Answers

Theme 1: Why Do We Need Land?
Lesson-1: Rocks and Minerals

Main Coursebook

Re-KAP

Kinaesthetic:

Accept all relevant responses.

Auditory:

1. Minerals are solid substances that have a specific chemical structure, like quartz or diamond.
2. Sandstone is a rock which is soft in nature.

Pictorial:

1. ALKCH CHALK
2. ALCO COAL
3. PPERCO COPPER
4. VERSIL SILVER
5. MONDDIA DIAMOND
6. LDGO GOLD

Interacting better:

Pumice stone (Accept all relevant responses).

Understanding better: (Page 9)

1. Sedimentary rocks
2. Metamorphic rocks

Understanding better: (Page 9)

1. Gold
2. Ores

Learning better:

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.

Igneous rocks	Sedimentary rocks	Metamorphic rocks
Igneous rocks are formed by the cooling and hardening of hot liquid rock material, called magma.	Sedimentary rocks are formed from pebbles, sand, mud or clay, deposited in the ocean and brought to the shore by flowing water or floating ice.	Metamorphic rocks are formed by the transformation of already existing rocks through a process called metamor-phism.
These are found at the base of all landforms, such as plains, mountains, plateaus and ocean beds.	Sedimentary rocks cover the major portion of the Earth's surface.	Most metamorphic rocks were once either igneous or sedimentary rocks.
For example, granite, pumice, etc.	For example, sandstone, shale, etc.	For example, marble, quartzite, etc.

Creating better: Accept all relevant responses.

Thinking better:

Rocks are hard and strong because they are made up of minerals, which are solid materials that form deep inside the Earth.

On the other hand, sand and soil are different because they are made of tiny pieces of rocks and other materials. Sand is made of small grains of rock that are smooth and loose, while soil is made of even smaller particles and also has bits of dead plants and animals mixed in. Since these tiny pieces aren't packed together tightly like in rocks, they are soft and not as strong.

Choosing better:

2. They should consider buying an electric vehicle.

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.
4. Igneous rocks, sedimentary rocks and metamorphic rocks.
5. 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

Book of Holistic Teaching

Developing better:

A. **English:**
1. work 2. silver fork

B. **Maths:** DCCXVII

C. **Social Studies:** Plateaus

Book of Project Ideas

Making better:

Accept all relevant responses.

Theme 1: Why Do We Need Land?
Lesson-2: Force and Energy

Main Coursebook

Re-KAP

Kinaesthetic:

Accept all relevant responses.

Auditory:

1. Muscular force is applied by our muscles when we push or pull an object.
2. Buoyant force is applied by liquids on an object.

Pictorial:

Pull

Push

Push

Pull

Interacting better: Accept all relevant responses.

Understanding better: (Page 15)

1. Muscular force
2. Contact force

Understanding better: (Page 16)

1. True
2. True

Learning better:

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

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

C. 1. A force is a push or pull, which, when applied on any object, tends to change the state, speed, direction and shape of the object.
2. Suzy pulls the drawer to open it whereas she pushes the drawer to close it. Suzy applies the force twice to the drawer.

3. When chemical energy changes into electrical energy, or electrical energy to chemical energy it is called electrochemical energy.

D. 1. **Gravitational force:** When two bodies with some mass come close to each other, they pull or attract each other. This force is called gravitational force.

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 the buoyant force or upthrust.

2. **Mechanical energy:** It is the energy attained by an object due to its motion and position. For example, a body or an object has mechanical energy when it is stationary.

Solar energy: It is the form of energy obtained from the Sun. For example, solar cooking.

Geothermal energy: It is the energy that is derived from the Earth. The Earth's crust has energy stored in the form of heat. This energy is called geothermal energy. For example, the hot water and steam generated within the Earth are used to produce electricity.

Creating better: Accept all relevant responses.

Thinking better:

If I were designing a roller coaster, I would use forces and energy to make it both exciting and safe for riders. These are gravity, speed, safety first, comfort and fun.

Choosing better:

2. He should pick up the banana peel and throw it in a nearby dustbin.

Students' Worksheets

Worksheet 1

A. 1. force 2. Muscular
3. contact 4. gravitational
5. attractive

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

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. UPTHRUST

C. 1. → e 2. → a 3. → b 4. → c 5. → d

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

Book of Holistic Teaching

Developing better:

A. **English:**
1. pulls 2. artwork

B. **Maths:**
5, 10, 15, 20, 25 and 30.

C. **Social studies:**
The difference between a plain and a mountain is that plains are flat or gently sloping areas of land, while mountains are elevated landforms with steep slopes.

Book of Project Ideas

Making better:

Accept all relevant responses.

Theme 2: Why Do Disasters Happen?
Lesson-3: Our Houses

Main Coursebook

Re-KAP

Kinaesthetic:

Accept all relevant responses.

Auditory:

1. A house gives us warmth, protection and a place to rest.
2. The main parts of a house are walls, roofs, doors, windows and floor. Walls help hold the house up and keep things private. Roofs protect us from the weather, doors and windows let in light and fresh air, and floors give us a strong place to walk.

Pictorial:

P

K

K

Interacting better:

Accept all relevant responses.

Understanding better: (Page 23)

1. Yes
2. No

Learning better:

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 in places with hot climates.
2. Komal's grandparents house is built that way to keep their house safe from floods and heavy rainfalls.
3. Concrete, glass and iron.

D. 1. Kuccha house - Houses which are made of mud, straws, bamboo and palm leaves are known as kuccha houses. These are usually found in remote areas and villages.

Pucca house - Houses which are constructed using materials such as bricks, concrete, cement and other building materials are known as pucca houses. Pucca houses are mostly found in towns and cities.

2. The regions that experience heavy rainfall have houses that are usually built on stilts and have sloping roofs. Houses in such places are built above ground level so that these houses are safe from floods and heavy rainfall. This elevation helps to keep the living space dry and safe, preventing water damage to property and possessions. It also prevents structural damage over time. For example, Mawsynram in Meghalaya and Mahabaleshwar in Maharashtra.

