(ii) Tongue	Taste buds, which help us recognise flavours, are present on the tongue.
2	(iii) Sweet	The tip of the tongue is most sensitive to the sweet taste.

B–D. Short Answer Questions

B. Why is saliva important for digestion?

Answer: Saliva contains enzymes that begin breaking down food as soon as it enters the mouth. It also mixes with food to make it soft and easy to swallow, so chewing food well and mixing it with saliva makes digestion easier and prevents problems like indigestion and acidity.

C. Why did Jhumpa fail to recognise food when her nose was closed?

Answer: Our sense of smell helps us identify taste. When Jhumpa's nose was closed, she could not smell the food, so she found it difficult to recognise its taste correctly.

D. Why is glucose given to sick people?

Answer: Glucose is the simplest form of sugar and gives instant energy because it is quickly absorbed by the body. It is given to sick people, such as those who have lost water, sugar and salts due to vomiting or diarrhoea, to help them regain strength quickly.

Additional Questions

A. Explain how emotions affect digestion with reference to Martin's story.

Answer: Dr. Beaumont observed that when Martin was calm and happy, digestion was faster. When he was angry or worried, his digestion slowed down. This shows that emotions directly affect digestion and stomach activity.

B. Why are both under-eating and overeating harmful? Explain with examples of Rashmi and Kailash.

Answer: Rashmi became weak due to a lack of food and nutrients, while Kailash became unhealthy due to excess junk food and no exercise. Both conditions harmed their health, proving that balanced food is necessary.

C. Why should we eat different kinds of food instead of the same taste every day?

Answer: Different foods provide different nutrients. Eating the same taste or food daily may cause a deficiency of nutrients and affect health.

D. How does chewing food properly help our body?

Answer: Chewing mixes food with saliva, makes it soft and helps digestion begin in the mouth itself, which prevents stomach problems.

E. Why was Jhumpa unable to recognise taste when she closed her nose?

Answer: Smell supports taste. When the nose is closed, the sense of smell cannot help identify the taste properly.

F. Why should the government and people work together to reduce food wastage?

Answer: Reducing food wastage can help feed hungry people, save resources and ensure food security for all.

G. Case Study — Nitu's glucose drip

1. Why did Nitu become weak?

Answer: Nitu became weak due to loss of water, salts and sugar from her body caused by vomiting and loose motions.

2. Why was a glucose drip necessary?

Answer: The glucose drip provided instant energy and replaced the fluids Nitu had lost.

3. What would happen if such treatment were delayed?

Answer: A delay could lead to severe dehydration and serious health problems.

Chapter 4: Mangoes Round the Year

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(iii) microorganisms	Bacteria, fungi and moulds multiply on food and cause it to spoil.
2	(ii) Warm and moist place	Microorganisms grow fastest in warm, moist conditions.
3	(iii) ripe mangoes	Mamidi tandra is prepared using the pulp of fully ripe mangoes.

B–C. Short Answer Questions

B. Which two microorganisms spoil food?

Answer: Bacteria and fungi (moulds) are two common microorganisms that spoil food.

C. Which sense helped Aman identify spoiled food?

Answer: The sense of smell helped Aman identify that the potato sabzi had spoiled, as a strong and unpleasant smell came out of the lunch box.

Additional Questions

A. Why should spoiled food never be eaten?

Answer: Spoiled food contains harmful microorganisms that can cause stomach pain, vomiting, loose motions and food poisoning.

B. Why does food spoil faster during the summer and rainy seasons?

Answer: Heat and moisture during the summer and rainy seasons provide favourable conditions for microorganisms to grow faster.

C. How does salt help in preserving food?

Answer: Salt removes moisture from food, which prevents the growth of microorganisms.

D. Why should pickles be kept away from moisture?

Answer: Moisture allows fungus and bacteria to grow, which can spoil pickles quickly.

E. Explain how mamidi tandra is prepared and how this method helps preserve mangoes.

Answer: Mamidi tandra is prepared using ripe mango pulp mixed with sugar and jaggery. The mixture is spread in thin layers and dried in the sun. Sun-drying removes moisture, which prevents microorganisms from growing, so the mangoes can be preserved and eaten throughout the year.

F. Describe the precautions that should be taken to prevent food from spoiling at home.

Answer: Milk should be boiled properly, cooked food should be covered, vegetables should be stored in a cool place, onions and garlic should be kept dry, and pickles should be protected from moisture. Proper storage helps food stay fresh longer.

G. Case Study — Nitu's lunch box

1. How did Aman know the food was spoiled?

Answer: Aman recognised the spoiled food by its bad smell.

2. What might have happened if Nitu had eaten the spoiled food?

Answer: Nitu could have fallen sick with stomach pain or vomiting.

3. Which values are shown by Preeti?

Answer: Preeti showed care, kindness and sharing.

Chapter 5: Seeds and Seeds

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(iii) Air, water and warmth	Seeds need all three conditions together to sprout.
2	(ii) Bowl with a damp cloth	This bowl provided both air and moisture, which allowed the chana to sprout.
3	(iii) Coconut	The coconut has a hard outer covering that lets it float and travel long distances through water.

B–E. Short Answer Questions

B. Why did Gopal's mother tie the soaked chana in a damp cloth?

Answer: She tied the soaked chana in a damp cloth to give it moisture along with air and warmth — the conditions needed for the seeds to sprout.

C. What is seed dispersal, and why is it important?

Answer: The spreading of seeds from one place to another is called seed dispersal. It is important because it helps plants grow in new places, prevents overcrowding around the parent plant, and ensures that each plant gets enough sunlight, air, water and nutrients.

D. The baby plant inside a seed is called the _____.

Answer: embryo

E. Seeds spread by wind are usually _____ in weight.

Answer: light

Additional Questions

A. Match the following.

Column A	Column B
1. Coconut	(a) Bursting of fruits
2. Cotton seed	(b) Africa
3. Soya bean	(c) Water
4. Coffee	(d) Wind

Answer: 1 – (c), 2 – (d), 3 – (a), 4 – (b)

B. What would happen if seeds did not spread and fell only near the parent plant?

Answer: Plants would grow crowded, compete for food, water and sunlight, and many would not survive.

C. A student kept soaked seeds fully submerged in water for many days, but they did not sprout. Why?

Answer: Seeds need air along with water to sprout. When seeds are fully submerged in water, they do not get enough air, so sprouting does not take place.

D. Potatoes, tomatoes and chilli were brought to India from South America. What does this tell us about the role of human beings in seed dispersal?

Answer: It shows that human beings play a major role in spreading seeds by carrying plants and seeds from one place to another intentionally.

E. Describe the structure of a seed and explain how each part helps in the growth of a new plant.

Answer: A seed has three main parts. The seed coat is the outer covering that protects the seed from damage, insects and drying. Stored food provides energy to the baby plant until it can make its own food. The embryo (baby plant) is the living part of the seed that grows into the root, stem and leaves. All these parts work together to help the seed grow into a healthy plant.

F. Why do seeds with hooks or spines stick to animals or clothes?

Answer: Seeds with hooks or spines stick to animals or clothes so that they can travel to new places and grow there.

G. Why is stored food important for a seed?

Answer: Stored food provides energy to the baby plant until it can make its own food.

H. How are seeds dispersed by bursting fruits?

Answer: In some plants, when the fruits or pods become dry and ripe, they burst open suddenly and throw the seeds away from the parent plant. This helps the seeds reach new places and grow without overcrowding, for example in pea, soyabean and balsam plants.

I. Case Study — Gopal's sprouting experiment

1. Which conditions helped the seeds sprout?

Answer: Air, moisture and warmth helped the seeds sprout.

2. Why did the seeds in water not sprout properly?

Answer: The seeds in water did not get enough air, so they could not sprout.

Chapter 6: Every Drop Counts

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(ii) Jaisalmer	Gadisar Lake is located in the desert city of Jaisalmer, Rajasthan, and was built by King Ghadsi.
2	(ii) Johad	A johad is a small earthen check-dam that collects rainwater and increases the groundwater level.
3	(ii) Al-Biruni	Al-Biruni, a traveller from present-day Uzbekistan, wrote detailed accounts describing Indian water systems.
4	(iii) Open soil and ponds	Open soil and ponds allowed rainwater to soak into the ground, unlike cemented surfaces.
5	(iii) Reusing water for plants	Reusing water is a responsible practice that reduces wastage, unlike leaving taps open or excessive pumping.

B–D. Short Answer Questions

B. What is rainwater harvesting?

Answer: Rainwater harvesting is the method of collecting and storing rainwater, using natural slopes, tanks, lakes or johads, so that it can be used later instead of letting it flow away and get wasted.

C. Why were stepwells useful during droughts?

Answer: Stepwells stored water for long periods and remained useful even during droughts. They reduced dependence on rainfall and also provided shade, cool air and drinking water for travellers.

D. Why should water not be wasted?

Answer: Water is limited and essential for all living beings. Wasting water causes shortages and creates problems for people who do not have easy access to it, so it should always be used responsibly.

Additional Questions

A. Explain how people in earlier times conserved water in dry regions like Rajasthan.

Answer: People built lakes, johads, tanks and stepwells to collect rainwater. They reused water, avoided wastage and designed their lifestyle to save every drop. These methods helped them survive even with very little rainfall.

B. Describe the importance of customs related to water.

Answer: Customs related to water teach respect, gratitude and responsibility. Worshipping water sources reminds people not to waste or pollute water. Such traditions help spread awareness about conservation through daily life and culture.

C. Why is reviving traditional water systems better than depending only on borewells?

Answer: Traditional systems recharge groundwater naturally and are sustainable, while borewells can exhaust groundwater quickly.

D. What values do the traditions of providing water to travellers teach us?

Answer: They teach kindness, sharing, responsibility and respect for life.

E. Make a list of how water is used in your home in one day.

Activity	Approximate Water Used
1. Bathing	Student's observation — answers may vary
2. Cooking	Student's observation — answers may vary
3. Washing clothes	Student's observation — answers may vary
4. Cleaning	Student's observation — answers may vary

F. Why are water bills important?

Answer: They make people aware of water usage and encourage responsible use.

