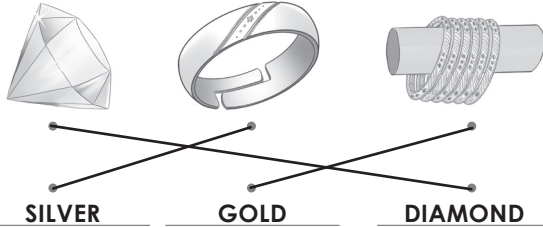


# Answers

## Theme 1: What Makes Our Land Chapter 1: Rocks and Minerals

### Main Coursebook

#### I am ready



#### Icebreaker:

Gold

#### In-text Question

1. Sedimentary rocks
2. Metamorphic rocks

#### In-text Question

1. Gold
2. Coal

#### I am a learner

- A. 1. b    2. a    3. c    4. b    5. a
- B. 1. True    2. False    3. False  
4. True    5. False
- C. 1. Minerals are natural non-living substances present in different quantities, qualities and arrangements within rocks.
2. Diamond
  3. The minerals from which metals can be profitably obtained are called ores.
- D. 1. The differences between igneous, sedimentary and metamorphic rocks are as follows:

**Igneous rocks:** These rocks are formed by the cooling and hardening of hot liquid rock material, called magma.

Example: granite

**Sedimentary rocks:** These rocks are formed from pebbles, sand, mud, rocks or clay, deposited in the ocean and brought to the shore by flowing water or floating ice.

Example: shale

**Metamorphic rocks:** These rocks are formed by transformation of already existing rocks through a process called metamorphism.

Example: marble

2. The differences between metallic and non-metallic minerals are as follows:

Metallic minerals	Non-metallic minerals
These are used to obtain metals. Examples include gold, platinum, iron and zinc.	These include fossil fuels or other valuable resources that are found underground. Examples include coal and petroleum.

#### I am a thinker

Accept all relevant responses.

#### I am an all-rounder

##### A. English:

1. work
2. silver fork

##### B. Maths: DCCXVII

##### C. Social Studies: Plateaus

### Students' Worksheets

#### Worksheet 1

- A. 1. minerals    2. non-living    3. landforms  
4. Igneous    5. magma
- B. 1. →b    2. →c    3. →d  
4. →a    5. →e
- C. 1. False    2. False    3. True  
4. True    5. True

#### Worksheet 2

- A. 1. Limestone    2. Sedimentary  
3. Conglomerate    4. shells  
5. pile up
- B. 1. GRANITE  
2. IGNEOUS  
3. OBSIDIAN  
4. SEDIMENTARY  
5. METAMORPHIC
- C. 1. True    2. True    3. False  
4. True    5. True

#### Worksheet 3

- A. 1. Rocks are made up of minerals. These may be made up of one or more minerals.
2. Magma is a hot liquid rock material that hardens and cools to form igneous rocks.
  3. Minerals are natural non-living substances present in different

quantities, qualities and arrangements within rocks.

- Igneous rocks, sedimentary rocks and metamorphic rocks.
- Metamorphic rocks form by transformation of already existing rocks through a process called metamorphism.

- B. 1. →c      2. →a      3. →e  
4. →b      5. →d
- C. 1. False      2. True      3. True  
4. True      5. True

#### Worksheet 4

- A. 1. mines      2. black gold  
3. metals      4. precious  
5. Fossil fuels
- B. 1. COAL      2. METALLIC  
3. PETROLEUM      4. HAEMATITE  
5. NON-METALLIC
- C. 1. No      2. Yes  
3. No      4. Yes  
5. No

#### Teacher's Worksheets

##### Worksheet 1

- Igneous rocks are formed by the cooling and hardening of hot liquid rock material, called magma. This magma is pushed upwards by the pressure of other rocks around it.
- We should use coal, oil and petrol wisely. We can substitute them with inexhaustible natural resources, such as water, air and the Sun.
- Slate is commonly used for flooring, roofing and wall cladding.
- Sedimentary rocks are formed from pebbles, sand, mud, rocks or clay, deposited in the ocean and brought to the shore by flowing water or floating ice.
- Metamorphic rocks form by transformation of already existing rocks through a process called metamorphism.

##### Worksheet 2

- A. 1. →b      2. →d      3. →e  
4. →c      5. →a
- B. 1. It is used for making bricks and tiles.  
2. It is used for flooring, ornamental stones or gravestones.

- It is used for making cutting tools.
- It is used for filling materials in roads and construction.
- It is used for teeth polishing by dentists.

## Theme 1: What Makes Our Land

### Chapter 2: Force and Energy

#### Main Coursebook

##### I am ready



PULL



PUSH



PUSH

##### Icebreaker: STATIONARY

##### In-text Question

- Muscular force
- Buoyant force

##### In-text Question

- True
- True

##### I am a learner

- A. 1. b      2. a      3. b      4. c      5. a  
B. 1. True      2. False      3. False  
4. True      5. True
- C. 1. It is a push or pull when applied on any object tends to change the state, speed, direction and shape of the object.  
2. Pull  
3. It is the energy that is stored in batteries.
- D. 1. **Gravitational force:** Every object in this universe attracts other objects with a force known as gravitational force. When two bodies with some mass come closer to each other, they pull and attract each other. Gravitational force is always an attractive force. We are able to stand, walk, sit and be on the Earth's surface due to the gravitational force exerted by the Earth on our body.

**Buoyant force:** When any object floating on water is pushed down, the water exerts an upward push on the object. This upward push is called upthrust. Human beings experience this force while entering a swimming pool.

2. **Mechanical energy:** It is the energy attained by the bodies on which work is being done.

**Solar energy:** It is the form of energy obtained from the Sun. It is a renewable source of energy and does not cause any pollution to the environment.

**Geothermal energy:** It is the energy that is derived from within the Earth.

**Wind energy:** It is the energy produced by moving air or wind. The kinetic energy of wind is converted into mechanical energy using wind turbines. The mechanical energy can further be transformed into electricity with the help of generators.

**Chemical energy:** It is produced when different substances react with each other to form new substances.

**Electrochemical energy:** It is the energy that is stored in batteries.

**Heat** is an energy that is transferred from one body to another due to difference in temperature of the two bodies.

**Light** is another form of energy that travels in straight lines pointed away from the source towards the viewer.

**Sound** is also a form of energy produced due to the vibrations of different bodies.

**Electrical energy** is generated due to the movement of electrical charges.

### I am a doer

Accept all relevant responses.

### I am an all-rounder

#### A. English:

1. homework                      2. artwork

#### B. Maths: ₹1,36,103

#### C. Social Studies: Due to less frictional force on plains.

## Students' Worksheets

### Worksheet 1

- A. 1. force                                      2. Muscular  
3. contact                                      4. gravitational  
5. attractive
- B. 1. False                      2. True                      3. False  
4. True                      5. False
- C. 1. →b    2. →e    3. →c    4. →d    5. →a

### Worksheet 2

- A. 1. Frictional                      2. mechanical  
3. buoyant                      4. Energy  
5. Work

- B. 1. MUSCULAR                      2. GRAVITATIONAL  
3. FRICTIONAL                      4. MECHANICAL  
5. UPTHURST

- C. 1. →e    2. →a    3. →b    4. →c    5. →e

### Worksheet 3

- A. 1. It is the force that comes into play when we use muscles of our body to push or pull something.  
2. It is the force of attraction between every two objects in the universe.  
3. It is the force that opposes the motion of an object moving on a surface.  
4. It is a contact force that acts between two bodies.  
5. It is an upward push exerted by water on any object when it is pushed down in water.
- B. 1. gravitational force    2. muscular force  
3. buoyant force    4. frictional force  
5. mechanical force
- C. 1. Yes    2. No    3. Yes    4. No    5. Yes

### Worksheet 4

- A. two; Kinetic; stationary position; solar; renewable
- B. 1. SOLAR                                      2. GEOTHERMAL  
3. CHEMICAL                                      4. ELECTROCHEMICAL  
5. ELECTRICAL
- C. 1. kinetic energy                      2. potential energy  
3. wind energy                      4. geothermal energy  
5. chemical energy

## Teacher's Worksheets

### Worksheet 1

A.