Creating better:

Accept all relevant responses.

Thinking better:

Advantages	
Kuccha House	**Pucca House**
1. It doesn't need heavy tools or machines to build.	1. It requires heavy tools or machines to build.
2. These remain cooler in hot weather due to materials used such as mud helps to keep the house cool.	2. These houses are hot during summers and cool during winters. We need to use electrical gadgets to feel comfortable with changing weather.
3. It uses natural materials that are good for the environment.	3. Pucca houses are made with strong materials like bricks, cement, etc.
Disadvantages	
Kuccha House	**Pucca House**
1. Kuccha house may get easily damaged in storms or heavy rains.	1. Pucca house can withstand heavy rains and storms.
2. Kuccha house often requires repairing.	2. Pucca houses cost a lot more money because the materials and labour are expensive.

Choosing better:

2. They should use the lemons to make lemonade.

Students' Worksheets

Worksheet 1

A. 1. hot 2. thick 3. Stilts
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. Flat roof 2. Thick walls
3. Sloping roof 4. Fireplace
5. Brick

B. needs, drainage, sunlight, well-plastered

C. 1. BRICKS 2. STONES 3. BAMBOO
4. WOOD 5. PALM LEAVES

Book of Holistic Teaching

Developing better:

A. **English**

1. Sheela's house is built with love and happiness.
2. A troop of monkeys is sitting on the top of the building.

B. **Maths**

The prime factors of 24 are 2 and 3.

C. **Social Studies**

An earthquake occurs when the tectonic plates, which are giant slabs of the Earth's topmost layer, clash with one another. Most earthquakes are too minor and cannot even be felt.

Book of Project Ideas

Making better:

Accept all relevant responses.

Theme 2: Why Do Disasters Happen?

Lesson-4: Communicable and Non-communicable Diseases

Main Coursebook

Re-KAP

Kinaesthetic:

Accept all relevant responses.

Auditory:

1. Communicable diseases can spread from humans to humans or from animals to humans.
2. Non-communicable diseases cannot be transmitted from one person to another.

Pictorial:


H


S


S


H

Interacting better:

Accept all relevant responses.

Understanding better: (Page 29)

1. True 2. True

Learning better:

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

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

C. 1. A disease is a condition in which our body is not able to function properly.
2. Communicable disease
3. Night blindness and Scury (Accept all relevant responses).

D. 1. Communicable diseases - Diseases which are transmitted from one person to another and are also called infectious or transmissible diseases. These are caused by germs or microbes, such as bacteria, fungi, viruses and protozoa. For example, cold, polio, malaria, etc.

Non-communicable diseases - Diseases which are not transmitted from one person to another. They are also known as chronic diseases. This is so because such diseases progress slowly and affect the patient for a longer duration. For example, night blindness, anaemia, beriberi, etc.

2. To stay safe from communicable diseases, we can follow these simple steps:
   a. **Wash Your Hands:** Always wash your hands with soap and water, especially before eating, after using the bathroom or after touching things that might be dirty. This helps remove germs that can make you sick.
   b. **Cover Your Coughs and Sneezes:** If you cough or sneeze, cover your mouth and nose with a tissue, handkerchief or the inside of your elbow. This keeps germs from spreading to others.
   c. **Stay Away from Sick People:** If someone is sick with a cold, the flu or another disease, try to stay away from them so you don't catch it. If you're sick, stay home so you don't spread it to others.
   d. **Clean Your Stuff:** Regularly clean things you touch a lot, like your toys, your desk, or your phone. Germs can live on surfaces and make you sick if you touch them and then touch your face.
   e. **Vaccinations:** Some diseases can be prevented with vaccines. Getting vaccinated helps protect you and others from serious illnesses. Ask your parents or doctor if you are up to date with your vaccines!
   f. **Eat Healthy and Stay Active:** Eating healthy food and exercising can make your body strong and help it fight off germs.

Creating better:

Accept all relevant responses.

Thinking better:

Yes, someone can have multiple vitamin deficiencies. Vitamins are important nutrients that our body needs to stay healthy and if we don't get enough of them, we can become deficient.

There are several reasons why someone might have more than one vitamin deficiency:

1. Not eating enough healthy foods: If a person doesn't eat enough fruits, vegetables and other nutritious foods, they may not get enough of several vitamins.
2. Poor absorption: Sometimes, the body can't absorb vitamins properly. This can happen if a person has certain health problems, like digestive issues, which make it hard for the body to take in the vitamins from food.
3. Special diets: People on strict diets or those who don't eat a variety of foods may not get all the vitamins they need, which can lead to multiple deficiencies.

(Accept all relevant responses)

Choosing better:

2. He should keep his surroundings clean.

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

Book of Holistic Teaching

Developing better:

A. **English**

1. Some healthy chicks hatch out of eggs.
2. Uncle Dursley wears a black patch on the injured eye.

B. **Maths**

The factors of 100 are: 1, 2, 4, 5, 10, 20, 25, 50 and 100.

C. **Social Studies**

Floods occur when water overflows its natural or artificial banks, inundating the surrounding land. They can be caused by heavy rainfall, rapidly melting snow or overflowing rivers or lakes. In India, floods are a recurring phenomenon, particularly affecting regions with high rainfall and river systems.

Some of the regions in India that are most prone to floods include:

Assam, Bihar, Uttar Pradesh, West Bengal, Kerala, Karnataka, Andhra Pradesh and Odisha.

Book of Project Ideas

Making better:

Accept all relevant responses.

Theme 3: Why Are We Different?
Lesson-5: Plant Reproduction

Main Coursebook

Re-KAP

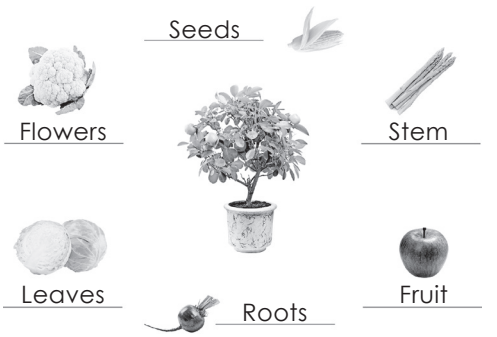
Kinaesthetic:

Accept all relevant responses.