G. Why do you think people forget traditional water systems once the crisis is over?

Answer: When water becomes available again, people become careless and depend on modern systems, forgetting the importance of traditional methods.

H. Match the following.

Column A	Column B
1. Gadisar Lake	(a) Community effort
2. Johad	(b) Uzbekistan
3. Al-Biruni	(c) Rainwater harvesting
4. Darki Mai	(d) Groundwater recharge
5. Stepwell	(e) Water storage below ground

Answer: 1 – (c), 2 – (d), 3 – (b), 4 – (a), 5 – (e)

I. Case Study — Darki Mai's village

1. What problem did the village face?

Answer: The village faced a severe water shortage.

2. What steps were taken to solve it?

Answer: An old lake was rebuilt to collect rainwater.

3. What changes were seen after restoring the lake?

Answer: Wells filled up, farming improved, animals became healthier, and income increased.

Chapter 7: Experiments with Water

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(iii) Empty plastic bottle	An empty plastic bottle traps air inside it, which helps it float.

Q. No.	Answer	Reason
2	(ii) Saltwater becomes heavier	Salt dissolves in water and makes it heavier, so heavier water can support heavier objects like an egg.
3	(iii) Sand	Sand has bigger particles that cannot mix with water, so it settles at the bottom instead of dissolving.
4	(iii) Evaporation	Sunlight heats seawater in shallow salt pans, and evaporation leaves behind salt crystals.

B–C. Short Answer Questions

B. Why does a puffed puri float while an unpuffed puri sinks?

Answer: A puffed puri traps air inside it, which makes it lighter and helps it float. An unpuffed puri remains solid and compact without trapped air, so it sinks.

C. Explain why a heavy ship floats but a small needle sinks.

Answer: A ship is hollow and contains a large amount of trapped air, which spreads its weight over a large area and lets water push it up, so it floats even though it is heavy. A needle is solid, compact and has no trapped air, so it sinks even though it is very light.

Additional Questions

A. Match the following.

Column A	Column B
1. Empty plastic bottle	(a) Very salty water
2. Sand	(b) Settles at the bottom
3. Dead Sea	(c) Floats due to air
4. Evaporation	(d) Making of salt
5. Salt pans	(e) Water into vapour

Answer: 1 – (c), 2 – (b), 3 – (a), 4 – (e), 5 – (d)

B. What are soluble substances? Give two examples.

Answer: Substances that dissolve in water are called soluble substances, such as sugar and salt.

C. What is evaporation?

Answer: Evaporation is the process by which water changes into water vapour and mixes with air.

D. Describe how salt is made from seawater.

Answer: Seawater is collected in shallow salt pans. Sunlight heats the water, causing it to evaporate. Salt remains behind as crystals, which are collected and packed.

E. Observe objects at home and fill the table:

Object	Material	Float / Sink
1. Spoon	Student's observation	Student's observation
2. Leaf	Student's observation	Student's observation
3. Plastic lid	Student's observation	Student's observation
4. Coin	Student's observation	Student's observation

F. Why should we not waste water in daily life?

Answer: Water is limited and essential for life. Wasting water can cause shortages and problems in the future.

G. Name one object that floats and one that sinks in water.

Answer: A leaf floats and a stone sinks.

H. Which substance makes water heavier — sugar or salt?

Answer: Salt.

I. What remains after seawater evaporates?

Answer: Salt.

J. Case Study — Ravi's visit to the salt pans

1. What happened to the seawater in the ponds?

Answer: The water evaporated.

2. Name the process responsible for this change.

Answer: Evaporation.

3. Why are the ponds kept shallow?

Answer: Shallow ponds increase the surface area, speeding up evaporation.

4. Which natural resource helps in making salt?

Answer: Sunlight and seawater.

Chapter 8: A Treat for Mosquitoes

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(iii) Female Anopheles mosquito	Only the female Anopheles mosquito carries and spreads the malarial parasite through its bite.
2	(ii) To identify germs or parasites	A blood test helps doctors check whether parasites or harmful germs, such as those causing malaria, are present in the blood.
3	(iii) Iron	Anaemia occurs when the haemoglobin level is low due to a lack of iron in the body.
4	(iii) Stagnant water	Mosquitoes lay their eggs in still, stagnant water, which provides a suitable place for larvae to grow.

B–D. Short Answer Questions

B. Name one disease spread by mosquitoes.

Answer: Malaria (mosquitoes also spread dengue and chikungunya).

C. Name one place where mosquitoes breed.

Answer: Water coolers that are not cleaned regularly (mosquitoes also breed in open tanks, flower pots and drains).

D. What test confirms malaria?

Answer: A blood test confirms malaria by showing the presence of malarial parasites.

Additional Questions

A. Match the following.

Column A	Column B
1. Malaria	(a) Iron-rich food
2. Anaemia	(b) Mosquito-borne disease
3. Spinach	(c) Contaminates food
4. Housefly	(d) Low haemoglobin

Answer: 1 – (b), 2 – (d), 3 – (a), 4 – (c)

B. Why are blood tests important?

Answer: Blood tests help doctors identify diseases correctly and give the right treatment.

C. What are two symptoms of anaemia?

Answer: Tiredness and weakness.

D. How do flies spread diseases?

Answer: Flies carry germs from dirty places to food.

E. Explain how mosquitoes spread diseases and how we can prevent them.

Answer: Mosquitoes spread diseases by biting an infected person and then biting a healthy person. They breed in stagnant water. We can prevent them by keeping surroundings clean, removing stagnant water, covering tanks and using mosquito nets.

F. Describe anaemia, its causes and prevention.

Answer: Anaemia occurs when haemoglobin is low due to a lack of iron. It causes weakness and tiredness. Eating iron-rich food and taking medical advice helps prevent it.

G. How do mosquitoes breed, and what steps can be taken to control their population?

Answer: Mosquitoes breed in stagnant water where they lay their eggs, which grow into larvae and then into adult mosquitoes. Common breeding places include water coolers, open tanks, flower pots, drains and puddles. To control mosquitoes, stagnant water should not be allowed to collect, water tanks should be covered, coolers should be cleaned regularly, and drains should be kept clear. Fish can also be released in ponds as they eat mosquito larvae.

H. Observe your surroundings and complete the table:

Place	Water Collected	Risk of Mosquitoes
1. Cooler	Yes	High
2. Flower pot	Yes	Medium
3. Open ground	No	Low

I. Explain how flies spread diseases and how we can protect ourselves from them.

Answer: Flies spread diseases by carrying germs on their legs and mouthparts. They sit on garbage, animal waste and dirty places, where germs stick to their bodies. When flies later sit on uncovered food, they transfer these germs to it, spreading diseases such as cholera, dysentery and typhoid. We can protect ourselves by keeping food covered, maintaining cleanliness, disposing of garbage properly and washing hands before eating.

J. Case Study — Fever in a housing colony

1. What caused the spread of the disease?

Answer: Stagnant water collected in coolers and flower pots.

2. Which disease could be spread due to mosquitoes?

Answer: Malaria.

3. What steps should the colony take?

Answer: Clean water containers, remove stagnant water and spread awareness.

Chapter 9: Up You Go

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(iii) Uttarkashi	The mountaineering camp was held at the Nehru Institute of Mountaineering (NIM), Uttarkashi.

Q. No.	Answer	Reason
2	(iii) Sleeping bag filled with feathers	The soft feathers inside the sleeping bags trapped body heat and kept the climbers warm through the cold night.
3	(iii) 1984	Bachhendri Pal reached the summit of Mount Everest on 23 May 1984.

B–C. Fill in the Blanks

B. The Nehru Institute of Mountaineering is located in ____.

Answer: Uttarkashi

C. A safety rope fixed in rocks is held by ____.

Answer: pitons

Additional Questions

A. Why is mountaineering considered both adventurous and challenging?

Answer: Mountaineering is adventurous because it involves climbing high mountains and facing natural dangers like cold, snow and steep paths. It is challenging because it tests physical strength, mental courage, discipline and teamwork.

B. What difficulties did Sangeeta Madam face on the second day of the camp?

Answer: She had blisters on her feet, severe pain due to a long walk, fear of steep climbs and narrow paths, and mental hesitation to continue the trek.

C. Why were medical check-ups done every morning at the camp?

Answer: Medical check-ups were done to ensure that participants were fit, healthy and safe to continue trekking in cold and difficult mountain conditions.

D. Describe the responsibilities of a group leader in the mountains.

Answer: A group leader in the mountains has many responsibilities. The leader helps others carry their bags, walks behind the group to ensure no one is left behind, supports weak or tired members, finds safe places to rest, looks after sick people, arranges food and water, and accepts responsibility even if someone else makes a mistake. Such leadership requires discipline, care and selflessness.

E. How did crossing the river change Sangeeta Madam's confidence?

Answer: While crossing the river, Sangeeta Madam was very scared due to the icy water and strong current. She slipped and lost balance, but the safety rope saved her. When she successfully reached the other side, she felt a special happiness and confidence, as facing and overcoming fear made her mentally stronger.

F. Write a short note on Bachhendri Pal's achievement.

Answer: Bachhendri Pal became the first Indian woman to climb Mount Everest in 1984. Despite facing injuries, a severe snowstorm and extreme cold, she showed courage and determination. By planting the Indian flag on the peak, she brought pride to the nation and became an inspiration for millions.

G. Write two qualities you think are important for a good leader in difficult situations.

Answer: Responsibility and courage.

H. Why do you think discipline is more important in the mountains than in cities?

Answer: In the mountains, even a small mistake can be dangerous. Discipline ensures safety, coordination and survival.

I. How does facing fear help a person grow stronger?

Answer: Facing fear builds confidence, self-belief and mental strength, helping a person handle future challenges better.

J. Case Study — Crossing the icy river

1. Why was a rope tied across the river?

Answer: The rope was tied to help climbers cross safely and maintain balance in the strong current.

2. What safety lesson do we learn from this incident?

Answer: Safety rules and equipment must always be followed in risky situations.