Pushing



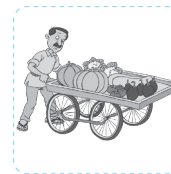
Pulling



Pushing



Pulling



Pushing



Pulling



- B. 1. movement                      2. kinetic  
3. stationary                      4. Chemical

### Worksheet 2

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

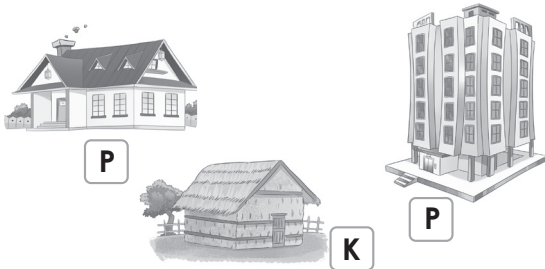
- B.
1. When any object floating on water is pushed down, the water exerts an upward push on the object. This upward push is called upthrust.
  2. Wind energy is the energy produced by moving air or wind. The kinetic energy of wind is converted into mechanical energy using wind turbines. The mechanical energy can further be transformed into electricity with the help of generators.
  3. Every object in this universe attracts other objects with a force known as gravitational force. When two bodies with some mass come closer to each other, they pull and attract each other. Gravitational force is always an attractive force.

## Theme 2: What Helps Us Survive

### Chapter 3: Houses Around Us

#### Main Coursebook

I am ready



Icebreaker: HOUSE

In-text Question

1. Yes
2. No

In-text Question

1. False
2. True

I am a learner

- A. 1. b    2. b    3. c    4. c    5. b
- B. 1. True    2. False    3. False  
4. True    5. False
- C. 1. Houses that have flat roofs and thick walls are found here.  
2. To keep the houses safe from floods and heavy rainfall.  
3. Concrete, glass and iron.
- D. 1. Houses in areas with hot climates are built with bricks and stones. Houses in hilly areas are made up of bamboo and

wood. Places that are more likely to experience earthquakes have wooden houses. Huts are made up of muds, bamboo and palm leaves.

2. Before constructing a house, we should decide the money or the budget. We should consider space and needs of people. We should hire an architect to plan the house accordingly.

After constructing a house, regular cleaning and maintenance, periodic painting of the house and proper cleaning of the area surrounding the house should be done.

I am a thinker

Accept all relevant responses.

I am an all-rounder

A. English

1. love, happiness; abstract nouns
2. a troop of monkeys; collective noun

B. Maths: 1, 2

C. Social Studies: Wooden

#### Students' Worksheets

Worksheet 1

- A. 1. hot    2. thick    3. damp  
4. stilts    5. ground
- B. 1. False    2. True    3. False  
4. True    5. True
- C. 1. →b    2. →a    3. →d    4. →c    5. →e

Worksheet 2

- A. 1. stones    2. hilly  
3. earthquakes    4. Kuccha  
5. Huts
- B. 1. FLAT ROOFS    2. DAMP CLIMATE  
3. SLOPING ROOF    4. RAINFALL  
5. FIREPLACE
- C. 1. C    2. I    3. C    4. C    5. I

Worksheet 3

- A. 1. design    2. temporary  
3. big    4. budget  
5. architect
- B. 1. BRICKS    2. STONES    3. BAMBOO  
4. WOOD    5. PALM LEAVES
- C. 1. True    2. False    3. False  
4. True    5. True

Worksheet 4

- A. 1. Flat    2. Thick    3. Sloping

4. Fireplace 5. Brick
- B. needs, plan, drainage, sunlight, well-plastered
- C. 1. BUDGET 2. DRAINAGE  
3. VENTILATION 4. ARCHITECT  
5. MAINTENANCE

## Teacher's Worksheets

### Worksheet 1

- A. 1. FIREPLACE 2. SLOPING  
3. EARTHQUAKE 4. TEMPORARY  
5. ARCHITECT
- B. 1. Climate, building material and budget.  
2. Houses in hilly areas are made up of bamboo and wood as these materials are easily available there.  
3. Regular cleaning, periodic painting and maintenance.

### Worksheet 2

- A. 1. hot 2. earthquake  
3. palm 4. well-plastered  
5. periodic
- B. 1. F 2. F 3. F 4. T 5. F

## Theme 2: What Helps Us Survive

### Chapter 4: Communicable and Non-communicable Diseases

## Main Coursebook

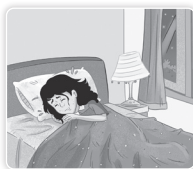
### I am ready



S



H



S

Icebreaker: Fever

### In-text Question

1. True 2. True

### In-text Question

1. Yes 2. No

### I am a learner

- A. 1. b 2. a 3. a 4. a 5. a  
B. 1. False 2. True 3. False

4. False 5. True

- C. 1. It is a condition when our body is not able to function properly.  
2. Communicable disease.  
3. Night blindness and scurvy.
- D. 1.

**Communicable diseases:** These diseases are transmitted from one person to another.

These diseases are not passed from one person to another.

These diseases are also known as infectious or transmissible diseases.

Examples include cold, polio and measles.

**Non-communicable diseases:** These diseases are also known as chronic diseases.

Examples include cancer, goitre and rickets.

2. Communicable diseases are transmitted through the following ways:

- i. **Through direct contact:** Diseases that are caused by hand-to-hand contact with the infected person or by using the items contaminated by the infected person. Examples are scarlet fever and common cold.
- ii. **Through infected food and water:** Insects, such as cockroaches and flies, carry germs and result in the contamination of food and water, as and when they come in contact with it. Examples are cholera and typhoid.
- iii. **Through the air we breathe:** Diseases, such as whooping cough, scarlet fever and influenza, spread when germs get transmitted from the infected person to another person via air.
- iv. **Through insects:** Yellow fever, malaria, dengue and plague spread through bugs, mosquitoes and sandflies.
- v. **Through carriers:** Some diseases are spread through completely healthy individuals. In such cases, the carriers do not show any symptoms or are affected in any way by the germs present inside their bodies. One such example is AIDS caused by the HIV.

### I am a doer

Accept all relevant responses.

### I am an all-rounder

- A. **English:**

1. hatch                                 2. patch

**B. Maths**

Factors of 15: 1, 3, 5, 15

Factors of 16: 1, 2, 4, 8, 16

**C. Social Studies:** Typhoid, Cholera

**Students' Worksheets**

**Worksheet 1**

- A. 1. function  
 2. Deficiency  
 3. non-communicable  
 4. Non-communicable  
 5. Communicable
- B. 1. False             2. False             3. True  
 4. False             5. True
- C. 1. →b             2. →c             3. →d  
 4. →e             5. →a

**Worksheet 2**

- A. 1. Non-communicable  
 2. Vitamin A  
 3. Beriberi  
 4. Vitamin C  
 5. Rickets
- B. 1. COMMUNICABLE  
 2. NON-COMMUNICABLE  
 3. DEFICIENCY  
 4. CHRONIC  
 5. INFECTIOUS
- C. 3

**Worksheet 3**

- A. 1. A communicable disease is the one that is transmitted from one person to another.  
 2. A non-communicable disease is the one that is not passed from one person to another.  
 3. Cholera, jaundice and typhoid.  
 4. It is a process in which milk is heated at an elevated temperature and then cooled down rapidly. This process is used to kill the bacteria present in milk.  
 5. It is a method to protect our body by providing immunity against diseases.
- B. 1. Non-communicable diseases are also called chronic diseases.  
 2. Scurvy is caused by deficiency of Vitamin C.  
 3. Common cold spreads through direct contact.