Auditory:

1. Plants use air, water and sunlight to prepare their own food by a process called photosynthesis.
2. Plants take in carbon dioxide for making their food.

Pictorial:



Interacting better:

Accept all relevant responses.

Understanding better: (Page 39)

1. True 2. False

Learning better:

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

B. 1. germination 2. water, sunlight
3. dispersal 4. agents of dispersal
5. wind

C. 1. An embryo is an immature plant that further grows into a new plant under desired conditions.

2. Vegetative propagation.

3. The growth of a new plant from the embryo present inside the seed is known as seed germination.

D. 1. There are five stages of germination. These are as follows:

Stage 1: Imbibition – A process in which a dry seed absorbs water from the soil and swells up after rehydration.

Stage 2: Metabolism – Upon hydration, metabolic processes such as respiration, enzyme activation (a process in which chemical reactions speed up) and synthesis of cellular respiration begin. Then, enzymes start to convert stored food into energy.

Stage 3: Growth initiation – This energy helps seedlings to grow. The embryo present within the seed develops. When the embryonic root becomes visible, it is the first visible sign of germination.

Stage 4: Root and shoot – Roots grow in the downward direction. They take water from the ground. Shoots grow in the upward direction, towards the surface of the soil.

Stage 5: Establishment of seedling – As the shoot begins to develop leaves, it shows that the baby plant is now growing into an adult plant.

2. Seed dispersal can take place through various natural factors, such as wind, water, animals and sometimes, by the explosion of fruits. Such factors are called the agents of dispersal. The agents of seed dispersal are as follows:

   Dispersal by wind

   Seeds of plants, such as cotton, hiptage and dandelions, have hair or wings and are lightweight. Thus, these seeds are easily dispersed by wind.

   Dispersal by water

   Plants with spongy parts or fibrous outer covering can float on water. Hence, their seeds get dispersed through water. The seeds of lotus, water lily, coconut and palm are dispersed by water.

   Dispersal by animals

   Humans and animals consume fruits, such as dates, cherries, mangoes, etc. and throw away their seeds. Some of these seeds have spines, hooks and stiff hair, which sometimes get attached to different animals or birds, or even our clothes. As a result, these seeds travel long distances. Whenever the seeds drop, they have a possibility of germination if the conditions are favourable.

   Some other examples of seeds that are dispersed by animals are sunflower, tomatoes and tamarind.

   Dispersal by explosion

   Seeds of some plants, such as peas, explode! Such explosions help in seed dispersal which means that the seeds get thrown in different directions. In the availability of favourable conditions, the seeds germinate.

Creating better:

Accept all relevant responses.

Thinking better:

Bryophyllum, also known as the 'mother of thousands', is a plant that can usually reproduce through its leaves. New plants grow from small buds on the edges of the leaves. However, if the leaves were unable to form new plants, the plant could still reproduce in other ways:

1. Seeds: Bryophyllum can produce flowers that make seeds. If the plant flowers and the seeds are spread by wind, animals, or water, they can grow into new plants.
2. Stem or Root Cuttings: Bryophyllum can also grow from pieces of its stem or roots. If a part of the plant is cut off and planted in soil, it can grow into a new plant.

   So, even without its leaves forming new plants, Bryophyllum can still reproduce through seeds or other parts of its body, like stems and roots.

Choosing better:

1. She should remain honest with herself and not copy the answer.

Students' Worksheets

Worksheet 1

A. 1. three 2. outermost 3. immature 4. endosperm 5. cotyledon

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

C. 1. →b 2. →c 3. →e 4. →d 5. →a

Worksheet 2

A. 1. young plant or seedling 2. Water 3. sunlight or warmth 4. Air 5. roots

B. 1. EMBRYO 2. ENDOSPERM 3. SEED COAT 4. COTYLEDON 5. SEEDLING

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

Worksheet 3

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

Book of Holistic Teaching

Developing better:

A. **English**

Humid

- Dry
- Arid

Clean

- Dirty
- Unclean

B. **Maths**

The cost of 5 kg of grape seeds is ₹436.

C. **Social Studies**

Plants like mosses and lichens grow in Arctic.

Book of Project Ideas

Making better:

Accept all relevant responses.

Theme 3: Why Are We Different?
Lesson-6: Animals Around Us

Main Coursebook

Re-KAP

Kinaesthetic:

Accept all relevant responses.

Auditory:

1. Animals that fly are called aerial animals.
2. Bat is the only mammal capable of flying.

Pictorial

carnivore ☐
omnivore ☐
herbivore ☑

carnivore ☑
omnivore ☐
herbivore ☐

carnivore ☐
omnivore ☑
herbivore ☐

Interacting better:

Accept all relevant responses.

Understanding better: (Page 44)

1. False 2. True

Understanding better: (Page 45)

1. True 2. False

Learning better:

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

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

C. 1. Insects breathe through small openings, known as spiracles, present on the thorax and abdomen of their bodies. Spiracles are connected to the trachea
2. Forelimbs.
3. Ostriches, penguins and emu.

D. 1. Microscopic organisms, such as paramecium and amoeba, breathe through their body surface. Insects breathe through small openings, known as spiracles, present on the thorax and abdomen of their bodies. Spiracles are connected to the trachea. Animals, such as earthworms, breathe through their thin and moist skin. Some aquatic animals, such as fishes, 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. Animals migrate due to several reasons, such as weather, food, water and shelter.

Some migratory fishes, such as eels, migrate from rivers to seas and lay eggs there.

Creating better:

Accept all relevant responses.

Thinking better:

If animals and birds couldn't migrate from one place to another, it would cause many problems for them and the environment.

