Answers

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.

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Making better:

Accept all relevant responses.

Answers

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

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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

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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.

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Making better:

Accept all relevant responses.