4. Dengue is caused by a virus.  
 5. AIDS is an immunity disorder caused by HIV virus.

- C. 1. No                     2. Yes                     3. No  
 4. No                     5. No

**Worksheet 4**

- A. infected; water; cockroaches; contamination; Improper
- B. 1. POLIO                     2. TYPHOID  
 3. INFLUENZA                 4. MALARIA  
 5. DENGUE
- C. 1. papaya, tomato   2. meat, cereals  
 3. egg yolks, mushrooms  
 4. seafood, yogurt  
 5. dates, spinach

**Teacher's Worksheets**

**Worksheet 1**

- A. 1. Scurvy                     2. Vitamin B  
 3. Anaemia                     4. Iodine  
 5. Rickets                     6. Scarlet fever
- B. 1. b iii                     2. e iv                     3. d i  
 4. c v                     5. a ii

**Worksheet 2**

- A. 1. A deficiency disease is caused due to deficiency of nutrients, such as vitamins and minerals.  
 2. Chronic diseases are not passed from one person to another.  
 3. Infectious diseases are transmitted from one person to another.  
 4. Cholera, typhoid, jaundice and diarrhoea are caused by consuming infected food and water.  
 5. Yellow fever, malaria, dengue and plague spread through insects.
- B. 1. i. All the items used frequently by a patient, such as clothes, towel should be regularly disinfected by washing in boiling water.  
 ii. Children suffering from any communicable disease should refrain from going to school until they recover fully.
2. Vaccination is a method to protect our body by providing immunity against diseases. Vaccines are available for typhoid, tetanus and cholera.



- A. 1. It is the outermost covering of the seed.  
 2. It is a tissue present inside the seeds that provides nourishment to the young seedling.  
 3. It is the nutrition-providing part for growing embryo that is found within the seed.  
 4. Air, water and sunlight.  
 5. These are various natural factors that disperse the seeds away from the parent plant.
- B. 1. PEA  
 2. HIPTAGE  
 3. COCONUT  
 4. TAMARIND  
 5. DANDELION
- C. 1. True            2. True            3. False  
 4. False            5. False

#### Worksheet 4

- A. 1. Seed coat  
 2. Embryo  
 3. Endosperm  
 4. Cotyledon  
 5. Sunlight
- B. 1. AGENT                      2. WIND  
 3. WATER                      4. ANIMAL  
 5. EXPLOSION
- C. 1. No            2. Yes            3. No  
 4. Yes            5. No

### Teacher's Worksheets

#### Worksheet 1

- A. 1. T            2. T            3. F            4. T  
 5. T            6. T            7. F            8. F
- B. 1. b            2. d            3. a            4. c

#### Worksheet 2

- A. 1. Seed coat  
 2. Endosperm  
 3. Cotyledon  
 4. Germination  
 5. Leaves
- B. 1. The seeds require oxygen from air, water, sunlight or warmth to germinate.  
 2. Plants are stationary and unable to move on their own. As a result, all the seeds produced by the plant fall near the parent plant and cannot find sufficient space and other conditions

to grow.

3. Coconut has fibrous outer covering that can float on water. Lotus has spongy parts and hence, their seeds get dispersed through water.

## Theme 3: Different Yet Alike

### Chapter 6: Animals Around Us

#### Main Coursebook

#### I am ready



**Aquatic**

**Terrestrial**

**Both**

Terrestrial animals	Aquatic animals	Terrestrial as well as aquatic animals
Cow	Fish	Newts
Giraffe	Crab	Salamander

**Icebreaker:** Herbivore

#### In-text Question

1. False            2. True

#### In-text Question

1. Yes            2. No

#### I am a learner

- A. 1. c            2. c            3. c            4. a            5. c
- B. 1. False            2. True            3. False  
 4. True            5. False
- C. 1. These are the air holes present on the bodies on the insects and are used for breathing.  
 2. Forelimbs.  
 3. Emu, rhea and ostrich.
- D. 1. Microscopic organisms, such as *Paramecium* and *Amoeba* breathe through their body surface. Insects breathe through air holes, known as spiracles, present on their bodies. Animals, such as earthworms, breathe through their thin and moist skin. Some aquatic animals, such as fish, prawns and oysters, breathe through their gills. Amphibians, such as frogs, breathe through both their gills and lungs. A tadpole breathes through gills, whereas an adult frog breathes through lungs on land and through its moist skin in water.  
 2. The seasonal movement of animals from one place to another is called migration.



Eels migrate from river to sea and lay eggs there. After hatching of the eggs, the parent eels die and the baby eels travel back to the rivers.

**I am a doer:**

Accept all relevant responses.

**I am an all-rounder:**

**A. English:**

1. The forelimbs of birds are present in the form of wings that help them fly.
2. Every third animal in India lives in water.

**B. Maths:** Fifty-two point five zero

**C. Social Studies:** Polar bears and musk ox.

**Students' Worksheets**

**Worksheet 1**

- A. 1. breathing      2. water  
3. *Paramecium*      4. Insects  
5. gills
- B. 1. False      2. False      3. True  
4. False      5. True
- C. 1. →e    2. →d    3. →c    4. →a    5. →b

**Worksheet 2**

- A. 1. four      2. forelimbs    3. hindlimbs  
4. paddle-like    5. webbed
- B. 1. Almost all mammals have four limbs.  
2. Birds have wings to fly.  
3. Emu is a flightless bird.  
4. Humans use their lower limbs to walk.  
5. Animals migrate due to food, weather, shelter and water.
- C. 1. I      2. I      3. C      4. I      5. C

**Worksheet 3**

- A. 1. wings      2. feathers    3. hindlimbs  
4. flightless    5. plates
- B. 1. AQUATIC    2. INSECTS    3. BIRDS  
4. REPTILES    5. HUMANS
- C. 1. True      2. True      3. False  
4. True      5. False

**Worksheet 4**

- A. 1. Fish      2. Turtle      3. Cockroach  
4. Tortoise    5. Snake
- B. 1. LIMBS      2. FINS      3. WINGS  
4. PLATES      5. SCALES
- C. 1. Yes    2. No    3. Yes    4. Yes    5. Yes

**Teacher's Worksheets**

**Worksheet 1**

- A. 1. Amoeba    2. gills      3. Insects  
4. Amphibians    5. Fishes
- B. 1. Microscopic organisms breathe through body surface.  
2. Turtles have paddle-like limbs that help push water in the backward direction.  
3. The forelimbs of birds are present in the form of wings that help them fly.  
4. Earthworms breathe through their thin and moist skin.  
5. Almost all mammals have four limbs.

**Worksheet 2**

- A. 1. Microscopic animals breathe through their body surface.  
2. Aquatic animals are the animals that live in water. Fishes and turtles are examples of aquatic animals.  
3. A tadpole breathes through gills and an adult frog breathes through lungs on land and through its moist skin in water.  
4. The hindlimbs of birds are used for walking, hopping, perching and running.
- B. 1. Fishes—Fishes have fins that enable them to swim.

Birds—The forelimbs of birds are present in the form of wings that help them fly. The forelimbs of birds are used for walking, hopping, perching and running.

2. An insect breathes through air holes, known as spiracles, present on their bodies. A fish breathes through their gills.
3. The seasonal movement of animals from one place to another is termed as migration. Migratory fish, such as eels, migrate from river to sea and lay eggs there. After hatching of the eggs, the parent eels die and the baby eels travel back to the rivers. Some migratory insects, such as locusts, cause severe damage to crops, sometimes resulting in famine and starvation.

**Enrichment Activities**

- A. Try yourself  
B. Try yourself  
C. Try yourself  
D. Try yourself

## Revision Worksheet

A. 1. c      2. c      3. c      4. b      5. b

- B. 1. metals  
2. Heat  
3. vegetative propagation  
4. nutrients  
5. anaemia

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

D. 1. Igneous rocks      2. Ores  
3. Rickets      4. Goitre  
5. Architect

- E. 1. Electrical energy is generated due to the movement of electrical charges.  
2. The size and design of the house also depends on the budget. Small and temporary houses require less money, whereas large and big houses need larger amounts of money to be invested.  
3. Plants are stationary, and hence, unable to move on their own. As a result, all the seeds produced by the plant fall near the parent plant and cannot find sufficient space and other conditions to grow. Hence, they need external factors to spread the seeds far from the parent plant. This process of transfer of seeds away from the parent plant is known as the dispersal of seeds.

4. Reptiles, such as tortoise, crocodiles and lizards crawl, though they do have limbs. Snakes have plates that are attached to their ribs. While moving, these plates or scales act as feet and the ribs act as legs.