1. Lack of food: Many animals and birds migrate to find food. If they couldn't travel, they might not find enough food in the area where they live, and some might not survive.
2. Bad weather: Some animals and birds migrate to avoid cold winters or hot summers. If they couldn't leave when the weather changed, they might not be able to live in that place anymore.
3. Overcrowding: If animals or birds couldn't migrate, too many of them would stay in one place. This could lead to

overcrowding, which means there wouldn't be enough space or food for everyone.

4. Disrupting nature: Migration helps balance nature. Animals and birds help spread seeds or pollinate plants while they travel. If they couldn't migrate, plants and ecosystems might not grow and spread the way they should.

Choosing better:

2. She should call an adult for help and ask them to arrange for a veterinarian.

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

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

Book of Holistic Teaching

Developing better:

A. **English**

1. **Birds:** The birds flew across the sky, chirping happily as they went.
2. **Spiracles:** Insects breathe through small openings, known as spiracles, present on the thorax amd abdomen of their bodies.

B. **Maths**

The decimal form in words is as follows: Five hundred eighteen rupees and fifty paise.

C. **Social Studies**

Two animals which are found in extreme cold regions are polar bear and huskies.

Book of Project Ideas

Making better:

Accept all relevant responses.

Theme 4: Why Do We Need to Think?
Lesson-7: Changes in Our Environment

Main Coursebook

Re-KAP

Kinaesthetic:

Accept all relevant responses.

Auditory:

1. The Earth's temperature gets hotter because of pollution and increased amount of carbon dioxide in the air.
2. Melting of ice takes place in the Arctic because of global warming.

Pictorial:

✓

☐

✓

Interacting better:

Planting trees, Using electric vehicles

Understanding better: (Page 51)

1. False 2. False

Understanding better: (Page 52)

1. False 2. True

Learning better:

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

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

C. 1. A greenhouse is a structure which is typically made of glass. It is designed to trap heat from the Sun within its interior.
2. Global warming.

D. 1. (i) Carbon dioxide - The burning of fossil fuels and deforestation have led to

an increase in the amount of carbon dioxide in the atmosphere. If the amount of carbon dioxide keeps on increasing at this rate, the Earth's temperature will soon increase to such levels that our Earth will become uninhabitable.

(ii) Methane - A major component of the natural gas, methane is produced by the decay of organic material. The production of methane can take place both above or below the surface of the Earth. Methane can be released in the atmosphere by either natural processes or human activities.

(iii) Water vapour - Water vapour acts as the Earth's most abundant greenhouse gas. It contributes about 41–67 per cent to the greenhouse effect. Unlike other greenhouse gases, water vapour remains in the atmosphere for a short period of time.

(iv) Ozone - Unlike other gases, ozone does not act as a typical greenhouse gas. In the upper regions of the stratosphere (a layer of the Earth's atmosphere), ozone absorbs the ultraviolet rays from the Sun. However, in regions near the ground, ozone acts as a greenhouse gas and a pollutant by absorbing infrared radiation emitted by the

Earth's surface, which contributes to atmospheric warming.

(v) CFCs - CFCs (chlorofluorocarbons) are non-toxic chemicals, consisting of chlorine, fluorine and carbon atoms. CFCs are used in air conditioners and refrigerators. 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. As greenhouse gases trap the heat of the Sun and increase the Earth's temperature. This gradual rise in the temperature of the Earth is known as global warming. Global warming poses serious threats to the environment. Elevated temperatures, increased droughts, depletion of ozone layer, rising ocean levels, loss of animal species, etc are some of the threats of global warming.

Ways to control global warming:-

(a) Using electricity cautiously

(b) Reducing the use of fossil fuels

(c) Planting more and more trees

(d) Using public transport whenever possible

(e) Using materials that can be recycled

Creating better:

Accept all relevant responses.

Thinking better:

Yes, global warming can have a big impact on animals and their habitats. Here's how:

1. Changing temperatures: Global warming causes the Earth's temperature to rise. Some animals, such as polar bears, are used to cold climates, but as the ice melts, they lose their homes. Similarily, other animals may not be able to survive in areas that are getting too hot for them.
2. Loss of habitats: Due to deforestation, animals might lose their natural homes. For example, elephants are losing their homes due to cutting of trees in forest areas. Due to this forests might also dry up and animals living there may have to move or struggle to survive.
3. Changing food sources: Many animals rely on specific plants or smaller animals for food. As the climate changes, the plants and animals they depend on may not grow in the same places or at the right time. This can make it harder for them to find food.
4. Extreme weather: Global warming can lead to more storms, floods or droughts. These extreme weather events can destroy animal homes or make it hard for animals to find food and water.

Choosing better:

2. Being environment-friendly

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. CLIMATE
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

Book of Holistic Teaching

Developing better:

A. **English**

Tree: The children sat under the tree to enjoy the shade on a hot summer day.

Free: She was excited to receive a free ticket to the concert.

B. **Maths**

The percentages are converted into fraction:

$78.08\% = \frac{1952}{2500}$ $20.95\% = \frac{419}{2000}$

$0.93\% = \frac{3}{323}$ $0.04\% = \frac{1}{2500}$

C. **Social Studies**

During British rule, the establishment of various industries in India played a significant role in the country's economic development, despite the exploitative nature of colonialism. These industries contributed to the upliftment of India in the following ways:

1. Economic Growth: The setup of industries, especially in sectors like textiles, jute, and steel, led to the growth of the Indian economy. It created job opportunities for many, boosting employment rates.
2. Infrastructure Development: Industries prompted the development of infrastructure such as railways, roads and ports, which were necessary for transporting raw materials and finished goods. This infrastructure development also contributed to improving the overall connectivity within the country.
3. Industrial Expertise: The industries helped in the development of technical and managerial expertise in India, with Indians being trained in various industrial skill.
4. Revenue Generation: The industries generated revenue for the British government, which was often used to fund further infrastructural development. Though much of the revenue was extracted by the British, some investments in public services and facilities were made.

