Answers

Theme 3: How Do We Adapt?
Lesson-4: Plants – Food Preparation and Storage

Main Coursebook

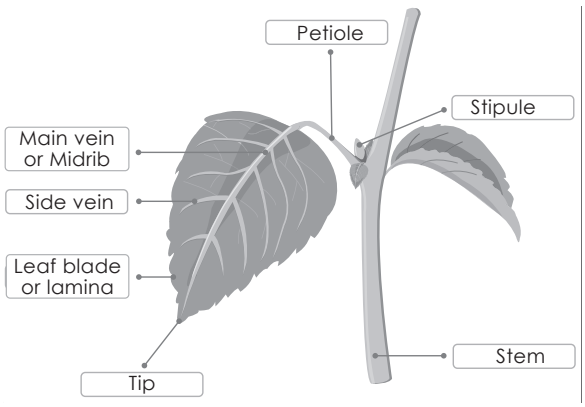
Kinaesthetic:

Accept all relevant responses.

Auditory:

Piku's roots lived deep in the soil, drinking water to help Piku grow strong.

Pictorial:



Interacting better:

Accept all relevant responses.

Understanding better (Page 27)

1. Chlorophyll
2. The extra food is stored in plants in the form of starch.

Understanding better (Page 28)

1. No
2. Yes

Learning better

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

B. 1. b 2. e 3. d
4. c 5. a

C. 1. On the under side of the leaf, there are some small openings or pores. These are called stomata. Through the stomata, leaves take in water and carbon dioxide and give out oxygen and water vapour.

2. Indoor plants

3. Human beings and animals need energy to perform various functions. This energy is supplied by the food we eat. Green plants use sunlight to prepare food through photosynthesis. That food helps them grow. The plants are consumed by humans beings and animals. Therefore, energy is transferred from the Sun to plants and then to animals and human beings.

D. 1. During photosynthesis ('photo' means light and 'synthesis' means putting together), plants absorb sunlight with the help of chlorophyll. Green leaves convert air and water into food, in the presence of sunlight. This food is produced in the form of simple sugar (glucose).

2. Some special plants are as follows:

Insectivorous plants

Insectivorous plants such as the venus flytrap and pitcher plant, feed on insects for their food requirements. The leaf of a venus flytrap is folded into two halves. When an insect comes and sits on the leaf, the two halves close and the insect gets trapped inside.

Parasitic plants

Parasitic plants depend on other plants for their food requirements. Such plants cannot perform photosynthesis as they have no chlorophyll. They grow on other plants and get the required nutrients from the host plant. For example, yellow rattle, dodder, broomrape and rafflesia.

Creating better:

Accept all relevant responses.

Thinking better:

Plants, like carrots, store their food in their roots, and others, like beans, store it in their seeds. Here's how these storage methods help:

1. **Roots (like carrots):** When plants store food in their roots, it helps them survive during the winter or dry seasons. The root stores food in the form of starch, which is like a plant's "energy reserve." When the plant needs food to grow or start new leaves, it can use the stored food from the root to get energy and start growing again when conditions are better.
2. **Seeds (like beans):** In seeds, plants store food to help the baby plant grow when it first starts. When a seed is planted and starts to sprout, it needs food before it can make its own through sunlight. The food stored in the seed helps the plant grow until it has enough leaves to make its own food from the sun.

Choosing better:

2. Richa should ask the teacher for help if she doesn't understand something.

Students' Worksheets

Worksheet 1

A. 1. Green 2. Chlorophyll
3. sunlight 4. kitchen
5. above

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

C. 1. → b 2. → e 3. → a
4. → d 5. → c

Worksheet 2

A. 1. ROOT 2. LEAVES
3. CHLOROPHYLL 4. WATER
5. SUNLIGHT

B. 1. green
2. absorption
3. Stomata
4. water, carbon dioxide
5. oxygen, water vapours

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

Worksheet 3

A. 1. Cactus and agave.
2. They depend on dead and decaying plants and animals for their food.
3. Due to the presence of a red substance that hides the green colour from chlorophyll.
4. Venus flytrap feeds on insects for its food requirements.
5. Yellow rattle, dodder and broomrape.

B. 1. → e 2. → b 3. → a
4. → c 5. → d

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

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Developing better

A. **English:** Sunlight, night

B. **Maths:** Rahul arranged all the 60 trees in 6 rows.

C. **Social Studies:** Ashoka tree

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Making better

Accept all relevant responses.

Answers

Theme 3: How Do We Adapt?
Lesson-5: Plants – Adaptation and Survival

Main Coursebook

Kinaesthetic:

Accept all relevant responses.