5. Vaccination is a method to protect our body by providing immunity against diseases. Different vaccines are available for different diseases, such as typhoid, tetanus, cholera, measles and hepatitis.

F. 1. Non-communicable diseases that are not passed from one person.

2. Diseases that are transmitted from one person to another are called communicable diseases.

3. An embryo is a immature plant that further grows into a new plant.

4. Humans use their lower limbs to stand and walk.

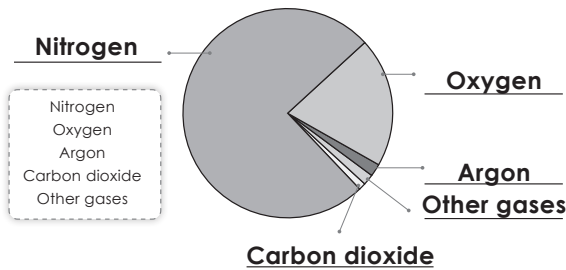
5. Houses in cold areas have fireplaces to warm the house from inside.

# Answers

## Theme 4: Living With Changes Chapter 7: Changes in Our Environment

### Main Coursebook

#### I am ready



**Icebreaker:** smoke

#### In-text Question

1. No                      2. Yes

#### In-text Question

1. False                    2. True

#### I am a learner

- A. 1. c    2. b    3. b    4. c    5. c
- B. 1. True    2. False    3. True  
4. False    5. True
- C. 1. These are the gases that prevent the escape of heat from our atmosphere, back into the space.  
2. Global warming.  
3. Carbon dioxide, methane and ozone.
- D. 1. The contribution of different greenhouse gases to the greenhouse effect are as follows:
- Carbon dioxide:** If the amount of carbon dioxide keeps increasing at the same rate, in the coming years, the Earth's temperature will increase to such levels that it will become inhabitable.
  - Methane:** It is produced by the decay of organic material and released in the atmosphere. It is also given out by the animals after they digest their food.
  - Water vapour:** This acts as the Earth's most abundant greenhouse gas. This contributes about 35–75 per cent to the greenhouse effect.
  - Ozone:** In the upper regions of the stratosphere, ozone helps absorb the

ultraviolet rays from the Sun. But in the regions near the ground, it acts as a greenhouse gas and a pollutant.

- v. **CFCs:** These are non-toxic chemicals, consisting of chlorine, fluorine and carbon atoms. CFCs destroy the ozone layer and trap heat in the lower parts of the atmosphere, thereby causing the warming of the Earth's surface.
2. The gradual rise in the temperature of the Earth is known as global warming. Following are some steps to control global warming:
- Careful use of electricity
  - Reducing the use of fossil fuels
  - Planting more and more trees
  - Using public transport in place of private ones

#### I am a thinker

Accept all relevant responses.

#### Holistic Box

##### A. English:

- Aloe vera is good for human skin and prevent wrinkles.
- Reshma threw the empty shoe box in the dustbin.

##### B. Maths: C: O, U

S: E, N, V, I, M, T

B: R

##### C. Social Studies: It results in global warming.

### Students' Worksheets

#### Worksheet 1

- A. 1. glasshouse                      2. Sun  
3. greenhouse                      4. warming  
5. carbon dioxide
- B. 1. False                      2. False                      3. True  
4. True                      5. False
- C. 1. →c    2. →d    3. →e    4. →b    5. →a

#### Worksheet 2

- A. 1. global warming                      2. rising  
3. reduce                      4. planting  
5. public
- B. 1. TEMPERATURE                      2. DROUGHT  
3. FLOODS                      4. ICE CAPS  
5. ENVIRONMENT
- C. 1. False                      2. True                      3. True  
4. False                      5. False

### Worksheet 3

- A. 1. Carbon dioxide 2. Methane  
3. Water vapour 4. Ozone  
5. Chlorofluorocarbons
- B. 1. Y 2. Y 3. Y 4. Y 5. Y
- C. 1. ATMOSPHERE  
2. DEFORESTATION  
3. GREENHOUSE EFFECT  
4. OZONE LAYER  
5. GLOBAL WARMING

### Teacher's Worksheets

#### Worksheet 1

- A. 1. Burning of fossil fuels and deforestation.  
2. Methane is produced by the decay of organic material and released in the atmosphere.  
3. Global warming results in elevated temperatures, increased droughts, rising ocean levels, loss of animal species, flooding of areas and melting of polar ice caps.  
4. Water vapour acts as the Earth's most abundant greenhouse gas. This contributes about 35–75 per cent to the greenhouse effect. Unlike other greenhouse gases, water vapour remains in the atmosphere for a shorter period of time.  
5. Careful use of electricity, reduce the use of fossil fuels, plant more and more trees and use public transport in place of private ones.  
6. The Kyoto Protocol is one such agreement that focuses on decreasing the emission of greenhouse gases in the environment. This protocol is an international agreement signed by 41 countries of the world.

#### Worksheet 2

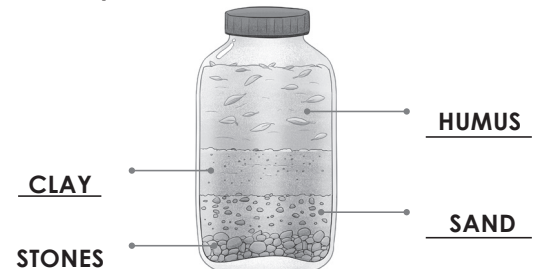
- A. winters, Sun, warm, walls, greenhouse
- B. 1. Deforestation leads to an increase in the amount of carbon dioxide in the atmosphere.  
2. A greenhouse is a glass house where we grow plants.  
3. Ozone absorbs the ultraviolet rays from the Sun.  
4. The Kyoto Protocol is an agreement that is signed by 41 countries of the world.

## Theme 4: Living With Changes

### Chapter 8: Soil Erosion and Conservation

#### Main Coursebook

I am ready



Icebreaker: Soil

#### In-text Question

1. No 2. Yes

#### In-text Question

1. No 2. Yes

#### I am a learner

- A. 1. b 2. a 3. a 4. a 5. c  
B. 1. True 2. True 3. False  
4. True 5. True
- C. 1. The removal of top layer of the soil is called soil erosion.  
2. Afforestation  
3. Embankment is a raised structure that is used to hold water back along the rivers.
- D. 1. The factors of soil erosion are as follows:
- Running water:** Heavy rains often result in flood. Flood washes away the top soil from hill slopes, making the slopes unfit for cultivation.
  - Wind:** In dry and arid regions, such as deserts, strong winds carry the top soil away with them.
  - Human beings:** Cutting down of trees causes soil to become loose and makes it possible for the soil to be easily carried away. Also, ploughing of hill slopes and overgrazing causes soil erosion.
2. Following are the different methods of soil conservation:
- On flat, open grounds:** Winds blow off the soil from the bare land easily. To protect this, farmers grow some cover crops, such as creepers and grasses. These crops hold the soil and prevent them from being blown away.

- ii. **On hill slopes:** Cutting down the hill slopes into steps or terraces prevent soil erosion. This is because steps slow down the water flow, causing soil from one step to be left on the next step.
- iii. **On fields near rivers:** During monsoon, many rivers overflow and flood the fields. To prevent this, embankments are built along the rivers. The embankment holds the water between the river banks and prevents soil erosion.

### I am a doer

Accept all relevant responses.

### I am an all-rounder

#### A. English:

- I grew apple trees in my garden.
- Ben watered the plants on Saturday.

#### B. Maths: 6

C. **Social Studies:** It prevents soil erosion.

## Students' Worksheets

### Worksheet 1

- A. 1. uppermost 2. solid 3. erosion  
4. human activities; natural forces  
5. fertility
- B. 1. SOIL 2. ROCK  
3. EROSION 4. VEGETATION  
5. NATURAL FORCES
- C. 1. False 2. True 3. False  
4. True 5. True

### Worksheet 2

- A. 1. erosion 2. soil 3. erosion  
4. top 5. soil
- B. 1. DESERT 2. FLOOD  
3. HILL SLOPES 4. CULTIVATION  
5. SOIL EROSION
- C. 1. False 2. True 3. True  
4. False 5. True

### Worksheet 3

- A. 1. Covered land prevents soil erosion.  
2. We cannot hinder the natural forces.  
3. Our responsibility is to prevent the soil erosion.  
4. Soil conservation is the protection of soil against erosion.  
5. Growing trees and afforestation are effective methods of soil conservation.