3. What could have happened if safety equipment had not been used?

Answer: Without safety equipment, a person could be swept away by the river and seriously injured.

Chapter 10: Walls Tell Stories

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(iii) To slow down enemies	The small gate forced enemies to enter slowly, one by one, making it easier for soldiers to control or attack them.
2	(ii) To stop enemy elephants	The sharp iron spikes on the gate injured and scared away enemy elephants used to break down the gate.
3	(iii) Bastions (Burj)	Bastions were round structures built higher and stronger than the main walls to help soldiers watch and defend the fort.
4	(iii) 87	Golconda Fort has 87 bastions placed at strategic points along the walls.
5	(ii) Qutubshahi Sultans	The Qutubshahi Sultans ruled Golconda from 1518 to 1687.

B–D. Short Answer Questions

B. Why was a small gate built inside the big gate of Golconda Fort?

Answer: The small gate was a safety feature. Even if enemies broke through the main gate, they would be forced to enter slowly through the smaller gate, making it easier for soldiers to control or attack them.

C. What were bastions (burj) used for?

Answer: Bastions were round, raised structures on the fort walls that helped soldiers keep watch in all directions, spot enemies approaching from far away, and shoot arrows, fire cannons or throw stones during an attack.

D. Name the rulers who ruled Golconda from 1518 to 1687.

Answer: The Qutubshahi Sultans.

E. Fill in the blanks.

No.	Statement	Answer
1	Golconda Fort has _____ bastions.	87
2	The Persian wheel used _____ to lift water.	bullocks
3	The Qutubshahi rulers ruled Golconda till _____.	1687
4	Clay _____ were used to carry water.	pipes
5	Museums help us understand the _____.	past / history

Additional Questions

A. What was the Persian wheel used for?

Answer: It was used to lift water from wells using bullocks.

B. Why are museums important?

Answer: Museums preserve old objects and help us understand how people lived in the past.

C. How did the spikes on the gate help in defence?

Answer: The sharp iron spikes fixed on the gate stopped enemy elephants from pushing or breaking the gate. Elephants were often used in wars to attack forts, and these spikes injured and scared them away, making the gate stronger and safer.

D. Why can Golconda Fort be called a "complete town"?

Answer: Golconda Fort had palaces, gardens, fields, factories and houses. Farmers, workers, soldiers and craftsmen lived there along with the king, and it had water systems, markets and defence arrangements. This shows it was a full town, not just a fort.

E. Explain how water reached fountains without electricity.

Answer: Water was lifted from wells using bullocks and wheels with pots. Clay pipes carried the water to tanks, and from the tanks, water flowed to fountains using gravity, so no electricity was needed.

F. Describe the water management system of Golconda Fort.

Answer: Golconda Fort had a very advanced water management system. Water was lifted from wells using a Persian wheel turned by bullocks, and pots tied to the wheel carried water upward. Clay pipes and stone channels then carried water to storage tanks inside the fort, from where it flowed naturally to palaces, gardens and fountains using gravity. Rainwater was also collected and stored. This system worked without electricity and prevented water wastage, showing excellent planning and respect for water.

G. Why was Golconda Fort attacked many times? What were the effects of these wars?

Answer: Golconda Fort was attacked many times because it was very rich and powerful, famous for its diamond trade and strong economy. Aurangzeb's army attacked it for eight months but found it difficult to enter due to the strong walls, bastions and moats. These wars caused great loss of life, destruction of villages, hunger and suffering for common people, and weakened kingdoms while disturbing peaceful life.

H. Visit a historical fort (or use pictures/books) and observe different structures.

Structure Observed	Where It Was Seen	Purpose / Use
1.	Student's observation	Student's observation
2.	Student's observation	Student's observation
3.	Student's observation	Student's observation

I. Case Study — Drawing water in a village near Golconda

1. What method was used to lift water?

Answer: The Persian wheel, turned by bullocks.

2. Why was this system useful?

Answer: It worked without electricity and saved water.

3. How is water lifted today?

Answer: Using electric pumps and motors.

Chapter 11: Sunita in Space

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(ii) Because of gravity	Gravity is the force that pulls all objects towards the centre of the Earth, which is why things fall downwards instead of floating away.
2	(iii) It floats as blobs	In space there is almost no gravity to hold water down, so it forms small floating round blobs instead of flowing normally.
3	(iii) Sunita Williams	The chapter is built around Sunita Williams' first-hand account of what it was like to live and work aboard a spaceship.

Q. No.	Answer	Reason
4	(iv) Country borders	Borders between countries are lines drawn by humans on maps for administration; they are not physical lines and cannot be seen from space.

B. True or False

Q. No.	Statement	Answer	Reason
1	We can see borders between countries from space.	F	Borders are man-made lines that exist only on maps, not as physical lines on Earth's surface.
2	In space, astronauts can walk normally.	F	With almost no gravity, astronauts cannot stay on the ground; they float from place to place instead of walking.
3	The Earth looks round from space.	T	Astronauts like Sunita Williams have seen and confirmed the curved, round shape of the Earth from space.
4	Stars are easily seen during the daytime.	F	The Sun's bright light hides the fainter light of the stars during the day, so they are not visible.
5	Sunita Williams wanted children to never give up.	T	She told children that even if you get something different from what you wanted, you should do your best and things will work out.

C. Why does water not fall off the Earth?

Answer: Gravity pulls water, along with everything else, towards the centre of the Earth. This force acts all around the planet, which is why water stays inside rivers, oceans and containers instead of floating away into space.

D. Why did Sunita's hair stand up in space?

Answer: In space there is almost no gravity to pull hair downward. With nothing holding it in place, Sunita's hair kept floating and standing up all the time, so she had no need for a comb.

E. What lesson do we learn from Sunita Williams' life?

Answer: We learn that success does not always follow a straight path. Sunita wanted to become a diver, but when that did not work out, she became a helicopter pilot and later an astronaut. Her life teaches us that if we do our best and never give up, things eventually work out, even if the path is different from what we first imagined.

Additional Questions

A. Explain why people do not fall off the Earth even though it is round.

Answer: People do not fall off the Earth because of gravity. Gravity pulls everything towards the centre of the Earth, and this force acts all around the planet, not just on one side. That is why people, oceans, rivers and buildings in every country stay firmly in place on the ground.

B. Describe Sunita Williams' daily life inside the spaceship.

Answer: Inside the spaceship, Sunita could not sit or stand normally; she floated from one place to another. Water floated around as small round blobs, so she had to catch them to wash her face. Food packets also floated, which made eating a fun, shared activity. Her hair stood up because there was no gravity to pull it down, and she had to strap herself in place to stay still. Living in space was exciting but also full of new challenges.

C. How does the 'Magic 1' activity help us understand gravity?

Answer: In the activity, a coin dropped alone falls faster than a loose piece of paper, but when the paper is placed flat on top of the coin, both fall together at the same speed. This happens because air resistance slows down light objects like paper more than heavy ones. The activity shows that gravity actually pulls all objects equally, but air can change how fast they appear to fall.

D. What lesson do we learn from Sunita Williams' life story?

Answer: Sunita Williams' life teaches us that success does not come easily. She tried many things before becoming an astronaut, and even when her plans changed, she did not give up. Her story teaches us to work hard, stay patient, and believe that dreams can come true with effort.

E. Explain why things behave differently on Earth and in space.

Answer: On Earth, gravity pulls everything towards the ground, which is why we can walk, sit, drink water, and catch a ball that we throw up. In space, gravity is far too weak to be felt in the same way, so objects, water and even hair float freely. This difference in the strength of gravity is what causes things to behave so differently in the two places.

F. If gravity suddenly stopped working on Earth, what changes would you notice around you? Write any two points.

Answer: (i) People and objects would start floating instead of staying on the ground. (ii) Water would not stay inside rivers, containers or taps and would float away instead of flowing downward.

G. Why is observing the sky important for learning science?

Answer: Observing the sky helps us notice changes in the Moon, stars and Sun, and it builds curiosity and the habit of asking questions. Many important scientific discoveries began with careful observation of the sky, and this simple activity connects classroom learning with real life.

H. Why do stars twinkle at night but not during the day?

Answer: Stars appear to twinkle because their light passes through the Earth's atmosphere and gets bent slightly as it travels. During the day, the Sun's strong light overpowers the faint light of the stars, so we cannot see them; at night, the sky is dark enough for their twinkling light to be clearly visible.

I. Observe the Moon every night for 15 days at the same time. Complete the table.

Day	Shape of the Moon (Description)	Name of the Phase	Size
1	Thin curved shape (like a smile)	Crescent Moon	Small
2	Slightly thicker curve	Crescent Moon	Small
3	Half-circle on one side	First Quarter (Half Moon)	Medium
4	More than half visible	Waxing Gibbous	Medium
5	Almost round	Waxing Gibbous	Large
6	Full round shape	Full Moon	Large
7	Full and very bright	Full Moon	Large
8	Slightly less than full	Waning Gibbous	Large
9	More than half, but decreasing	Waning Gibbous	Medium
10	Half-circle on the other side	Last Quarter (Half Moon)	Medium
11	Curved shape getting thinner	Waning Crescent	Small
12	Thin curved shape	Waning Crescent	Small
13	Very thin curve	Waning Crescent	Very Small
14	Almost not visible	New Moon	Very Small
15	Not visible or very faint	New Moon	Very Small

Note: This is a sample answer; the actual dates and observations will vary depending on when the student begins the activity and the Moon's phase on that day.

J. Case Study — Sunita noticed that from space she could not see borders between countries.

1. What could she see clearly?

Answer: From space, Sunita could clearly see the curved shape of the Earth, vast blue oceans, large landmasses, white clouds, swirling weather patterns, deserts, forests and ice-covered regions — but no lines dividing countries or states.

2. What lesson does this teach us?

Answer: This teaches us that the Earth is one shared home for all living beings. Borders are made by humans for administration and governance and do not exist in nature. This lesson reminds us to respect one another, care for the Earth, and work together as one global family.

Chapter 12: What if it Finishes...?