Auditory:

1. The colour of Chotu's leaves is bright green.
2. Leaves have different shapes, like they can be round or long.

Pictorial


Lotus leaf


Peepal leaf


Maple leaf


Oak tree leaves


Pine tree leaves


Croton leaf

Interacting better:

Accept all relevant responses.

Understanding better (Page 34)

1. No
2. Yes

Understanding better (Page 35)

1. Water lily
2. Hydrilla

Understanding better (Page 36)

1. Cactus
2. Rice

Learning better

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

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

C. 1. The word 'terrestrial' means living on land. Thus, terrestrial plants are the plants that grow on land. For example, rubber, cotton, etc.

2. The roots of plants in marshy areas grow outside the soil for air, as air cannot penetrate the clayey soil.

3. The two uses of plants of the grass family are given as follows:
   (i) Some plants of this family provide food for human beings and animals, such as wheat, jowar and rice.
   (ii) Plants, such as bamboo, are used to make different things, like baskets, chairs, brooms, mats and toys.

D. 1. Terrestrial habitats include hills, mountains, plains, deserts, marshes, hot and damp areas.
   a. Trees found in hilly and mountainous areas are usually straight and tall. Such trees have needle-like leaves. As the mountains experience snowfall, leaves of these trees let the snow slip off the trees.
   b. Trees in the plains have many branches and leaves. These trees can tolerate heat and can grow in warm climates. Leaves of these trees are flat and lose water to keep the tree cool in summers. However in winter, these leaves shed off to prevent loss of water.
   c. Many plants that grow in hot and damp areas also have big, broad leaves. This helps them absorb more sunlight and lose extra water when it is very humid. To protect themselves from too much water, some plants have a waxy coating on their leaves. This helps keep the right amount of water inside.
   d. Plants in deserts do not have any leaves. This helps reduce any loss of water through them. Such plants have spines in place of leaves. These plants prepare their food in the green and fleshy stems as the stems contain chlorophyll. The stems are also used for storing water in such plants.

2. Various adaptations exhibited by aquatic plants are as follows:
   a. Floating plants: As the name suggests, floating plants float on water. They are light in weight and small in size. Such plants help in protecting small water animals from the direct heat of the Sun. Examples include, water lettuce, duckweed and water hyacinth.
   b. Fixed plants: These plants remain fixed to the water bed, for example, water lily and lotus. These plants have hollow and light stem, letting the leaves and flowers float on the surface of the water. Such floating leaves act

as a nesting place for small birds.

c. Underwater plants: These plants are completely submerged in water. Such plants have narrow, long and ribbon-like leaves. These plants remove the carbon dioxide exhaled by aquatic animals through photosynthesis, thereby helping clean the water. Examples of such plants include tape grass, pondweed and hydrilla.

Creating better:

Accept all relevant responses.

Thinking better:

If a plant that usually grows in wet areas is moved to a dry, hot place to survive the plant would need to develop features that help it keep water, store energy and protect itself from the heat. Here are some changes the plant might need to make:

a. Roots: The plant would need to grow deeper or wider roots to find water underground. In a dry place, the water is often deep, so the plant's roots need to reach it.

b. Leaves: The plant might need to shrink or lose its leaves because leaves lose water through tiny holes called stomata. In a dry place, it's important to keep water inside, so the plant might have fewer or smaller leaves to reduce water loss.

c. Thicker skin or waxy coating: The plant might develop a waxy coating or thicker skin on its leaves or stem. This helps prevent water from escaping, just like a waterproof jacket helps keep you dry in the rain.

d. Storage: The plant could start to store water in its stem, leaves, or roots, like a cactus does. This helps it survive when there is not much rain.

e. Flowers and seeds: The plant may change how it flowers or makes seeds. It might only flower when there is rain, or the seeds might be able to wait for the right conditions to grow.

Choosing better:

1. Stop the child from plucking flower and leaves.

Students' Worksheets

Worksheet 1

A. 1. habitat 2. Terrestrial
3. Accept all relevant responses.
4. hilly 5. branches, leaves

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

C. 1. → e 2. → a 3. → c
4. → b 5. → d

Worksheet 2

A. 1. needle-like 2. Evergreen 3. spines
4. marshy 5. mangroves

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

C. 1. DAMP 2. PLAINS 3. TERRESTRIAL
4. DESERT 5. MARSHY

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Developing better

A. **English**:

1. Jogita plants bamboo trees in the backyard of her house.
2. The gardener waters the plants.

B. **Maths:**

There will be 20 flowers in one garden.

C. **Social Studies:**

The Ashoka tree has many medicinal properties like its bark, flowers and leaves are used in Ayurvedic treatments to treat conditions like menstrual disorders, inflammation and digestive issues.
Yes, Ashoka tree is used as a symbol of peace, prosperity and harmony.

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Accept all relevant responses.