Book of Project Ideas

Making better:

Accept all relevant responses.

Theme 4: Why Do We Need to Think?

Lesson-8: Conservation and Erosion of Soil

Re-KAP

Kinaesthetic:

Accept all relevant responses.

Auditory:

1. Soil conservation is important because it keeps our soil healthy. This helps to grow plants.
2. Soil erosion happens when wind and water carry soil away. Deforestation is the biggest cause of soil erosion.

Pictorial

N R R N

N R

Interacting better:

Accept all relevant responses.

Understanding better: (Page 60)

1. False 2. True

Learning better:

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 the top layer of the soil is called soil erosion. Soil erosion affects the land by decreasing its fertility.
2. Afforestation.
3. During monsoons, 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.

D. 1. Different factors causing soil erosion are as follows.

(a) Running water - Heavy rains often result in flood. Flood washes away the top soil from hill slopes, making the slopes unfit for cultivation. One such example is the Chambal Valley in Madhya Pradesh, where constant running water has led to soil erosion.

(b) Wind - In dry and hot regions, such as deserts, strong winds carry the top soil away with them.

(c) Human beings - Roots of plants and trees hold the soil. The cutting down of trees causes the soil to become loose, which leads to the soil getting carried away easily. Also, the ploughing of hill slopes and overgrazing causes soil erosion.

Creating better:

Accept all relevant responses.

Thinking better:

Planting a variety of trees and plants in a forest or garden is important because it helps in creating a healthy and balanced environment. Just like people need different kinds of food to stay healthy, animals and insects in a forest or garden also need different types of plants to survive.

Here's how diversity benefits the environment and the animals:

1. Supports different animals and insects: Different plants provide food and shelter for different animals. For example, some trees might have fruits or nuts that squirrels eat, while other plants might offer flowers that bees use for nectar. A variety of plants means more animals can live there.
2. Improves the soil: Different plants have different root systems. Some plants might have deep roots that help in bringing nutrients from deep in the soil, while others have shallow roots that help to keep the soil healthy. This way the soil remains better: for all plants.
3. Keeps the environment healthy: Diverse plants help protect the environment in many ways. Some trees are great at absorbing carbon dioxide, which helps reduce the effects of climate change. Other plants, like grasses and bushes, can help prevent soil from eroding or washing away during rain.
4. Prevents diseases: If there's only one type of plant, a disease that affects that plant can spread very quickly and destroy the whole garden or forest. But when there are many different types of plants, diseases are less likely to spread because they may only affect certain plants, not the whole area.

Choosing better:

1. They can tell their parents to build raised beds for the crops to grow.

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. False

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

Book of Holistic Teaching

Developing better:

A. **English**

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

B. **Maths**

The plant saplings of Radhika and Tushar will have 6 sides.

C. **Social Studies**

During the British rule in India, farmers were pressurised to grow indigo and cotton instead of food crops. This leads to reduced production of traditional crops. Farmers also incurred losses as the British bought their crops at cheap prices. Many families were affected and died of starvation.

Book of Project Ideas

Making better:

Accept all relevant responses.

Theme 5: Why Do We Need Systems?
Lesson-9: Our Life Supports

Main Coursebook

Re-KAP

Kinaesthetic:

Accept all relevant responses

Auditory:

1. There is 78% nitrogen present in the atmosphere.
2. Troposphere is the lowest layer of Earth.

Pictorial



✓ ✓ ☐



✓ ☐ ✓

Interacting better:

boat ship

Accept all relevant responses

Understanding better: (Page 66)

1. No 2. Yes

Understanding better: (Page 68)

1. False 2. True

Understanding better: (Page 70)

1. Yes 2. No

Learning better:

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

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

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. 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.

Creating better:

Accept all relevant responses

Thinking better:

Hot air is lighter than cold air because when air is heated, it spreads out and takes up more space, making it less dense. Since lighter things rise, hot air moves up and cold air, which is heavier, takes its place.

Choosing better:

2. She should immediately wash the stain on the dress with water and dry it in the air.

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

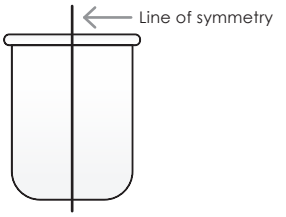
Book of Holistic Teaching

Developing better:

A. **English**

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

B. **Maths**



C. **Social Studies**

In India, the responsibility for improving and maintaining the quality of air and water primarily falls under the Central Government and State Governments.

Book of Project Ideas

Making better:

Accept all relevant responses.

Theme 6: Why Is Change Important?
Lesson-10: Safety and First aid

Main Coursebook

Re-KAP

Kinaesthetic:

Accept all relevant responses

Auditory:

1. When someone fall and hurt their arm or leg, make sure they don't move it too much. Call an adult right away.
2. Staying calm and knowing what to do can make a big difference in an emergency.

Pictorial


☐


✓


✓


✓

Interacting better:

Accept all relevant responses

Understanding better: (Pg 76)

1. True 2. False

Understanding better: (Pg 77)

1. Yes 2. No

Learning better:

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

B. 1. True 2. True 3. True
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 region usually requires different first aid.

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 of 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.

Creating better:

Accept all relevant responses

Thinking better:

Nurses and doctors wear face masks and gloves to stay clean and safe. These protect them and the patient from germs, keeping everyone healthy while giving care.

Choosing better:

1. They should call an adult for help.

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

Book of Holistic Teaching

Developing better:

A. **English**

1. an 2. a

B. **Maths**

The selling price of the first aid safety kit is ₹624.

C. **Social Studies**

The immediate cause of the First World War (1914-1918) was the assassination of Archduke Franz Ferdinand, the heir to the Austro-Hungarian throne. Sarajevo was the main city of Bosnia, which was part of the Austro-Hungarian Empire. Austria-Hungary and Serbia did not get along well for a long time. Some people in Serbia wanted all Serbians to be united and hoped those in Bosnia would break free from Austria-Hungary. On 28 June, 1914, a Bosnian Serbian shot and killed the nephew of the Austro-Hungarian emperor, Archduke Francis Ferdinand.