- B. 1. CREEPERS 2. PRESERVE  
3. TERRACE 4. HARVESTING  
5. AFFORESTATION
- C. 1. steps slow down the water flow  
2. during monsoon many rivers overflow  
3. embankments are built along the rivers  
4. the winds blow off soil easily from the bare land  
5. the farmers grow some cover crops such as creepers and grasses

### Worksheet 4

- A. 1. afforestation 2. slopes  
3. erosion 4. control  
5. rivers
- B. 1. GRASSES 2. PLOUGHING  
3. DEFORESTATION 4. OVERGRAZING  
5. HUMAN ACTIVITIES
- C. 1. False 2. True 3. False  
4. False 5. True

## Teacher's Worksheets

### Worksheet 1

- A. 1. soil 2. flood  
3. Bihar 4. deforestation
- B. 1. formation 2. Flood  
3. Chambal Valley 4. arid  
5. Protection 6. afforestation  
7. creepers 8. embankments

### Worksheet 2

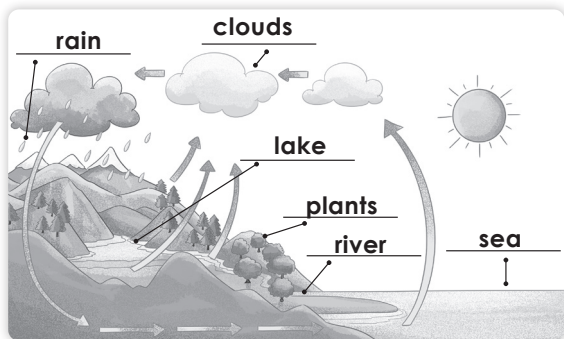
- A. 1. Natural 2. hold  
3. erosion 4. embankments
- B. 1. To hold the soil and prevent it from being blown away.  
2. The steps slow down the water flow, causing soil from one step to be left on the next step.  
3. To hold the water between the river banks and to prevent soil erosion.

## Theme 5: Living Across Ages

### Chapter 9: Our Life Supports

#### Main Coursebook

#### I am ready



**Icebreaker:** car; bike

#### In-text Question

1. No
2. Yes

#### In-text Question

1. False
2. True

#### In-text Question

1. Yes
2. No

#### I am a learner

- A. 1. a    2. a    3. a    4. b    5. b
- B. 1. True    2. False    3. True  
4. False    5. True
- C. 1. Troposphere, stratosphere, mesosphere, thermosphere and exosphere.  
2. Nitrogen  
3. In sedimentation, we allow the impurities to settle down at the bottom of container.  
D. 1. The four properties of air are as follows:  
i. Air has weight  
Air has some weight, although this weight is comparatively less than that of liquids and solids.  
ii. Air takes up space  
Air occupies space. An inflated balloon appears bigger in size in comparison to a deflated balloon.  
iii. Air exerts pressure  
Since air has weight, it, therefore, exerts pressure. The air pressure at the mountains is comparatively less than the air pressure at sea level.  
iv. Air exerts pressure in all directions.

2. Insoluble impurities are the impurities that do not dissolve in water and can be seen. These impurities can be removed by the methods of sedimentation, and decantation and filtration.

Soluble impurities are impurities that dissolve in water and cannot be seen. These impurities can be removed by methods of evaporation and distillation.

#### I am a thinker

Accept all relevant responses.

#### I am an all-rounder

##### A. English:

1. Rihan will get up early every day and drink a glass of lukewarm water.
2. Rohan will go to a toy shop to fill air in his basketball.

##### B. Maths:

A: 2

W: 2

##### C. Social Studies: Hardeep Singh Puri

#### Students' Worksheets

##### Worksheet 1

- A. 1. different    2. oxygen  
3. outermost    4. troposphere  
5. ultraviolet (UV)
- B. 1. False    2. True    3. True  
4. False    5. False
- C. 1. →e    2. →c    3. →a  
4. →b    5. →d

##### Worksheet 2

- A. 1. pressure    2. inflated    3. 78 per cent  
4. oxygen    5. Humidity
- B. 1. EXOSPHERE    2. MESOSPHERE  
3. TROPOSPHERE    4. STRATOSPHERE  
5. THERMOSPHERE
- C. 1. True    2. False    3. False  
4. False    5. True

##### Worksheet 3

- A. 1. In filtration, we separate impurities from water by using filter paper. In this, the insoluble impurities collect on the filter paper while the water collects in beaker or container kept below the filter, as filtrate.
2. In decantation, we first allow the impurities to settle down at the bottom of container. Then, without disturbing the sediment that is present at the bottom of

the beaker, we drain the clean water on the top into another beaker.

3. In sedimentation, we allow the impurities to settle down at the bottom of container.
4. Soluble impurities are impurities that dissolve in water and cannot be seen.
5. Insoluble impurities are the impurities that do not dissolve in water and can be seen.

B. water; clean; rainwater; impure; purified

C. 1. No 2. Yes 3. Yes 4. Yes 5. Yes

#### Worksheet 4

A. Impure; clean; filtered; purified; three

- B. 1. FILTRATION 2. DISTILLATION
3. CHLORINATION 4. DECANTATION
5. SEDIMENTATION

C. 1. Yes 2. Yes 3. No 4. Yes 5. No

#### Teacher's Worksheets

##### Worksheet 1

1. a 2. b 3. d
4. b 5. b 6. d

##### Worksheet 2

1. Substances, such as dirt, impurities, certain living and dead things, dissolve in water and make it impure.
2. We need water for drinking, cooking, bathing, washing and various other activities. Plants also need water for survival.
3. In distillation, water (or any other liquid), mixed with impurities, is heated till it starts boiling. On boiling, the water evaporates and water vapours enter a condenser. In the condenser, water vapour changes into liquid again and collect in a flask (receiving flask) as distillate.
4. Air is a mixture of different gases. Clean air consists of nearly 78 per cent nitrogen, 21 per cent oxygen and less than 1 per cent of argon, carbon dioxide and other gases. Air also contains dust, smoke and water vapour.
5. i. Nitrogen: Plants get nitrogen from the soil with the help of bacteria.  
ii. Oxygen: It is used for breathing and burning.  
iii. Carbon dioxide: Plants use this gas to make their own food.  
iv. Water vapour: It forms clouds and then condenses to fall as snow.

## Theme 6: Living Together

### Chapter 10: Safety and First Aid

#### Main Coursebook

##### I am ready



Icebreaker: weight loss

##### In-text Question

1. true
2. false

##### In-text Question

1. Yes
2. No

##### I am a learner

- A. 1. a 2. b 3. c 4. a 5. b
- B. 1. True 2. True 3. False  
4. False 5. True
- C. 1. A fracture is a crack or breaks in a bone.  
2. Different types of injuries often affect different body regions. Therefore, each body regions usually require different first aid.  
3. Tourniquet is a piece of cloth tied around a wound or an arm or leg.
- D. 1. A sprain is a torn tissue around a joint. A fracture is a crack or breaks in a bone. For a sprain, one should apply an ice pack or ice cube till the swelling subsides. For fracture, one should avoid unnecessary movement at the affected region.  
2. In case of minor burns, one should apply antiseptic lotion or cream to avoid infection. In case of severe burns, one should cover burns that may form blisters. In case of chemical burns, one should use plenty of water to rinse off the chemical.

##### I am a doer

Accept all relevant responses.