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(iii) Petroleum	Petrol and diesel are made by refining crude oil, which is called petroleum and is found deep inside the Earth.
2	(iii) Petroleum	Petroleum forms naturally over millions of years from material buried deep underground, so it cannot be replaced quickly.
3	(iii) Petrol car	Burning petrol releases smoke and harmful gases, unlike a bicycle, an electric train, or walking, which do not pollute the air.

B. True or False

Q. No.	Statement	Answer	Reason
1	Petroleum is a renewable resource.	F	Petroleum takes millions of years to form and cannot be replaced quickly once used, so it is a non-renewable resource.
2	Smoke from vehicles can cause health problems.	T	Vehicle smoke pollutes the air and causes coughing, breathing difficulty and other health issues.
3	LPG produces less smoke than wood.	T	LPG is a cleaner fuel that burns easily and produces very little smoke compared to burning wood.
4	Public transport helps save fuel.	T	A single bus or train carries many people together, using much less fuel per person than many separate vehicles.

Teacher's Note: Item 5 in this section of the textbook ("Why are petrol and diesel called limited resources?") is a question, not a True/False statement — likely a printing error. Its answer is provided below as a short-answer question.

5. Why are petrol and diesel called limited resources?

Answer: Petrol and diesel are called limited (non-renewable) resources because they are formed from petroleum deep inside the Earth over millions of years. Once they are used up, they cannot be quickly replaced, so the supply available to us is limited.

C. How does smoke from vehicles affect people?

Answer: Smoke from vehicles pollutes the air and makes it unhealthy to breathe. It causes coughing, burning eyes, headaches and breathing difficulty, and it is especially harmful for children and elderly people who spend a lot of time near busy roads.

D. Why is LPG better than wood for cooking?

Answer: LPG burns cleanly and produces very little smoke, which makes cooking faster, safer and healthier. Wood, especially when damp, produces thick smoke that fills the kitchen, causes breathing problems, and takes a long time to collect and burn.

E. Why should engines be switched off at red lights?

Answer: Switching off the engine at red lights saves the fuel that would otherwise be wasted while the vehicle stands still, and it also reduces the smoke and air pollution released into the surroundings.

Additional Questions

A. Fill in the blanks.

No.	Statement	Answer
1	Crude oil is cleaned in a _____.	refinery
2	Burning damp wood produces a lot of _____.	smoke
3	Petrol and diesel are _____ resources.	limited / non-renewable
4	Using buses can help _____ fuel.	save

B. Explain how increasing the number of vehicles creates problems in cities.

Answer: More vehicles on the road increase air and noise pollution, since smoke from engines makes the air unhealthy to breathe and constant honking creates noise pollution. Crowded roads also cause traffic jams and accidents, and fuel is wasted as vehicles move slowly or stand still, all of which affect people's health and the environment.

C. Describe the difficulties faced by Durga while using wood for cooking.

Answer: Durga spends many hours every day collecting wood for her chulha, which is tiring and time-consuming and also reduces her daughter's time for studies and play. Burning damp wood produces thick smoke that fills the house, and breathing this smoke daily has caused Durga continuous coughing, burning eyes and headaches. Because her family cannot afford LPG, they have no other clean option, which affects both their health and their daily life.

D. What is crude oil?

Answer: Crude oil is the thick, dark (black or dark brown), sticky oil with a strong smell that is taken out from deep inside the Earth. It cannot be used directly and must be cleaned and separated into useful products at a refinery.

E. Where is crude oil cleaned?

Answer: Crude oil is cleaned and separated into useful products such as petrol, diesel, kerosene and LPG at a refinery.

F. Name one fuel that is used both for cooking and lighting.

Answer: Kerosene is used both for cooking and for lighting lamps and stoves in some homes.

G. Describe how public transport helps both people and the environment.

Answer: Public transport carries many people together in a single vehicle, which saves fuel by reducing the number of vehicles on the road. This lowers air pollution and traffic congestion, and it is also cheaper for people while helping to keep cities cleaner.

H. What problems will occur if petrol and diesel finish completely?

Answer: If petrol and diesel finish completely, vehicles would stop running, transport would be badly affected, and daily life would become very difficult. Factories, farms and essential services that depend on these fuels would also suffer, and people would be forced to find alternative sources of energy.

I. Observe the daily habits of your family for one day. Complete the table.

Student's own observation — answers will vary based on each family's daily activities. A model row is shown below as an example.

S. No.	Daily Activity at Home	Fuel / Energy Used	How Fuel Is Wasted	How We Can Save Fuel
1.	Cooking food	LPG	Flame left on after cooking is done	Switch off the gas immediately after use
2.	Travelling short distance	Petrol	Using a car/bike for very short trips	Walk or cycle for short distances
3.	Watching TV / lights on	Electricity	Lights and TV left on when not needed	Switch off when leaving the room
4.	Heating water	Electricity/LPG	Boiling more water than needed	Heat only the water required
5.	Waiting at traffic signal	Petrol/Diesel	Engine left running while waiting	Switch off the engine at red lights

J. Case Study — Durga's family uses wood for cooking instead of LPG.

1. Why does Durga continue using wood?

Answer: Durga continues using wood because her family cannot afford to buy LPG.

2. What problems does this cause?

Answer: Burning damp wood produces thick smoke, which causes coughing, breathing problems and discomfort for Durga and her family.

3. How can clean fuel improve her life?

Answer: Clean fuel like LPG would reduce smoke, save the time spent collecting wood, and improve the health of Durga and her family.

Chapter 13: A Shelter So High!

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(iii) Because climate and land are different	Shelter design depends on the local climate, landform and available natural conditions of a region.
2	(iii) Stone and mud	Thick stone-and-mud walls trap heat inside the house and help it stay warm through the cold Ladakh winters.
3	(iii) Tent	Gaurav carried a small, light nylon tent as his temporary shelter for the nights of his motorcycle journey.
4	(iii) move from place to place	Changpas are nomadic herders who travel with their sheep, goats, horses and yaks in search of pasture.
5	(iii) Changpa tent	Rebo is the cone-shaped tent made of yak hair used by the nomadic Changpa tribe of the cold desert.

B. Why do people build different types of shelters in different regions?

Answer: Different regions have very different climates and natural conditions — hot deserts, cold mountains, forests, plains and even water bodies. People use whatever materials are locally available and design their shelters to suit their climate, so that the shelters protect them from heat, cold, rain, wind or snow, whichever is needed in that region.

C. What difficulties do people face while living in very high and cold places?

Answer: In very high and cold regions, the temperature remains low for most of the year, the air becomes thin due to the height, making breathing difficult, and icy winds blow constantly. Roads are hard to build in such terrain, and many modern facilities are not easily available.

D. Why did Gaurav Jani carry extra petrol during his journey?

Answer: Since petrol pumps are rare in mountain areas, Gaurav carried extra petrol cans so that he would not get stranded during the long, remote stretches of his journey.

E. How does a tent help travellers in cold regions?

Answer: A tent gives a traveller a light, portable shelter that can be set up anywhere, protecting them from the freezing cold and wind at night so they can rest safely even in remote mountain areas with no proper houses nearby.

F. Describe two special features of houses in Leh.

Answer: Houses in Leh have thick walls made of stone coated with mud and lime, which trap heat inside and keep the house warm; and small windows, which reduce the entry of cold winds. The flat roof is also strong enough to store dried food and to bear the weight of snow.

Additional Questions

A. What is a shelter?

Answer: A shelter is a place that protects people from heat, cold, rain, wind and snow, helping them live safely and comfortably.

B. Name one problem faced at high altitudes.

Answer: Breathing becomes difficult at high altitudes because the air is thin and has low oxygen levels.

C. Why are windows small in houses in Leh?

Answer: Windows are kept small in Leh to reduce the entry of cold winds and to help the house stay warm.

D. Why did Gaurav carry extra petrol?

Answer: Petrol pumps are rare in mountain areas, so Gaurav carried extra petrol to avoid problems during his long journey.

E. Describe the special features of houses in cold regions like Leh.

Answer: Houses in cold regions like Leh have thick walls made of stone and mud to trap heat, small windows to block cold winds, and flat roofs strong enough to store dried food and withstand snowfall. Local materials such as stone and mud are used because they are easily available in the area.

F. Who are the Changpas and how do they live?

Answer: The Changpas are nomadic people who live in the high, cold regions of Ladakh. They move from place to place with their sheep, goats, horses and yaks in search of grazing land, depending on their animals for milk, meat, wool and skin. Their cone-shaped Rebo tents can be packed up and moved easily whenever they shift their settlement.

G. Observe the features of houses in cold regions. Complete the table.

Feature	Cold Region House	Reason
Thick walls	Yes	Keeps the house warm by trapping heat inside
Small windows	Yes	Stops cold wind from entering the house
Flat roof	Yes	Used to dry and store food, and strong enough to bear snowfall

H. Case Study — Ravi visited a cold mountain region with his parents.

1. Why were the walls of the houses thick?

Answer: Thick walls help trap heat inside the house and keep it warm during the harsh winter.

2. Why were vegetables dried and stored?

Answer: Fresh food is not easily available in winter, so vegetables are dried and stored in advance for use during that season.

3. How do animals help people during winter?

Answer: Animals kept on the lower floor of the house give off body warmth, which helps keep the family warm in cold weather.

Chapter 14: When the Earth Shook!

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(iii) Sudden movement inside the Earth	Earthquakes are caused by sudden movements deep inside the Earth's crust, occurring along cracks called faults.
2	(ii) Gujarat	The powerful Bhuj earthquake struck Bhuj and the nearby Kutch region of Gujarat on 26 January 2001.
3	(iii) They provide temporary shelter	Since houses had collapsed, plastic tents gave survivors quick, temporary protection from the cold.
4	(ii) Dogs	Specially trained rescue dogs use their sharp sense of smell to locate people trapped under debris.
5	(iii) Earthquake-resistant houses	These houses are designed to bend slightly during shaking instead of collapsing, which keeps people safer.

B. What is an earthquake?

Answer: An earthquake is a sudden, violent shaking of the ground caused by movement deep inside the Earth's crust, often occurring along cracks in the Earth called faults.

