Orient BlackSwan

Inspired SCIENCE

For the CISCE curriculum

NEP Compliant inside

3

WITH APP

Inspired Science

has been developed in accordance with the CISCE Primary Science curriculum. Its aims are:

- to enable students to relate their daily life experiences and science by following a practical, thematic approach
- to focus on the development of scientific temper through skill and process development
- to encourage knowledge construction through information collection, organisation and reflection

Students' book

- complete syllabus coverage
- carefully graded text
- appropriate, well-labelled illustrations and photographs
- appropriate activities and exercises

Let's learn

Learning outcomes
encourage students to take responsibility for their learning

Get going
helps focus and direct students' attention to the lesson

Activities
help students learn through practical exercises

Stop and check
provides checkpoints for teachers and students to evaluate progress

Spotlight
focuses on important topics in greater detail

Go further
provides additional, interesting, relevant information

Science and life
links scientific concepts with real life occurrences and applications

Eco corner
presents issues that are an environmental concern

Let's revise

In a nutshell
is a comprehensive revision corner

Concept map
is a graphic presentation of concepts linked logically

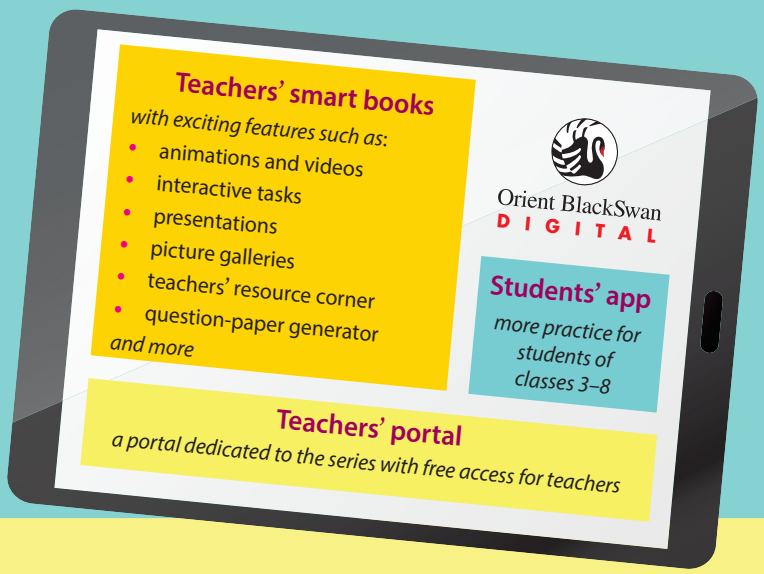
Summary
lists the main points of the lesson briefly

Keywords
lists important words and their definitions

Glossary
presents important words for quick revision at the end of the book

Teachers' resource packs

- lesson plans
- question bank with answers
- worksheets with answer key
- activities for internal assessment
- question papers with answer key
- answer key to the exercises in the students' book



Let's apply

Checkpoint
covers a variety of exercises (objective type, short answer and long answer)

Think and answer
encourages students to develop higher-order thinking skills necessary for the 21st century

Picture study
offers picture-based questions that encourage students to observe, identify and relate concepts to real life

Hands-on
offers a variety of projects that reinforce 21st century skills through experiments, model-making, discussion, role-play, research work, report writing and so on

Subject integration
presents additional activities explicitly linking multiple subjects

Life skills and values
help children develop skills needed for everyday life and values needed to be well-adjusted members of society

Let's know more

Scientist in focus
describes the life and work of famous scientists to inspire students

Heritage corner
presents exciting and accurate information on India's scientific heritage

Internet links
provides sources for further study and research

Let's work

- ***Worksheets*** a workbook corner with worksheets covering all lessons
- ***Test papers*** based on the ICSE pattern