##### I am an all-rounder

###### A. English

1. an
2. a

B. **Maths:**  $16.2 \times 100 = 1620$  km

C. **Social Studies:** Yes; one should rinse off the chemical immediately using the plenty of water.

## Students' Worksheets

### Worksheet 1

- A. 1. everyone                      2. safety rules  
3. stay calm                        4. germs  
5. first aid
- B. 1. CUTS                              2. INJURED  
3. ANTISEPTIC                        4. SCRATCHES  
5. EMERGENCIES
- C. 1. True                      2. False                      3. True  
4. False                      5. True

### Worksheet 2

- A. 1. upright                      2. doctor                      3. breathe  
4. sprain                          5. cream
- B. 1. PATIENT                      2. TETANUS                      3. COTTON  
4. INJECTION                      5. BANDAGE
- C. 1. False                      2. False                      3. False  
4. True                          5. True

### Worksheet 3

- A. 1. Apply ice cubes to the sprained region.  
2. A sling can be made from a piece of cloth.  
3. Minor burns are painful and need urgent treatment.  
4. Dip a sterile cloth in baking soda solution and use it as a wet compress.  
5. One can suffer from burns from hot objects, such as boiling water, fire and so on.
- B. 1. FLARE                      2. VICTIM                      3. POISON  
4. BLISTERS                      5. COMPRESS
- C. 1. consult the doctor  
2. minor burns are painful  
3. apply baking soda to burns  
4. one can suffer from hot objects  
5. avoid using water for fire caused by petrol

### Worksheet 4

- A. In case of minor burns, one should apply antiseptic lotion or cream to avoid infection.  
In case of severe burns, one should cover burns that may form blisters.  
In case of chemical burns, one should use plenty of water to rinse off the chemical.
- B. 4, 5
- C. 1. should                      2. should not  
3. should                      4. should  
5. should not

## Teacher's Worksheets

### Worksheet 1

- A. 1. c                      2. c                      3. b  
B. 1. F                      2. F                      3. T  
4. F                      5. T

### Worksheet 2

- A. 1. Minor burns are painful, yet can be treated at home. One should keep the burned area under running and cold water till pain subsides. Apply an antiseptic lotion or cream to avoid infection. One can also apply baking soda and water instead of antiseptic lotion.
2. A fracture is a crack or break in a bone. For this, one can use a splint and avoid unnecessary movement at the affected region.  
We can make splints from newspaper folds, cardboard or pillows to support the fractured region. A sling, made from a piece of cloth, can also be used.
3. Avoid using water if the petrol caught fire, as petrol will float on water which will increase the flare.
4. Remove clothing from the affected area. Use plenty of water to rinse off the chemical. Cover the area with sterile cotton or cloth and consult the doctor.
5. A fracture is a crack or break in a bone. For this, one can use a splint and avoid unnecessary movement at the affected region.  
We can make splints from newspaper folds, cardboard or pillows to support the fractured region. A sling, made from a piece of cloth, can also be used.
6. Snake bite injects poison into the body of the victim. This causes a lot of pain and swelling. One should treat the victim immediately otherwise the poison can kill the victim. Apply a tourniquet just above the bite to stop the blood flow to the heart and slow down the spreading of poison. Immediately take the victim to the nearby hospital or a doctor.



## Theme 6: Living Together

### Chapter 11: All About Matter

#### Main Coursebook

#### I am ready



Juice

Water



Marbles

Eraser



Air in balloon

Steam from boiling water

Icebreaker: GAS

#### In-text Question

1. No 2. Yes

#### In-text Question

1. No 2. Yes

#### I am a learner

A. 1. a 2. a 3. c 4. b 5. a

B. 1. True 2. True 3. True

4. False 5. True

- C. 1. Molecules are small units of matter, which can be broken down into smaller units called atoms.  
2. Chemical change  
3. A solution is formed when two or more substances mixed together.
- D. 1. **Miscible liquids:** Liquids that can dissolve in each other are called miscible liquids, such as milk and water.

**Immiscible liquids:** Liquids that cannot dissolve in each other are called immiscible liquids, such as kerosene and water.

2. **Physical changes:** A physical change indicates a change in the state of matter. These changes are reversible and temporary. For example, the melting of the ice cube.

**Chemical changes:** A chemical change indicates the formation of a completely new substance. This change is irreversible and permanent. For example, the burning of wood.

#### I am a thinker

Gases can be compressed easily because the molecules of gases are a distance from each other. On compression, the molecules of gases come close together.

However, molecules of solids are in contact with each other, while molecules of liquids are also at a distance from each other but less apart than the molecules of gases. As a result, solids cannot be compressed, while liquids can be compressed up to a certain limit.

#### I am an all-rounder

##### A. English

1. fizz 2. puzzle

##### B. Maths: ₹25

##### C. Social Studies: Artillery, machine guns, tanks, U-boats

#### Students' Worksheets

##### Worksheet 1

- A. 1. matter 2. atoms  
3. compounds 4. molecules  
5. matter
- B. 1. ATOMS 2. MATTER  
3. SOLIDS 4. SOLUTIONS  
5. MOLECULES
- C. 1. False 2. True 3. True  
4. True 5. False

##### Worksheet 2

- A. 1. three 2. solution 3. solvent  
4. naked eyes 5. dissolve
- B. 1. SOLUTE 2. SOLVENT 3. SUBSTANCE  
4. CHEMICAL 5. COMPOUNDS
- C. 1. False 2. False 3. False  
4. True 5. False

##### Worksheet 3

- A. 1. Anything that occupies space and has weight is called matter.  
2. A solution is a mixture of two or more substances.  
3. Molecules are small units of matter, which can be broken down into smaller units called atoms.  
4. Solid, liquid and gas.  
5. Sugar molecules find space among molecules of water.
- B. chemical; substance; new; burning; ash
- C. 1. N 2. Y 3. Y 4. Y 5. Y

## Worksheet 4

- A. 1. reversible                      2. heating  
3. ash                                      4. temporary  
5. dissolve
- B. 4, 5
- C. 2, 3, 4

## Teacher's Worksheets

### Worksheet 1

- A. 1. matter                              2. permanent  
3. miscible liquids                      4. insoluble impurities  
5. state of matter
- B. 1. F                                      2. F                                      3. T  
4. F                                      5. T

### C. chemical changes

Chemical change indicates a permanent change in the substance.

In a chemical change, a completely new substance forms

We cannot get back the original state.

For example, heating the wood over fire changes it into ash. The molecules of wood are different from molecules of ash.

### physical changes

Physical change is the change that indicates the change in the state of matter.

These changes are reversible and temporary.

We can get back the original state.

For example, on heating, solid wax turns into liquid wax. However, on cooling, the liquid wax turns into solid wax.

### Worksheet 2

1. Accept all relevant answers.
2. The solute is a substance that dissolves, whereas the solvent is a substance in which the solute dissolves. For example, mixing salt in water forms a solution. In this mixture, salt is the solute and water is the solvent.
3. A solution forms when two or more substances mix together. A solution consists of a solute and a solvent.
4. A chemical change indicates a permanent change in the substance. In a chemical change, a completely new substance forms, and we cannot get back the old substance.

For example, heating the wood over fire changes it into ash. The molecules of wood are different from molecules of ash. This change is irreversible.

## Enrichment Activities

- A. Try yourself  
B. Try yourself  
C. Try yourself  
D. Try yourself

## Revision Worksheet

- A. 1. c      2. b      3. c
- B. 1. filter paper  
2. UV or ultraviolet  
3. blisters
- C. 1. False      2. True      3. True
- D. 1. Exhale  
2. Anti-tetanus injection  
3. Soil Erosion
- E. 1. 1. CFCs (chlorofluorocarbons) are non-toxic chemicals, consisting of chlorine, fluorine and carbon atoms. CFCs destroy the ozone layer and trap heat in the lower parts of the atmosphere, thereby causing the warming of the Earth's surface.
2. Keep the patient upright in such cases with their head held back. Press the bleeding side firmly and keep an ice pack or wet cloth on the nose and head of the patient. Ask the patient to breathe through the mouth. In case of heavy bleeding, consult the doctor.
3. In a particular area, roots of plants and trees hold the soil. Cutting down trees causes soil to become loose and makes it possible for the soil to be easily carried away. Also, ploughing of hill slopes and overgrazing causes soil erosion.