C. Name the village leader who helped people.

Answer: Motabapu, the sarpanch of Jasma's village, helped the people — his house was not badly damaged, and he opened his godown to share rice and wheat with everyone.

D. What injured Jasma during the earthquake?

Answer: Jasma's leg was fractured during the earthquake, and she was treated with the help of fellow villagers since proper medical facilities were not available.

E. Name one safety rule during an earthquake.

Answer: If indoors during an earthquake, one should take shelter under a strong table or bed and protect the head and neck (or: move to open ground away from buildings, if possible).

F. Why are earthquakes more dangerous than some other disasters?

Answer: Earthquakes are especially dangerous because they strike suddenly and without any warning, giving people very little time to react before buildings collapse, roads crack, and electricity lines break.

Additional Questions

A. How did villagers help each other after the earthquake?

Answer: Villagers shared whatever little food they had, cooked together at Motabapu's house, and supported one another emotionally and physically during the difficult days after the earthquake.

B. Why were people afraid at night after the earthquake?

Answer: People were afraid at night because they feared another earthquake might strike, and they had no proper houses to protect them from the freezing winter cold.

C. Describe the effects of the Bhuj earthquake on Jasma's village.

Answer: The Bhuj earthquake destroyed Jasma's village within minutes. Houses collapsed, roads cracked open, and belongings were buried under stones, mud and broken wood. Many people were injured, and six villagers, including Jasma's grandfather, lost their lives. The village hospital was also badly damaged, which made treating the injured very difficult, and the whole village was filled with fear, grief and shock.

D. How did outside help and community support help people recover after the earthquake?

Answer: Help arrived from cities in the form of food, clothes, medicines and blankets, while rescue teams, doctors and volunteers worked together to treat and support the injured. Scientists and engineers guided villagers in rebuilding safer, earthquake-resistant houses, and this community support gave people the strength, hope and confidence to rebuild their lives.

E. Make a chart showing Do's and Don'ts during an earthquake.

Answer: Do's: Stay calm; move to open ground if possible; take shelter under a strong table; protect your head and neck; wait until the shaking stops before moving. Don'ts: Do not run blindly through the building; do not use lifts; do not stand near tall furniture, windows or glass.

F. Match the following.

Column A	Column B	Matched Answer
1. Rescue dogs	(b) Locate trapped people	1 → b
2. Doctors	(c) Treat injured people	2 → c
3. Police	(a) Maintain law and order	3 → a
4. Firefighters	(d) Rescue people from debris	4 → d

G. Why was the village hospital not able to help properly after the earthquake?

Answer: The village hospital was badly damaged by the earthquake and had very few medicines and tools left, so doctors could not treat the many injured villagers properly.

H. Why did villagers decide to rebuild their houses using expert guidance?

Answer: Experts helped villagers design earthquake-resistant houses that were much safer than the old ones. Although they were worried the new designs would not look traditional at first, villagers soon understood that safety was more important than appearance.

I. Explain how disasters like earthquakes change people's lives and what helps them recover.

Answer: Disasters like earthquakes destroy homes and belongings and can even take away loved ones, causing both physical and emotional suffering. Life becomes difficult due to a lack of shelter, food and safety. Help from neighbours, rescue teams, doctors and the government supports recovery, and cooperation, courage and community effort help people rebuild their lives step by step.

J. Case Study — Rina lives in a flood-affected village.

1. What type of disaster did Rina face?

Answer: Rina faced a flood.

2. Name two problems caused by floods.

Answer: Floods can wash away and destroy houses, and dirty floodwater spreads diseases such as cholera and malaria.

3. Who helped Rina's village?

Answer: Doctors, volunteers and government agencies helped Rina's village by treating the sick, distributing food, and setting up relief camps.

4. What values are shown during disasters?

Answer: Cooperation, kindness and helping others are the values shown by people during disasters.

Chapter 15: Blow Hot, Blow Cold

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(ii) Because air removes heat from food	Moving air carries heat away from the surface of hot food, which lowers its temperature and cools it down.

Q. No.	Answer	Reason
2	(iii) Sound becomes louder	Blowing harder pushes more air through the whistle, making the paper vibrate more strongly and produce a louder sound.
3	(iii) Because water vapour condenses	Warm breath contains water vapour, which turns into tiny water droplets on touching the cooler surface of the mirror.
4	(iii) It becomes faster	During activity, muscles need more oxygen to produce energy, so breathing becomes faster and deeper.
5	(iii) Hot air rises	Hot air is lighter than cold air, so it rises upward, making the paper snake rotate and lift when held above a warm surface.

B. What warms the air inside our mouth?

Answer: Our body heat warms the air inside our mouth and lungs before we breathe it out, which is why our breath usually feels warmer than the surrounding air.

C. Name one thing air can carry.

Answer: Air can carry heat (it can also carry sound and water vapour).

D. What sound does the heart make?

Answer: The heart makes a regular "dhak-dhak" sound, which is called a heartbeat.

E. Which air is lighter — hot or cold?

Answer: Hot air is lighter than cold air, which is why hot air rises upward while cold air sinks downward.

F. Why does blowing gently feel warm and blowing hard feel cool?

Answer: When we blow gently, the warm air from our mouth stays close to the skin and feels warm. When we blow hard, the fast-moving air quickly carries heat away and mixes with the cooler surrounding air, so it feels cool instead.

Additional Questions

A. Why does breathing become faster after exercise?

Answer: During exercise, the body's muscles work harder and need more energy, and producing this energy requires more oxygen. As a result, breathing becomes faster to take in the extra oxygen the body needs.

B. How does the paper whistle show that air creates sound?

Answer: When air is blown through the paper whistle, it makes the paper vibrate, and these vibrations produce sound. Blowing harder sends stronger air through the whistle, which makes the paper vibrate more and produces a louder sound.

C. Explain how the story of the woodcutter helps us understand science.

Answer: The story shows that the same breath can warm cold hands and cool hot food, which looks like magic at first. Science explains this through air movement and heat transfer: gentle blowing keeps warm air close to the skin, while fast blowing carries heat away quickly. The story teaches us that careful observation of everyday activities can help us understand science.

D. Describe the paper snake activity and what it teaches us.

Answer: In the paper snake activity, a spiral paper snake is hung on a thread and held above a warm source such as sunlight or warm hands. The snake rotates and rises because hot air is lighter and moves upward; when the warm air is taken away, the snake becomes still again. This activity shows that air is always moving, even though we cannot see it, and that hot air rises while cold air sinks.

E. Match the following.

Column A	Column B	Matched Answer
1. Blowing gently	(c) Softer sound	1 → c

Column A	Column B	Matched Answer
2. Blowing hard	(a) Louder sound	2 → a
3. Dhak-dhak sound	(b) Heartbeat	3 → b
4. Hot air	(d) Rises upward	4 → d

F. What changes do you notice in sound when you blow gently and then blow hard into a paper whistle?

Answer: Blowing gently produces a soft, low sound, while blowing harder produces a louder, sharper sound, because stronger air makes the paper vibrate more.

G. Observe the situations given below. Complete the table.

Situation	How Air Is Used	Effect Observed
Blowing on cold hands	Warm breath is blown gently onto the hands	Hands feel warmer
Blowing on hot food	Air is blown hard across the hot food	Food cools down faster
Blowing hard into a whistle	Strong air is pushed through the paper tube	Sound becomes louder
Blowing gently on a mirror	Warm breath is released slowly near the surface	Mirror becomes foggy (water vapour condenses)
Running or jumping	Body takes in and breathes out air faster	Breathing becomes faster and deeper

H. Describe how the activities in this chapter help us understand the presence and movement of air.

Answer: The activities in this chapter help us feel and observe air, which is otherwise invisible. Blowing on our hands shows the effect of warm air, the paper whistle shows that moving air creates sound, fog on a mirror shows that our breath contains water vapour, and the paper snake activity shows that hot air rises. Together, these simple activities help us understand air movement, heat transfer and moisture in an everyday way.

I. Why do our heartbeat and breathing rate increase during physical activity? Explain with reasons.

Answer: During physical activity, our muscles work harder and need more energy to keep moving. To produce this energy, the body requires more oxygen, so breathing becomes faster to take in extra oxygen, and the heart beats faster to pump oxygen-rich blood quickly to the muscles. This helps the body meet its increased energy needs and keep working efficiently.

J. Case Study — Ravi blew on his cold hands in winter and later blew on hot soup before drinking it.

1. Why did Ravi blow on his hands?

Answer: Ravi blew gently on his hands to warm them using the warm air from his breath.

2. Why did he blow on hot soup?

Answer: He blew hard on the hot soup to cool it down before drinking it.

3. What concept explains both actions?

Answer: Both actions are explained by air movement and heat transfer — gentle breath stays warm and warms cold hands, while a strong stream of air carries heat away and cools hot food.

Chapter 16: Who Will do This Work?

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(ii) It keeps our surroundings healthy	Clean surroundings prevent the spread of dirt, disease and bad smell, keeping places safe and pleasant to live in.
2	(iii) Everyone, including guests	Gandhiji believed no one should get special treatment; in his Ashram, men, women, children and even guests shared cleaning duties equally.
3	(iii) Every person should do every kind of work	Gandhiji wanted to remove untouchability and teach that no work is higher or lower than any other work.

B. True or False

Q. No.	Statement	Answer	Reason
1	Cleaning is only the responsibility of a few people.	F	The chapter says cleanliness is the responsibility of everyone, not just a few people.
2	Narayan lived in Sabarmati Ashram when he was a child.	T	As a boy called Babla, Narayan lived in Gandhiji's Sabarmati Ashram and learned to clean toilets there.
3	Hetal and Meena cleaned the school by choice.	F	Only children from their community were asked to do this work, and Hetal said they were beaten if they refused.
4	Dr Bhimrao Ambedkar fought for equality and justice.	T	He fought against injustice, worked for equality, and helped draft India's Constitution.
5	All jobs are equally important for society.	T	The chapter teaches that no job is small or unimportant, and society works smoothly only when every job is respected.