Book of Project Ideas

Making better:

Accept all relevant responses.

Theme 6: Why Is Change Important?

Lesson-11: All About Matter

Re-KAP

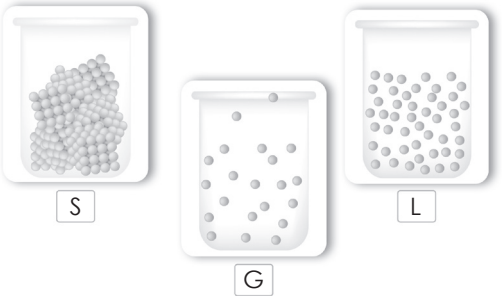
Kinaesthetic:

Accept all relevant responses

Auditory:

1. In liquids, the particles are a bit apart and can move. Therefore, they can take the shape of any container they are poured in.
2. In gases, the particles are wide apart and they can spread out easily anywhere.

Pictorial



Interacting better:

Table, chair and pen.

Accept all relevant responses

Understanding better: (Page 83)

1. False 2. True

Understanding better: (Page 84)

1. False 2. True

Learning better:

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

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

C. 1. Anything that occupies space and has weight is called matter.
2. Chemical change
3. A solution is formed when two or more substances are mixed together.

D. 1. (i) Miscible liquids: Some liquids dissolve easily in water. For example, milk can easily dissolve in water, water and vinegar can also mix with each other, water and juice also mixes up easily. Liquids that can dissolve in each other are called miscible liquids.

(ii) Immiscible liquids: Liquids that do not dissolve in each other are called immiscible liquids. For example, kerosene and diesel and coconut oil do not dissolve in water.

2. (i) Physical change: Physical change indicates change in the state of matter. This means from solid to liquid, liquid to gas or gas to solid. These changes are reversible and temporary in nature.

Examples: Solid wax turns into liquid on heating, melting of ice and tearing of paper.

(ii) Chemical change: A chemical change indicates a permanent change in the substance. In a chemical change, a completely new substance forms and we cannot get the old substance back.

Examples: Heating wood over fire changes it into ash, burning of wood, rusting of iron

Creating better:

Accept all relevant responses

Thinking better:

Gases can be compressed easily because their particles are far apart and can move closer together. Solids and liquids have particles that are much closer, so they cannot be compressed as easily.

Choosing better:

1. You should not participate at all.

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. dissolved

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. No 2. Yes 3. Yes 4. Yes 5. Yes

Book of Holistic Teaching

Developing better:

A. **English**

1. When a bee flies, it creates a buzzing sound.
2. Rushan helps his sister solve the puzzle.

B. **Maths**

The profit percent is 40%.

C. **Social Studies**

The atomic bombs were dropped on Hiroshima and Nagasaki in 1945 during the final stages of World War II.

- Hiroshima was bombed on August 6, 1945.
- Nagasaki was bombed on August 9, 1945.

Book of Project Ideas

Making better:

Accept all relevant responses.

Theme 7: Why Do We Need Support?

Lesson-12: Skeletal and Muscular Systems

Main Coursebook

Re-KAP

Kinaesthetic:

Accept all relevant responses

Auditory:

1. The skeletal and muscular systems work together to help our bodies move and stay strong.
2. The skeletal system is made up of bones that provide structure and support to our body.

Pictorial


I


☐


I


☐


I


I

Interacting better:

Accept all relevant responses

Understanding better: (Page 92)

1. True 2. False

Understanding better: (Page 93)

1. Gliding joint 2. Hinge joint

Understanding better: (Page 94)

1. No 2. No

Learning better:

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

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

C. 1. Our body is made up of different organs. When these organs work together and perform a specific function, it is called an organ system.

2. A joint is the meeting point of two bones, held together by strong tissue.

3. Floating ribs.

D. 1. Movable joints are the type of joints that can move and perform different movements. There are four types of movable joints these are as follows:

(i) Ball and socket joints: A bone ending in a ball gets fitted into the socket of the other one. For example, hip and shoulder joints.

(ii) Gliding joints: In this type of joint, one bone can slide over another. For example, joints present in the wrist.

(iii) Hinge joint: This type of joint help us to move our body only in a single direction. For example, joints present in the knee.

(iv) Pivot joint: This joint helps in side-to-side movement of the head. For example, joint present at the neck.

2. Muscles are divided into three categories - skeletal, smooth and cardiac muscles.

(i) Skeletal muscles are voluntary in nature and help us move our different body parts. For example, the muscles of the arms.

(ii) Smooth muscles are involuntary in nature and are present in our internal organs. For example, the muscles of the stomach.

(iii) Cardiac muscles are the involuntary muscles present in the heart.

Creating better:

Accept all relevant responses

Thinking better:

If humans had only muscles and no bones, we would not be able to stand straight or walk properly because bones give our body shape and support. Also, our internal organs like the heart and lungs would not be well-protected without the ribcage.

Choosing better:

2. He should keep a check that his grandmother drinks milk every day.

Students' Worksheets

Worksheet 1

A. 1. heart 2. heart 3. tongue
4. respiratory 5. different

B. 1. HEART 2. BRAIN 3. LUNGS
4. KIDNEYS 5. TONGUE

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

Worksheet 2

A. 1. 22
2. bones, joints and cartilage
3. 206 4. 12 pairs 5. 33

B. 1. SKULL 2. LIMB 3. GIRDLE
4. RIBCAGE 5. BACKBONE

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

Worksheet 3

A. 1. Our body has multiple joints.
2. A joint provides flexibility to the body.
3. The joints present in the skull are immovable.
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. joints provide stability and flexibility to the body
4. hinge joint is present at the knee and elbow
5. the ball and socket joint is present at the hip and shoulder

Book of Holistic Teaching

Developing better:

A. **English**
1. Joints flexibly connect bones, allowing a wide range of motion.
2. The muscles contract powerfully to generate movement in the skeletal system.