4. A joint is the meeting point of two bones.
  5. The ball and socket joint is one of the movable joints,
- B.** 1. BALL      2. PIVOT      3. HINGE  
4. SOCKET      5. GLIDING
- C.** 1. movable joints can move  
2. a joint is the meeting point of two bones  
3. joint provide stability and flexibility to the body  
4. hinge joint is present at the knee and elbow  
5. the ball and socket joints are present at the hip and shoulder

#### Worksheet 4

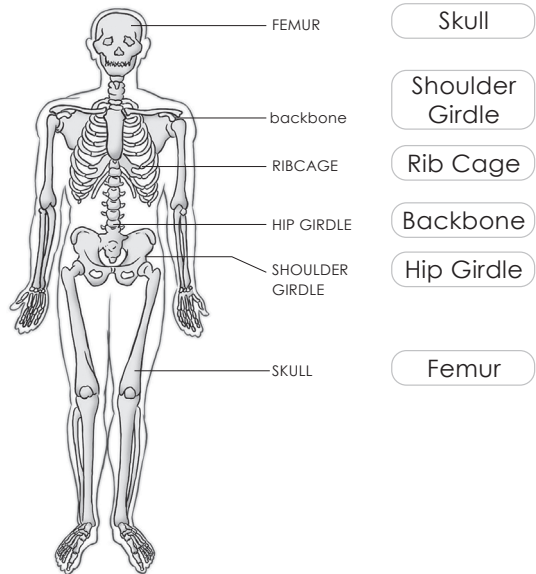
- A.** 1. Muscles work by contraction and relaxation.  
2. The muscular system is a system that is made up of voluntary and involuntary muscles.  
3. Voluntary movements are movements that occur when we decide to move them.  
4. Involuntary movements are movements that occur without our decision.  
5. Skeletal, smooth and cardiac muscles.
- B.** 1. voluntary                      2. muscle  
3. voluntary                      4. involuntary  
5. muscular
- C.** 1. False                      2. True                      3. True  
4. False                      5. False

### Teacher's Worksheets

#### Worksheet 1

- A.** 1. an organ system  
2. 22  
3. vertebrae  
4. 12
- B.** 1. Skull                      2. Backbone  
3. Rib Cage                      4. Rib Cage
- C.** 1. It is always advised to wear a helmet while driving a motorcycle. In case of accident, the helmet will protect the brain, as brain is the most important organ of the body.  
2. In that case, we will not be able to touch our knees as the backbone is made up of one single bone.

#### Worksheet 2



## Theme 7: Keeping Us Strong

### Chapter 13: Our Nervous System

#### Main Coursebook

**I am ready:** NOSE; EYES; SKIN; EARS

**Icebreaker:** NOSE

#### In-text Question

1. True                      2. False

#### In-text Question

1. No                      2. No

#### I am a learner

- A.** 1. a      2. a      3. b      4. b      5. c
- B.** 1. Cerebrum                      2. Medulla  
3. spinal cord                      4. optic nerves  
5. skin
- C.** 1. Nerves are thread-like structures that act as a messenger between the brain and the body.  
2. Cerebrum is responsible for the working of the nose, eyes, tongue and ears. The cerebrum also helps us think, learn, remember, recall, speak and emote. In the absence of cerebrum thinking, learning, remembering, recalling and speaking will be affected.  
3. Reflex action is the quick response of the body.

- D. 1. The brain consists of three parts namely, the cerebrum, cerebellum and medulla oblongata. The cerebrum is responsible for the working of the nose, eyes, tongue and ears. The cerebellum helps in coordinating muscle actions and balancing the body in proper posture. The medulla oblongata forms a connection between the brain and the spinal cord and regulates the involuntary activities of the body.
2. Accept all relevant responses.

### I am a thinker

If a person lacks reflex action, then the body would be unable to respond timely to injury or shock.

### I am an all-rounder

#### A. English:

1. smells                      2. smoke

#### B. Maths: 33.5 degrees Celsius; 36.88 degrees Celsius

#### C. Social Studies: Sunderlal Bahuguna

## Students' Worksheets

### Worksheet 1

- A. 1. control                      2. information  
3. three                          4. largest  
5. 80%
- B. 1. True                      2. True                      3. False  
4. False                      5. False
- C. 1 →c    2. →d    3. →b    4. →a    5. →e

### Worksheet 2

- A. 1. skull                          2. Cerebrum  
3. jerky                          4. Medulla oblongata  
5. Spinal cord
- B. 1. INFORMATION              2. SKULL  
3. CEREBRUM                      4. CEREBELLUM  
5. MEDULLA
- C. 1. C    2. I    3. C    4. C    5. C

### Worksheet 3

- A. 1. medulla                      2. thread-like  
3. Nerves                          4. three  
5. sensory
- B. 1. MESSENGER                  2. NETWORK  
3. SENSORY                          4. MOTOR  
5. MIXED
- C. 1. True                      2. True                      3. False  
4. False                      5. False

## Worksheet 4

- A. 1. Brain                      2. Skull                      3. Cerebrum  
4. Cerebellum    5. Medulla
- B. spinal cord, medulla, thread-like, Sensory, Motor
- C. 1. CORNEA    2. IRIS                      3. PUPIL  
4. RETINA    5. OPTIC NERVES

## Teacher's Worksheets

### Worksheet 1

- A. 1. F    2. F    3. F    4. T    5. F
- B. 1. cerebrum                      2. motor nerves  
3. sounds                          4. thread-like  
5. Reflex action
- C. 1. signal                      2. heart                      3. think

### Worksheet 2

- A. 1. To protect ourselves from shocks and injuries, the body needs to respond rapidly. Such types of quick responses are processed by the spinal cord. These actions are called reflex actions. The brain is not usually involved in reflex actions.
2. A clear fluid is present within the space between the brain and the skull and also within the inside of the brain. This fluid acts as a cushion against various injuries and jerks.
3. The nervous system consists of:
- Brain
  - Spinal cord
  - Nerves and
  - Sense organs
4. Nerves are thread-like structures that act as a messenger between the brain and the body. They form a wide network that extends throughout the body. Some of them are directly connected to the brain and others are connected to the spinal cord.
5. The three types of nerves are sensory nerves, motor nerves and mixed nerves.
6. The brain is made up of three parts — the cerebrum, the cerebellum and the medulla oblongata.

**Cerebrum:** It is the largest part of our brain and constitutes around 80 percent of the weight of the brain. It is responsible for the working of our nose, eyes, tongue and ears. The cerebrum also helps us think, learn, remember, recall, speak and emote.

**Cerebellum:** This part of the brain lies below the cerebrum. It helps in coordinating the muscle actions and balancing the body in proper posture. If the cerebellum does not work properly, our body makes jerky movements.

**Medulla Oblongata:** Below the cerebellum, lies the medulla oblongata or medulla. It forms a connection between the brain and the spinal cord.

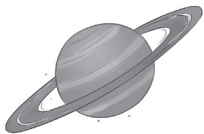
It regulates the involuntary activities of the body, such as respiration and heartbeat. The medulla remains active even when we are sleeping.

## Theme 8: From Satellite to Satellite

### Chapter 14: The Earth's Satellite

#### Main Coursebook

#### I am ready



Name of the planet:  
Saturn

Number of Moons:  
62



Name of the planet:  
Uranus

Number of Moons:  
27

#### Icebreaker: Moon

#### In-text Question

1. Yes                      2. No

#### In-text Question

1. true                      2. false

#### I am a learner

- A. 1. b      2. a      3. b      4. c      5. a
- B. 1. False      2. True      3. False  
4. False      5. False
- C. 1. The surface of the Moon is rough due to huge mountains, and some round and hollow structures called craters.  
2. There is no air and water on the Moon. So, no life exists there.  
3. Aryabhata
- D. 1. **Lunar eclipse:** In lunar eclipse, the Earth casts a shadow on the Moon, as the Earth comes in between the Sun and the Moon.  
In partial lunar eclipse, the Moon is only

partly hidden by the dark shadow of the Earth.

In total lunar eclipse, the Moon is completely in the dark shadow of the Earth.

A lunar eclipse occurs at night.

**Solar eclipse:** In solar eclipse, the Moon casts a shadow on the Earth as the Moon comes between the Sun and the Earth.