C. Name the place where Narayan lived as a child.

Answer: Narayan (Babla) lived in Gandhiji's Sabarmati Ashram as a child.

Additional Questions

A. What happens if garbage is not cleaned for many days?

Answer: If garbage is not cleaned for many days, dirt increases, a bad smell spreads in the air, flies and mosquitoes multiply, and people can fall sick.

B. Who refused to cut Bhim's hair?

Answer: A barber refused to cut Bhim's hair, saying it would make him dirty.

C. Why is cleaning work often not respected?

Answer: Cleaning work is often not respected because of old social habits, where certain kinds of work are wrongly seen as low, even though every job is necessary for society.

D. What lesson did Gandhiji want people to learn by cleaning toilets themselves?

Answer: Gandhiji wanted people to learn equality, humility, and respect for all kinds of work by cleaning toilets themselves, regardless of their social status.

E. Why is cleanliness everyone's responsibility?

Answer: Cleanliness is everyone's responsibility because everyone uses public places such as roads, schools and toilets, and everyone benefits equally from keeping them clean.

F. Explain what the interview with cleaning workers teaches us.

Answer: The interview shows that many people do cleaning work not by choice but because of long-standing social practices passed down through generations. Even after getting an education, it remains very difficult for them to get a different job. It teaches us that work should be chosen by a person's interest and ability, not decided by their birth or community.

G. Describe the incident from Gandhiji's Ashram and its message.

Answer: In Gandhiji's Ashram, everyone — men, women, children and even guests — cleaned toilets, and no one was given special treatment. This showed that no work is low or high. Through this practice, Gandhiji wanted to remove untouchability from people's minds and teach respect for every kind of labour.

H. Observe each place and fill the table by noting who cleans it, how often it is cleaned, and whether the work is shared.

Sample Answer:

Place	Who Cleans It	How Often	Is the Work Shared?
1. Classroom	Sweeper / Students	Daily	Yes / No
2. Playground	Sweeper	Weekly	No
3. Home Toilet	Family Member	Daily	Yes

I. Why should no work be considered 'small' or 'dirty'? Explain using ideas from the chapter.

Answer: No work should be considered small or dirty because every job is necessary for society to function smoothly. Cleaning work is just as important as teaching, farming or driving. In Gandhiji's Ashram, everyone cleaned toilets to show that all work is equal. When we look down upon certain jobs, we disrespect the people who do them. The chapter teaches us that the dignity of labour means respecting every job and every worker, regardless of the type of work they do.

J. Case Study — A school decided that once a month, all students and teachers would clean classrooms and corridors together.

1. Why did students feel uncomfortable at first?

Answer: They were not used to doing cleaning work themselves.

2. What change happened in their behaviour later?

Answer: They became more responsible and respectful, and began keeping their classrooms clean every day.

3. What lesson does this case study teach?

Answer: Every job deserves respect, and shared work brings equality.

Chapter 17: Across the Wall

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(iii) Afsana Mansuri	Afsana Mansuri, a thirteen-year-old girl and the backbone of the Nagpada Basketball Association, is the main character of the chapter.

Q. No.	Answer	Reason
2	(iv) Basketball	The Nagpada girls, led by Afsana, played basketball and reached the semi-finals of a district-level tournament.
3	(iii) Gender and social barriers	The 'wall' in the chapter stands for the invisible rules, beliefs and expectations that decide what girls are and are not allowed to do.
4	(ii) She wanted Afsana to study and stay safe	Afsana's mother, who worked hard washing utensils, wanted her daughter to focus on studies and remain safe rather than play basketball.

B. Why were people curious when the girls started playing?

Answer: People were curious because the Nagpada girls were the first girls' basketball team to practise on that ground. Many had never seen girls play basketball before, so they stopped to watch, whispered among themselves, and doubted whether girls could really play the game.

C. How did teamwork help the girls?

Answer: Teamwork helped the girls trust each other, understand one another's strengths and weaknesses, and support each other during difficult moments. Even after a discouraging experience in Sholapur, they learned that a match cannot be won alone, and their strong bond as a team made their performance better.

D. What is gender bias?

Answer: Gender bias is the unfair belief that certain activities, freedoms or opportunities are meant only for boys or only for girls, rather than being open equally to everyone regardless of gender.

Additional Questions

A. Explain the difficulties faced by the girls even today.

Answer: Even today, girls are expected to return home early, help with household work, and follow social rules that restrict their freedom, while boys are usually given more freedom to move around. Despite these challenges, the girls continue to play and prove their abilities.

B. Describe the role of the coach in the girls' success.

Answer: Coach Noor Khan trained the girls with strict discipline, treated them equally regardless of gender, and encouraged teamwork. He reminded them to think of themselves simply as players, and his belief in them helped the girls gain confidence and win the respect of others.

C. Why were people surprised to see the girls playing basketball?

Answer: People were surprised because society believed that basketball was a game only for boys, and that girls should not play such physical, outdoor games.

D. How did Coach Sir motivate the girls?

Answer: Coach Sir motivated the girls by training them strictly, encouraging discipline and daily practice, and telling them that on the court they should think of themselves only as players, not as girls or boys.

E. What difficulties did the girls face at home?

Answer: At home, the girls were expected to help with household work, return home early, and follow social restrictions that limited their time and freedom to play.

F. What lesson did the girls learn from their match in Sholapur?

Answer: From the difficult experience in Sholapur, where other teams treated them unfairly, the girls learned that unity and cooperation are the strongest qualities of a team.

G. Why is teamwork important in sports?

Answer: Teamwork is important in sports because no single player, however skilled, can win a match alone. Success comes from players understanding, supporting and cooperating with one another.

H. Fill in the blanks in the table by identifying the correct barrier and its suitable solution.

Student's Observation — answers may vary. A sample answer is given below.

Situation	Barrier	Solution
1. Girls are not allowed to play	Gender bias / social restrictions	Encouragement from family, coaches and friends
2. Lack of support	No one to guide or believe in them	Support from a coach, family members or teammates
3. Team conflicts	Misunderstanding or blame among players	Talking things out, trusting and forgiving each other
4. Fear of failure	Lack of confidence in one's own ability	Practice, encouragement, and celebrating small successes

I. Case Study — Riya lives in a crowded area where boys play cricket every evening.

1. What problem did Riya face?

Answer: Riya faced gender restrictions and a lack of opportunity, as she was told to stay home and help with housework instead of playing sports.

2. What inspired Riya to speak up?

Answer: Reading about Afsana's story inspired Riya to speak up and ask her parents to let her join a local sports club.

3. What value did Riya show?

Answer: Riya showed courage and determination.

4. What lesson does this case teach us?

Answer: It teaches us that speaking up and persistence can bring about positive change.

Chapter 18: No Place for Us?

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(iii) Difference between promises and reality	Officials had promised schools, electricity, hospitals and easy travel in Sinduri, but life there turned out to be difficult, costly, and painful, which disappointed Jatrya most.
2	(ii) Sidya working in a fish factory	Sidya, a young boy, worked for hours every morning in a fish factory to support his family, which is an example of child labour.
3	(iv) All of the above	The people of Sinduri saw the Khedi villagers as poor newcomers who spoke differently, so they were mocked and treated as outsiders for all these reasons.
4	(ii) Forest and river	Khedi village was surrounded by thick green forests, hills and a flowing river, which shaped the community's entire way of life.
5	(iii) Education of his children	Even after repeated hardship and displacement, Jatrya's strongest hope remained his dream of educating his children for a better future.

B. Why did Jatrya feel lonely even in crowded places?

Answer: Jatrya felt lonely even in crowded Mumbai because everything around him felt strange and unfamiliar. He had lost his community, culture and sense of belonging from Khedi, and the busy, noisy city could not replace the close, caring relationships he once had in his village.

C. How did displacement affect the elders of Khedi?

Answer: Displacement deeply saddened the elders of Khedi, who did not want to leave the land and forests their ancestors had lived on for generations. The pain of losing their home affected them so much that Jatra's own parents passed away before they could settle into their new life in Sinduri.

D. What role did nature play in the lives of people in Khedi?

Answer: Nature was at the centre of life in Khedi. People farmed the land, fished in the river, and collected fruits, roots, firewood and herbs from the forest. The sounds of birds, trees and flowing water filled their daily life, and children learned traditional skills like recognising birds and making pots from clay found in nature.

Additional Questions

A. Why was city life expensive for Jatra's family?

Answer: City life was expensive for Jatra's family because they had to pay money for things that were once freely available in the village, such as water, food, medicines and electricity.

B. How did migration affect children like Sidya and Jhimli?

Answer: Migration forced children like Sidya to work at a young age to support the family, while also struggling to adjust to new schools and languages. They lost the stable, carefree childhood that children in Khedi once enjoyed.

C. Explain how displacement affected Jatra's family emotionally and socially.

Answer: Displacement caused deep emotional pain to Jatra's family. They lost their home, community and sense of belonging. In Sinduri and later in Mumbai, they faced loneliness, disrespect and insecurity. Social ties that once held their village together were broken, and they were treated as outsiders in their new surroundings. This loss of dignity affected both the adults and the children of the family.

D. Compare life in Khedi village and life after migration.

Answer: Life in Khedi was peaceful, close to nature, and based on cooperation, where people shared work and celebrations as one community. After migration, life became crowded, costly and uncertain; nature was replaced by pollution and cramped housing, and the warm community support of the village was replaced by isolation and daily struggle.

E. 'Development should not destroy lives.' Explain this statement using the chapter.

Answer: The dam built across the river brought development benefits to some, but it destroyed villages like Khedi, submerging the land under water. Families lost their homes, land, culture and livelihood, and the promises made to them were not fulfilled. The chapter shows that development carried out without care for people causes great suffering, and true development should protect human dignity and provide fair rehabilitation.

F. How does education become a symbol of hope in the chapter?

Answer: Jatra himself never had the chance to go to school, but he dreamed of educating his children so they could have a better future. Education represents stability, dignity and hope in the chapter, and despite repeated poverty and migration, it remained Jatra's strongest and most enduring hope.