B. **Maths**

The cheetah took 2 hours or 120 minutes to return back.

C. **Social Studies**

The type of muscles used in planting trees are skeletal muscles.

Book of Project Ideas

Making better:

Accept all relevant responses.

Theme 7: Why Do We Need Support?
Lesson-13 Our Nervous System

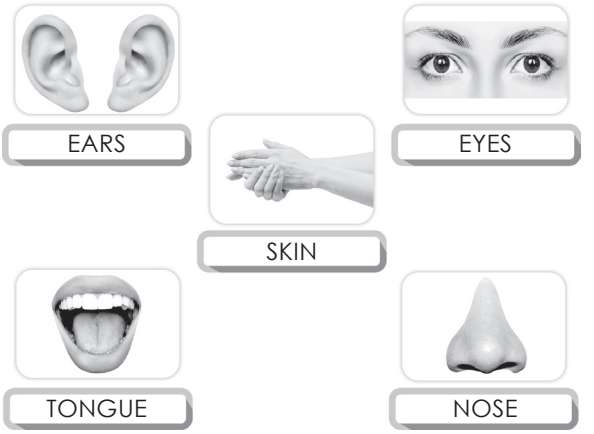
Main Coursebook

Kinaesthetic: Accept all relevant responses

Auditory:

1. The brain acts like a super computer that sends and receives messages.
2. The spinal cord is a long bundle of nerves that runs down our back, connecting the brain to the rest of the body.

Pictorial



Interacting better:

Accept all relevant responses

Understanding better: (Page 99)

1. True 2. False

Understanding better: (Page 101)

1. False 2. False

Learning better:

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 messengers between the brain and the body. They form a wide network that extends throughout 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. To protect ourselves from shocks and injuries, the body needs to respond quickly. Such types of quick responses are processed by the spinal cord. These actions are called reflex actions.

D. 1. The brain is the control centre of our body. Its main function is to collect from and send information to all the body parts with the help of nerves. A hard and bony skull protects our brain. Our brain is made up of three parts – the cerebrum, the cerebellum and the medulla.

Cerebrum

It is the largest part of our brain and constitutes around 80 per cent 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

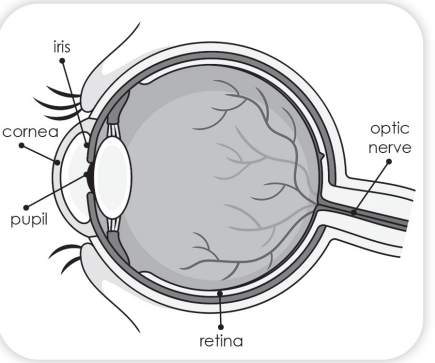
This part of the brain lies below the cerebrum. It helps in coordinating the muscle actions and balancing the body.

Medulla

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.

2. Eyes

Each eye is located in a deep pocket called the socket. It is protected by the eyelashes and eyelids. Both of these help keep dirt and dust away from our eyes. The front part of the eye consists of a circular and transparent area called the cornea. The coloured circle present at the front of the eye is called the iris. A black spot called the pupil is the opening through which light enters the eye lens. This light travels from the pupil to the retina, where the image is formed. Our eyes are connected to the brain through the optic nerves.

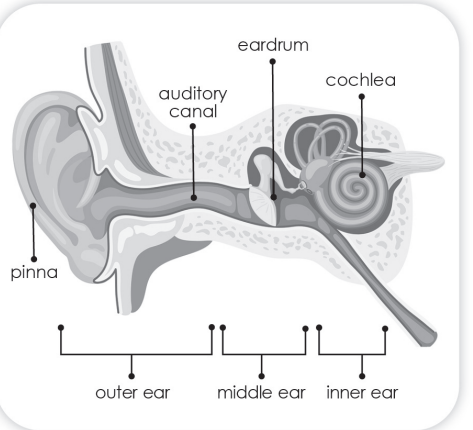


the structure of an eye

Ears

The ear has three parts – the outer ear, the middle ear and the inner ear.

The sound waves are received by the outer ear. The waves then travel to the middle ear, hitting the eardrum. The eardrum produces vibrations. These vibrations then travel to the inner ear. Inside the cochlea, tiny hair cells convert these vibrations into electrical signals. These electrical signals are sent to the brain through the auditory nerve. The brain receives the signals and interprets them as sound, allowing us to hear and understand the noises around us.



the structure of an ear

Creating better:

Accept all relevant responses

Thinking better:

If we did not have reflex actions, our body would take longer to react to sudden dangers, like pulling away from something hot or sharp. This delay could cause more injuries because our brain would need extra time to process and respond.

Choosing better:

1. She should tell her parents how she feels and needs support.

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

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

Book of Holistic Teaching

Developing better:

A. **English**

1. We can smell different things through our nose.
2. Our eyes can have irritation due to dirt and smoke particles.

B. **Maths**

The average temperature of the human body ranges from 33.5 °C to 36.9 °C.

C. **Social Studies**

The Chipko Movement began in the 1970s as a protest against the forest contractors.

Book of Project Ideas

Making better:

Accept all relevant responses.

Theme 8: Why Is Technology Important?

Lesson-14 The Earth's Satellite

Main Coursebook

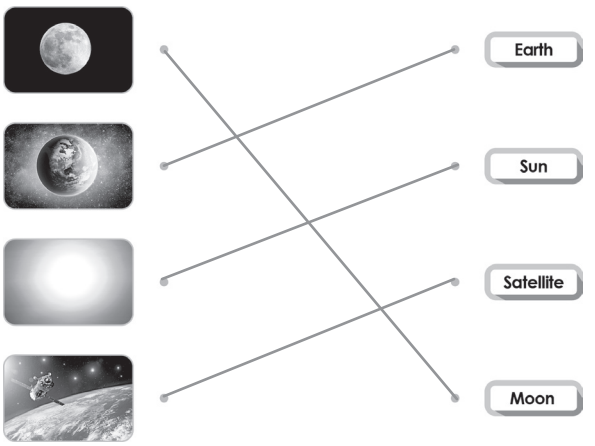
Re-KAP

Kinaesthetic:

Accept all relevant responses

Auditory: The two Indian satellites are Aryabhata and APPLE.