In partial solar eclipse, the Sun is only partly hidden by the dark shadow of the Moon.

In total solar eclipse, the Sun is completely in the dark shadow of the Moon.

A solar eclipse occurs during the day.

2. Artificial satellites are man-made satellites. The name of some satellites is APPLE, INSAT-1B, INSAT-2A, INSAT-2B, Oceansat and IRNSS-1A.

Uses of artificial satellites:

Artificial satellites were designed for scientific research. They are also used for sending messages from one country to another. Satellites are also used for communication (communication satellites), weather forecasts (weather satellites) and so on.

#### I am a doer

Accept all relevant responses.

#### I am an all-rounder

##### A. English

1. Rahul has some chocolates in his bag,  
2. Ritika has kept her shoes under the table.

##### B. Maths: $3,84,400 \times 1000 = 38,44,00,000$ m.

##### C. Social Studies:

Satellite data help forecast the weather or climate by images and numerical data.

#### Students' Worksheets

##### Worksheet 1

- A. 1. Moon      2. 3,84,400      3. Earth's  
4. satellite      5. smaller
- B. 1. False      2. True      3. True  
4. False      5. False
- C. 1. SUN      2. MOON      3. EARTH  
4. PLANET      5. SATELLITE

##### Worksheet 2

- A. 1. water      2. Moon      3. gravity  
4. Sun      5. cold
- B. 1. NEW MOON      2. FULL MOON  
3. WAXING GIBBOUS      4. WANING GIBBOUS  
5. WAXING CRESCENT

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

### Worksheet 3

- A. 1. The surface of the Moon is rough due to huge mountains, and some round and hollow structures called craters.  
2. When the sunlight falls on the surface of the Earth and the Moon, their shadows form. These shadows are called eclipses.  
3. Artificial satellites are man-made satellites.  
4. 4,500 million years old  
5. 3,84,400 km
- B. one-sixth; heavy; atmosphere; Sun; sound
- C. 1. yes      2. no      3. yes  
4. yes      5. no

### Worksheet 4

- A. Rakesh Sharma; in space; spacecrafts; spacesuit; atmosphere
- B. 1. LUNAR      2. SOLAR      3. ECLIPSE  
4. APOLLO      5. CRATERS
- C. 1. no      2. yes      3. yes  
4. no      5. yes

### Teacher's Worksheets

#### Worksheet 1

- A. 1. F      2. F      3. T  
4. F      5. F
- B. 1. Sputnik  
2. communication  
3. 1975  
4. Major Yuri Gagarin
- C. Accept all relevant answers.

#### Worksheet 2

- A. 1. b      2. b      3. c      4. c
- B. Accept all relevant answers.

## Theme 9: From/Signs to Signals

### Chapter 15: Artificial Intelligence

#### Main Coursebook

#### I am ready



Cannot eat  
Cannot feel



Can eat  
Can feel

#### Icebreaker

Accept all relevant responses.

#### In-text Question

1. No      2. Yes

#### I am a learner

- A. 1. c      2. a      3. c      4. c      5. c
- B. 1. True      2. True      3. True  
4. False      5. True
- C. 1. Self-driving cars are the vehicles that uses AI to sense their surroundings and move safely with little or no human input.  
2. Humanoids are robots that look and act like humans. However, these robots cannot feel, eat, move on its own and grow like the human beings.  
3. Smart-speaker is a voice-activated speaker that uses AI to do everyday tasks.
- D. 1. When machines think, learn and act as humans, it is called Artificial intelligence. With the help of this some fascinating technologies are possible these are namely, humanoids, futuristic space travel, self-driving cars and smart speakers.  
2. Some of the technologies that uses AI are as follows:
- **Humanoids:** Humanoids are robots that look and act like humans. They are the most exciting innovation of AI. Some of the popular humanoids are Atlas, Asimo, Rashmi and Pepper.
  - **Futuristic space travel:** Futuristic space travel involves physical exploration of the space by human spaceflights or by robotic spacecrafts.

- **Self-driving cars:** A self-driving car is a vehicle that uses AI to sense its surroundings and move safely with little or no human input.
- **Smart speakers:** A smart speaker is a voice-activated speaker that uses AI to perform everyday tasks. For example, Alexa (a virtual-assistant system developed by an e-commerce company).

### I am a thinker

Accept all relevant responses.

### I am an all-rounder

#### A. English

1. future                      2. feature

B. **Maths:** AI analyse the data which makes data handling easier.

#### C. Social Studies

AI analyse the data and change the way to make the speeches, content and various our modes of communication easier.

## Students' Worksheets

### Worksheet 1

- A. 1. Artificial intelligence  
2. robots  
3. space  
4. humanoids  
5. cheaper
- B. 1. False      2. True      3. False  
4. True      5. True
- C. 1. →d    2. →a    3. →e    4. →c    5. →b

### Worksheet 2

- A. 1. humanoid  
2. Futuristic space travel  
3. self-driving car  
4. voice-activated  
5. Alexa
- B. 1. DATA  
2. SCIENTIFIC RESEARCH  
3. SPACE EXPLORATION  
4. GAMING  
5. TECHNOLOGY
- C. 1. C    2. I    3. I    4. C    5. I

### Worksheet 3

- A. understand, repetitive, rest, doctors, gaming
- B. 1. ROBOT      2. ATLAS      3. ASIMO  
4. RASHMI      5. PEPPER

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

## Teacher's Worksheets

### Worksheet 1

#### A. Humanoids

They don't have family  
They look and act like humans  
They don't have muscles and nervous system  
They cannot reproduce  
They are made in laboratories  
They cannot feel

#### Humans

They have family  
Humans do not act like humanoids.  
They have muscles and nervous system  
They can reproduce  
A human child grows in a mother's womb  
They feel through their sense organs

- B. 1. v    2. iii    3. iv    4. ii    5. i
- C. Artificial intelligence is used in our day to day life. It is used in giving on-line shopping recommendations, playing music and also giving the routes having less traffic.

### Worksheet 1

- A. 1. The ability to think and learn is called intelligence. When machines think, learn and act as humans, it is called Artificial Intelligence (AI).
2. Humanoids are robots that look and act like humans. They are the most exciting innovation of AI. Countries from all over the world have come up with different humanoid models. Some of the popular humanoids are Atlas, Asimo, Rashmi and Pepper.
3. The arrival of the concept of space tourism has made big companies use AI and work towards making space travel cheaper and safer even for common people.  
Futuristic space travel involves physical exploration of the space by human spaceflights or by robotic spacecrafts. There are also attempts to find new planets which can be used for human settlement.
4. A self-driving car is a vehicle that uses AI to sense its surroundings and move safely with little or no human input



5. A smart speaker is a voice-activated speaker that uses AI to perform everyday tasks. For example, Alexa (a virtual-assistant system developed by an e-commerce company) and Siri (a voice-assistant powered by an multinational corporation that specialises in gadgets).

### Enrichment Activities

- A. Try yourself  
 B. Try yourself  
 C. Try yourself  
 D. Try yourself  
 E. Try yourself  
 F. Try yourself

### Revision Worksheet

- A. 1. b    2. c    3. b    4. b    5. a  
 B. 1. earth  
 2. pinna or the outer ear  
 3. cartilage  
 4. tube-like  
 5. touch  
 C. 1. True    2. True    3. False  
 4. True    5. False  
 D. 1. Yuri Gagarin  
 2. Optic Nerves  
 3. Skeletal Muscles  
 4. Eclipses  
 5. Humanoids

- E. 1. The ability to think and learn is called intelligence. When machines think, learn and act as humans, it is called Artificial Intelligence (AI). It is different from human intelligence.  
 2. The skeleton is the framework of bones that supports our body. The bones also protect our internal body organs (such as stomach, heart or brain) from any injury.  
 3. The vertebral column helps to perform different body movements like forward bending, backward bending, yoga, dance.  
 4. This light travels from the pupil to the retina, where the image is formed.  
 5. A phase is a term that is used for different shapes of the Moon that are visible from the Earth. The different phases of the Moon are – full moon, waxing gibbous, first quarter, waxing crescent, new moon, waning crescent, third quarter and waning gibbous.

F.