G. What lessons does the chapter teach us about migration and humanity?

Answer: The chapter teaches us to feel empathy for displaced people and to respect their struggles rather than judge them. It reminds us that migration is often forced rather than a choice, and that society must support such families with kindness instead of rejecting them as outsiders.

H. Why did children face problems in Sinduri school?

Answer: Children faced problems in Sinduri school because they had to struggle with a new language and received little support from teachers or the local community.

I. Complete the table showing differences between village and city life.

Sample Answer:

Life in Khedi	Life in the City
Close to nature	Crowded and polluted
Community living	Lonely and competitive
Traditional skills	Daily wage work

J. Case Study — Ramesh's village was cleared to build a highway.

1. Why did Ramesh's family move?

Answer: Ramesh's family moved due to a development project — a highway built through their village.

2. Name one problem they faced.

Answer: They struggled to find work and housing in the new town.

3. Which chapter does this situation relate to?

Answer: This situation relates to the chapter 'No Place for Us?'

Chapter 19: A Seed Tells a Farmer's Story

Teacher's Note: In the textbook, the first item under Multiple Choice Questions for this chapter appears to be a printing error — it repeats a question from Chapter 18 ('What made Jatrya feel most disappointed in Sinduri?') and the numbering restarts at 1 for the questions that actually belong to Chapter 19. The table below answers only the four questions that genuinely belong to this chapter.

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(iv) A bajra seed	The chapter is narrated by a small bajra seed that has been kept safe in a wooden box since 1940 and has witnessed years of change on Damjibhai's farm.
2	(iii) By adding neem leaves	Damjibhai kept the seeds safe in a wooden box and added neem leaves, which naturally protect stored grain from insects.
3	(iii) Wheat and cotton	Wheat and cotton fetched better prices in the market, so farmers gradually stopped growing traditional crops like bajra and jowar in favour of these cash crops.
4	(iii) Farming had become risky and stressful	Rising costs, loans, and reduced soil fertility made farming stressful and unprofitable, so Paresh chose to become a truck driver instead.

B. Who is the narrator of the chapter?

Answer: The chapter is narrated by a small bajra seed.

C. Name the farmer whose story is told in the chapter.

Answer: The chapter tells the story of Damjibhai, a farmer from Vangaam village in Gujarat, and later his son Hasmukh and grandson Paresh.

D. Where was the bajra seed born?

Answer: The bajra seed was born in Vangaam village in Gujarat, in a year of a very good bajra harvest.

Additional Questions

A. Why did Damjibhai save seeds every year?

Answer: Damjibhai saved seeds every year so that he could use good-quality seeds for the next season's crop and continue farming naturally, without depending on the market.

B. How was farming done earlier in the village?

Answer: Farming earlier was done together as a community, using traditional methods, animal power, saved seeds and natural resources such as cow dung manure.

C. Why did farmers stop growing bajra and jowar?

Answer: Farmers stopped growing bajra and jowar because crops like wheat and cotton fetched better prices in the market, making them more attractive to grow for profit.

D. Why did farming become expensive over time?

Answer: Farming became expensive over time due to the rising cost of market-bought seeds, chemical fertilisers, pesticides, electricity for pumps, and machines like tractors.

E. Why did Paresh choose not to become a farmer?

Answer: Paresh chose not to become a farmer because farming was no longer profitable; it involved heavy loans and financial stress, so he became a truck driver instead to help repay the debts.

F. Describe the traditional farming practices followed by Damjibhai.

Answer: Damjibhai followed natural farming methods rooted in tradition. He carefully saved the best seeds every year and used neem leaves to protect them from insects, depended on bullocks for ploughing, used cow dung as natural manure, and grew many different types of crops. Farming was carried out with the help of family and the wider community, rather than alone.

G. How did modern farming change the life of farmers?

Answer: Modern farming introduced machines, chemical fertilisers, pesticides and market-based cash crops. Although production and income increased at first, costs also rose sharply. Over time, soil fertility reduced due to repeated cropping and chemical use, loans piled up, and farming became stressful and risky rather than a stable way of life.

H. What message does the bajra seed want to give us?

Answer: The bajra seed warns us that forgetting traditional seeds and natural farming methods can harm farmers, soil health and food quality. It reminds us that progress should be balanced and sustainable, not just focused on short-term profit.

I. Complete the table showing changes in farming.

Sample Answer:

Earlier Farming	Modern Farming
Saved seeds	Bought seeds
Cow dung manure	Chemical fertilisers
Many crops	A few cash crops
Community help	Machine-based work

J. Case Study — Ramesh is a farmer in a small village who gradually shifted from traditional to modern farming methods.

1. Which traditional farming practice did Ramesh follow earlier?

Answer: He earlier saved seeds from his own crops and used cow dung manure in his fields.

2. Why did Ramesh's expenses increase?

Answer: His expenses increased because of the cost of machines, chemical fertilisers and pesticides.

3. What problem did Ramesh face after some years?

Answer: After some years, his soil became less fertile and he had to take loans to continue farming.

4. Why does this case study relate to the chapter?

Answer: It shows the real effects of changing farming practices over time and questions whether such change can truly be called progress, echoing the bajra seed's own story.

Chapter 20: Whose Forests?

A. Fill in the blanks.

No.	Statement	Answer
1	Suryamani teaches children in the _____.	forest
2	Forest people are also called _____.	adivasis
3	Torang means _____ in Kuduk.	jungle
4	The _____ decides forest protection under the law.	Gram Sabha
5	Jhoom farming allows land to _____.	rest / regain fertility

B. Who is Suryamani?

Answer: Suryamani is a forest woman from an adivasi community who grew up close to the forest, later studied and became the first girl from her village to complete a B.A., and went on to fight for forest rights and start Torang, a centre that keeps her community's culture alive.

C. What language do the children sing in?

Answer: The children sing in Kuduk, their own language.

D. Name the contractor who restricted forest access.

Answer: The contractor's name was Shambhu.

E. What is Torang?

Answer: Torang, meaning 'jungle' in Kuduk, is a centre opened by Suryamani at the age of 21, where children learn traditional songs, dances, herbal knowledge, bamboo craft and their own language, along with regular school education.

F. Which law protects forest people's rights?

Answer: The Right to Forest Act, 2007 (the Forest Rights Act) protects forest people's rights.

Additional Questions

A. Why is the forest called the children's classroom?

Answer: The forest is called the children's classroom because children learn about plants, animals, food and life directly from the forest through experience and observation, not from textbooks.

B. How did the forest support Suryamani's family?

Answer: The forest provided Suryamani's family with food, medicine, firewood, materials for making baskets and leaf plates, and work, meeting nearly all their daily needs.

C. Why were forest people afraid after the contractor arrived?

Answer: After the contractor Shambhu arrived, forest people were stopped from even picking up a single leaf, guards were posted, and people were threatened, which spread fear through the village and made daily activities difficult.

D. How did education change Suryamani's life?

Answer: Education helped Suryamani understand laws related to forest rights and gave her the confidence and knowledge to speak up and fight for her community's rights.

E. Why was Torang started?

Answer: Torang was started to keep adivasi culture, language and traditional knowledge alive among children, alongside their regular school education.

F. Explain the relationship between forest people and forests.

Answer: Forest people depend on forests for food, shelter, medicine and livelihood. In return, they protect forests by taking only what they need and saving the rest, passing this knowledge down from one generation to another. Forests are central to their culture and identity, and they see themselves as caretakers of the forest rather than its owners.

G. Describe the importance of the Forest Rights Act, 2007.

Answer: The Forest Rights Act, 2007 recognises the rights of people who have lived in forests for at least 25 years. It allows them to collect and use forest produce for their daily needs, protects them from being removed from their land without proper reason, and gives the Gram Sabha the power to make decisions about forest protection and use. It treats forest people as caretakers of nature, not as intruders.

H. How does education help in protecting forests and rights?

Answer: Education helps people understand laws, raise their voice against injustice, and challenge unfair restrictions. Suryamani used her education to understand forest rights laws and became a strong voice protecting both the forest and her community.

I. Complete the table by filling in the correct information based on the chapter 'Whose Forests?'

Sample Answer:

Aspect	Description
Forest	A living home providing food, shelter, medicine and livelihood
Adivasi life	Closely connected to forests for survival and culture
Torang	A centre started by Suryamani to teach culture, language and education
Forest Rights Act	The law giving forest people rights over forest land and produce
Jhoom farming	Traditional farming that allows the soil to rest and regain fertility

J. Case Study — Raju lives in a forest village where outsiders stopped villagers from entering the forest.

1. Why did the villagers protest?

Answer: They protested because they were stopped from using the forest resources — leaves, fruits and herbs — that they needed for their daily life.

2. Which law supports the villagers' rights?

Answer: The Forest Rights Act, 2007 supports the villagers' rights.

3. Who should protect and manage the forest?

Answer: The local Gram Sabha should protect and manage the forest.

4. What lesson does this case teach?

Answer: It teaches that education and unity help communities protect their rights and their natural resources.

Chapter 21: Like Father, Like Daughter

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(ii) It sounded like her father	Ashima's mother laughed because Ashima's sneeze sounded exactly like her father's, and for a moment she thought it was him.
2	(iii) Her mother	Nilima's mother gently explained that the visitor was actually her cousin sister Kiran, and how family relationships connect across generations.
3	(iii) They grew up in different environments	Although Saroja and Suvasini looked alike, Saroja grew up in a musical home in Pune while Suvasini's father was a karate teacher in Chennai, so their surroundings shaped different skills.
4	(ii) Polio	The doctor explained that polio is caused by a virus, not something passed down from parent to child, so it is not inherited.

Q. No.	Answer	Reason
5	(iii) Pea plants	Gregor Mendel used pea plants, which were easy to grow and showed clear differences in traits, to study how features are passed from parents to offspring.

B. Who sneezed like her father in the chapter?

Answer: Ashima sneezed exactly like her father.

C. Who were the twins mentioned in the chapter?

Answer: Saroja and Suvasini, who looked so alike that people often confused them, were the twins mentioned in the chapter.