Pictorial



Interacting better:

Accept all relevant responses

Understanding better: (Page 106)

1. Yes 2. No

Understanding better: (Page 108)

1. True 2. False

Learning better:

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

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

C. 1. The surface of the Moon is rough due to big, round and hollow structures called craters.
2. There is no air and water on the Moon. So, no life exists there.
3. Rakesh Sharma

D. 1. **Lunar eclipse**

In a lunar eclipse, the Earth casts a shadow on the Moon, as the Earth comes in between the Sun and the Moon. In a partial lunar eclipse, the Moon is only partly hidden by the dark shadow of the Earth. In a total lunar eclipse, the Moon is completely in the dark shadow of the Earth. A lunar eclipse occurs at night.

Solar eclipse

In a solar eclipse, the Moon casts a shadow on the Earth as the Moon comes between the Sun and the Earth. In a partial solar eclipse, the Sun is only partly hidden by the dark shadow of the Moon. In a 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 human-made objects. In 1957, the first human-made satellite, Sputnik 1, was launched in to space by Russia (then, USSR). Aryabhata was the first Indian satellite launched in 1975. Some other Indian satellites are APPLE, INSAT-1B, INSAT-2A, INSAT-2B, Oceansat and IRNSS-1A.

Uses

Artificial satellites were initially designed for scientific research. Now these satellites are also used for communication, weather forecasts, navigation, observation, space exploration, etc.

Creating better:

Accept all relevant responses

Thinking better:

If the Moon were closer, the tides would be stronger, with very high waves. If the Moon were farther, the tides would be weaker. Tides help sea animals and keep the beaches and oceans clean.

Choosing better:

2. They should wear eclipse glasses and then look at the Sun.

Students' Worksheets

Worksheet 1

A. 1. Moon 2. 3,84,400 3. Moon
4. satellite 5. closer

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

Book of Holistic Teaching

Developing better:

A. **English**

1. **In:** The Moon revolves around the Earth in its orbit.
2. **Under:** Under the Moon's glow, the ocean tides rise and fall.

B. **Maths**

Distance between the Sun and Moon is 149,615,600 km.

C. **Social Studies**

Three factors that influence the climate are as follows:

1. **Distance from the Equator:** The Sun's rays fall on the surface of the Earth. Near the equator, these rays are direct and are spread over a small area. As we move away from the equator and towards the poles, the rays become weak.As a result, places near the equator such as Indonesia, Kenya and Brazil, are hotter than those which are located away from the equator.
2. **Height above the sea level (altitude):** Hill stations, such as Shimla, Nainital, Ooty and Darjeeling, remain cool even in summer. Places located at higher altitudes are colder than those at lower altitudes even if they are situated on the same latitude.
3. **Direction of winds:** Winds blowing from hot regions increase the temperature of a place, while those blowing from cold regions decrease the temperature. So, as a result, Delhi is hot in summer due to the dry, hot winds that blow from Rajasthan. In winter, cold winds from the Himalayas make northern India very cold.

Book of Project Ideas

Making better:

Accept all relevant responses.

Theme 9: Why Do We Look Ahead?
Lesson-15 Artificial Intelligence

Main Coursebook

Re-KAP

Kinaesthetic:

Accept all relevant responses

Auditory:

1. The name of little robot is Lucy.
2. By flipping the switch, we can turnoff the robot.

Pictorial


✓


✓


☐


☐


✓


☐

Interacting better:

Accept all relevant responses

Understanding better: (Page 115)

1. No 2. Yes

Learning better:

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

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

C. 1. A self-driving car is a vehicle that uses AI to sense its 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. A smart speaker is a voice-activated speaker that uses AI to perform everyday tasks. These devices typically connect to the internet via Wi-Fi.

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 which uses AI are mentioned below.
Humanoids:
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.
Smart speaker:
A smart speaker is a voice-activated speaker that uses AI to perform everyday tasks. These devices typically connect to the internet via Wi-Fi.
Futuristic space travel
The arrival of the concept of space tourism has made big companies use AI to work towards making space travel cheaper and safer even for the common people. Futuristic space travel involves physical exploration of space by human spaceflights or by robotic spacecrafts.

Creating better:

Accept all relevant responses

Thinking better:

Artificial intelligence (AI) can do tasks like solving maths problems quickly and working for long hours without getting tired. Humans are better: at showing feelings, being creative and making decisions based on emotions. This is because AI follows set rules, while humans think and feel in unique ways.

Choosing better:

2. Fitness

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

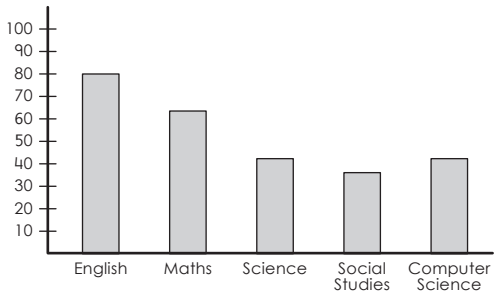
Book of Holistic Teaching

Developing better:

A. **English**

1. Artificial intelligence will lead to a bright future for the future generations.
2. The unique feature of artificial intelligence is to understand and analyse data.

B. **Maths**



C. **Social Studies**

With the help of technology, smartphones or mobile phones are able to perform multiple functions. These include: a smartphone is similar to that of a computer. In addition to making calls, smartphones can be used to send and receive text messages and emails through the Internet. A smartphone helps us in locating a place, through digital maps. We may listen to music or watch movies online. We can also read eBooks on a smartphone. These days, some smartphone applications also allow one to send or receive money, without going to a bank or an ATM.

Book of Project Ideas

Making better:

Accept all relevant responses.