D. What relation is Nilima to Samir?

Answer: Nilima is Samir's mausi (maternal aunt), even though Nilima herself is a child, because Samir's mother Kiran is Nilima's cousin sister.

E. Which illness did Satti suffer from as a child?

Answer: Satti suffered from polio as a child.

Additional Questions

A. Why did Ashima's sneeze make her mother laugh?

Answer: Ashima's sneeze made her mother laugh because Ashima sneezed exactly like her father, and for a moment her mother thought it was him.

B. Why was Nilima surprised to know she was Samir's mausi?

Answer: Nilima was surprised because she was younger than expected for such a relationship and did not realise that someone her age could already be called an aunt.

C. How were Saroja and Suvasini different despite looking alike?

Answer: Although they looked exactly alike, Saroja and Suvasini grew up in different environments and learned different skills — Saroja learned music in Pune, while Suvasini learned karate in Chennai.

D. Explain how the environment affects a person's abilities and interests.

Answer: The environment plays an important role in shaping skills and interests. Although Saroja and Suvasini looked alike, Saroja learned music because she grew up in a musical environment, while Suvasini learned karate because her father was a karate teacher. This shows that surroundings, not just family traits, strongly influence what a person learns and becomes good at.

E. Describe Mendel's experiment with smooth and rough seeds.

Answer: Mendel crossed pea plants that always produced smooth seeds with plants that always produced rough seeds. In the first generation, all the seeds were smooth, and the rough trait did not appear at all. When these plants were allowed to self-pollinate, the second generation showed both smooth and rough seeds, proving that the rough trait had not disappeared but had remained hidden. This showed that smooth seeds are dominant and rough seeds are recessive.

F. Match the following.

Column A	Column B	Matched Answer
1. Ashima	(b) Sneezes like father	1 → b
2. Nilima	(c) Samir's mausi	2 → c
3. Saroja	(d) Learned music	3 → d
4. Polio	(e) Not inherited	4 → e
5. Gregor Mendel	(a) Pea plant experiments	5 → a

G. Fill in the blanks using information from the chapter.

Sample Answer:

Situation	Reason
Ashima sneezes like her father	Inherited family trait
Nilima is Samir's mausi	Family relationships change across generations
Saroja learned music	Shaped by environment and surroundings
Suvasini learned karate	Her father was a karate teacher

H. What makes each person unique?

Answer: A combination of inherited family traits and individual life experiences makes each person unique.

I. Case Study — Riya and Diya are twins who grew up in different surroundings.

1. Why do Riya and Diya have different interests?

Answer: They have different interests because they grew up in different environments — Riya in a village helping with farming, and Diya in a city attending dance classes.

2. What factor influenced their skills more — family or environment?

Answer: The environment influenced their skills more than family traits did.

3. Which example from the chapter is similar to this case?

Answer: The example of Saroja and Suvasini, who looked alike but developed different skills due to their surroundings, is similar to this case.

4. What does this case teach us about human development?

Answer: It teaches us that both family and surroundings together shape a person, and that even people who look identical can grow into very different individuals depending on their environment.

Chapter 22: On the Move Again

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(iii) Due to a lack of work in the village	Farming in Dhanu's village depends completely on rainfall, and once the fields dry up after Dussehra, there is no work for six months, forcing families to migrate.
2	(iii) Mukadam	The mukadam reads out loan details to families each year and decides where they will go to work, lending them money that binds them to him.
3	(iii) Sugarcane	Sugarcane fields have irrigation facilities, so they provide work for migrant families during the months when there is no farming work in their own village.
4	(iii) Loss of education	Migrant children like Dhanu leave behind their school and friends every year, which repeatedly disrupts their education and learning.
5	(iii) To encourage him to study	Dhanu's mami buys him notebooks and pencils because she believes education can break the cycle of migration and give him a better future.

B. When do Dhanu's family members leave the village every year?

Answer: Dhanu's family members leave the village every year after the Dussehra festival.

C. Who gives loans to the villagers?

Answer: The mukadam gives loans to the villagers.

D. For how many months do families stay away from the village?

Answer: Families stay away from the village for about six months.

Additional Questions

A. Why is there no work in Dhanu's village for six months?

Answer: There is no work for six months because farming in the village depends completely on rainfall, and without irrigation facilities like canals or wells, the fields remain dry and empty once the monsoon season ends.

B. Why do families borrow money from the mukadam?

Answer: Families borrow money from the mukadam to survive during the months when there is no farming work available in the village.

C. What kind of houses do migrant families live in near sugarcane fields?

Answer: Migrant families live in temporary huts built from dry leaves and plastic sheets, with no electricity, clean water or toilets.

D. Explain the cycle of migration faced by Dhanu's family.

Answer: The lack of rain leads to no farming work in the village. To survive, families take loans from the mukadam. To repay this loan, they must migrate to sugarcane fields and work hard cutting and bundling cane. After months of labour, only part of the loan is repaid, forcing them to take loans again the next year. This cycle repeats year after year, leaving little room for savings or stability.

E. Describe the problems faced by children of migrant families.

Answer: Children of migrant families miss school for months, lose contact with friends, and live in unsafe, temporary conditions near the fields. They often quietly help their parents with work and do not get proper rest, play or education.

F. Do you think children should work to support their families? Why or why not?

Answer: Children should be able to focus on studying rather than working to support their families. It is the responsibility of adults and the government to ensure that families have enough work and support, so that children like Dhanu do not have to sacrifice their education and childhood.

G. Case Study — Ramesh is a 12-year-old boy from a village that depends only on rainfall for farming.

1. Why does Ramesh's family migrate every year?

Answer: They migrate every year because there is no work in the village once the farming season ends.

2. What forces the family to take loans?

Answer: The lack of income during the long dry months forces the family to take loans to survive.

3. How does migration affect Ramesh's education?

Answer: Migration prevents Ramesh from attending school regularly, and his education is repeatedly interrupted.

4. Who stays back in the village when the family migrates?

Answer: Ramesh's grandmother stays back in the village and depends on neighbours for help.

5. What hope do Ramesh's parents have for his future?

Answer: Ramesh's parents hope that education will help him complete his studies and find a better, more stable life.

Chapter 23: Madhya Pradesh — A State Full of Wealth

A. Multiple Choice Questions

Q. No.	Answer	Reason
1	(iii) it is located in the centre of India	Madhya Pradesh lies almost in the centre of the country, which is why it is known as the 'Heart of India.'
2	(iv) Soyabean	Madhya Pradesh is the largest producer of soyabean in India, which has earned it the title 'Soya State.'
3	(iii) Narmada	The Narmada, which flows from east to west across the state, is described as the lifeline of Madhya Pradesh.
4	(iii) Panna	Panna district is the major area of diamond production, and Madhya Pradesh ranks first in diamond production in India.
5	(iii) Bhedaghat	Bhedaghat is famous for its white marble rocks and the Dhuandhar Waterfall on the River Narmada.

B. Fill in the blanks.

No.	Statement	Answer
1	Madhya Pradesh is also called _____.	Hindustan ka Dil / Heart of India
2	The geographical centre of India is located in _____ district.	Katni
3	Crops grown in the winter season are called _____ crops.	Rabi
4	_____ is one of the major coal-producing areas of the state.	Singrauli
5	Cows are respected and called _____.	Gau Mata

Additional Questions

A. Why is Madhya Pradesh called the 'Heart of India'?

Answer: Madhya Pradesh is called the 'Heart of India' because it is located almost in the centre of the country.

B. Which river is called the lifeline of Madhya Pradesh?

Answer: The Narmada River is called the lifeline of Madhya Pradesh.

C. What are food crops? Give two examples.

Answer: Food crops are crops grown mainly for eating. Wheat and rice are two examples of food crops grown in Madhya Pradesh.

D. How do animals help farmers?

Answer: Animals help farmers by providing milk, curd, butter and ghee, giving cow dung that is used as manure and fuel, and by working as bullocks for ploughing fields and transport.

E. Describe the landforms of Madhya Pradesh.

Answer: Madhya Pradesh has a variety of landforms, including plateaus, plains, valleys and hills. Its five main plateaus, such as the fertile Malwa Plateau, are rich in minerals and suitable for farming, while valleys formed along rivers are fertile and support agriculture. These landforms together influence the state's climate, rivers, soil fertility and human settlements.

F. Explain the agricultural wealth of Madhya Pradesh.

Answer: Agriculture is the main occupation of the people of Madhya Pradesh. Its fertile soil, rivers and suitable climate help farmers grow food crops like wheat, rice, gram and maize, as well as commercial crops such as soyabean, cotton and mustard. The state is the largest producer of soyabean in India, and about 48% of its total land area is under cultivation, making agriculture a major source of livelihood.

G. What is mineral wealth? Name important minerals of Madhya Pradesh.

Answer: Mineral wealth refers to natural minerals found deep inside the earth that are extracted through mining and used in industries. Madhya Pradesh is rich in minerals such as coal, copper, iron, limestone and diamond, and it ranks first in diamond production in India.

H. Describe the tourism wealth of Madhya Pradesh.

Answer: Madhya Pradesh has historical monuments, world-famous temples, hill stations, waterfalls and national parks. Places like Khajuraho, Sanchi, Pachmarhi, Bhedaghat, Bandhavgarh and Ujjain attract tourists from India and abroad. Tourism creates jobs for local people, helps preserve historical monuments and forests, and brings income that supports the state's development.

I. Case Study — Ramesh lives in a village in Madhya Pradesh where his family grows soyabean and wheat.

1. Which type of wealth supports Ramesh's family most?

Answer: Agricultural wealth supports Ramesh's family most, since they grow soyabean and wheat on their fields.

2. How does the river help farming?

Answer: The nearby river provides water for irrigation, which helps the crops grow well.

3. Which animal wealth is mentioned in the case?

Answer: Cows and bullocks are the animal wealth mentioned in the case.

4. Name one tourist place mentioned and its importance.

Answer: Pachmarhi is mentioned — it is a peaceful hill station known for its forests, waterfalls, caves and natural beauty.