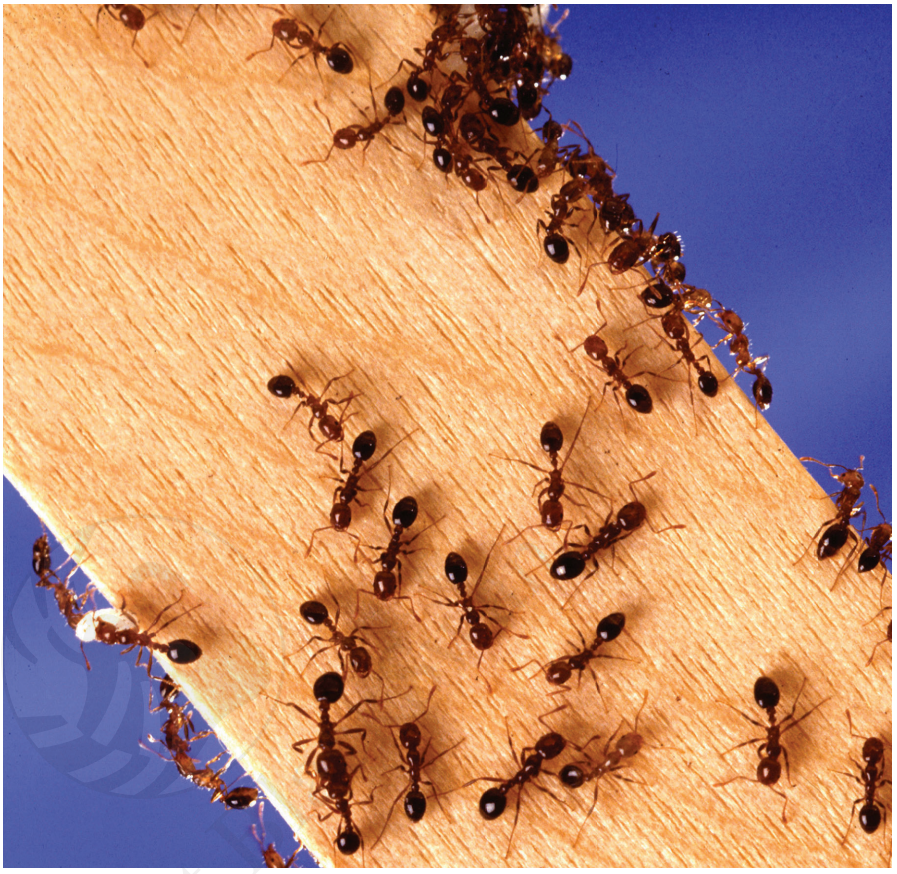
CONTENTS

4 Animals: Common Insects

Learning outcomes

By the end of this theme, you will be able to:

- identify some common insects found in and around the home
- draw and label the main parts of an insect
- describe insect life cycles
- explain what social insects are
- describe helpful and harmful insects
- discuss remedies for the harmful effects of some insects



Get going

Place a spoonful of sugar in a corner outside your house. After a few minutes, which animals will you probably see carrying away the sugar in a line?

INTRODUCTION

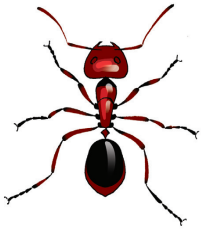
Insects are the largest group of animals. Thousands and thousands of kinds of insects live on the Earth. We can find them everywhere, in deserts, forests and even in our homes.

Activity

Collect pictures of insects and paste them in your scrapbook. Write the name and some facts you can find out under each insect's picture.

SOME COMMON INSECTS

Insects like ants, flies, mosquitoes and cockroaches are found inside the house. Some other common insects we see outside are bees, butterflies, grasshoppers, dragonflies, beetles, ladybirds and termites (also called white ants.)



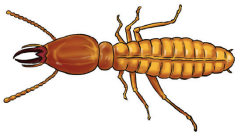
Ant

Mosquito

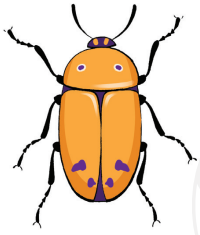
Fly

Honeybee

Ladybird



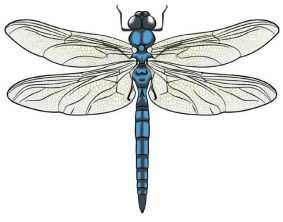
Termite



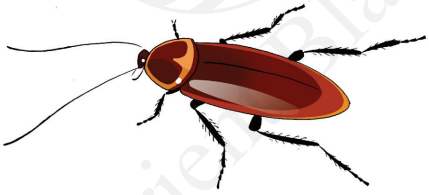
Beetle

Grasshopper

Butterfly



Dragonfly



Cockroach

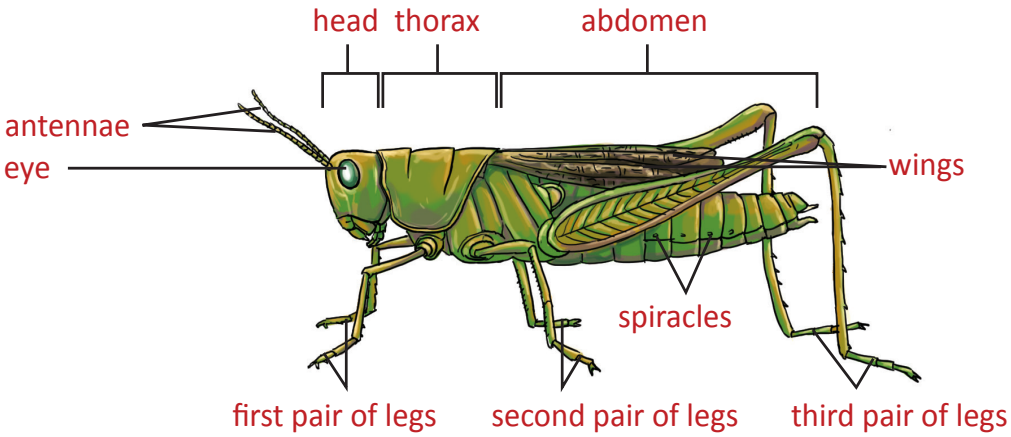
Activity

Work in groups. Go to a garden or park and identify four or five insects. Discuss in class:

- Are all of them tiny?
- Do they look the same?
- Can they all fly?

BODY PARTS OF AN INSECT

All insects have three pairs of legs. Some of them have wings (one or two pairs). Insects do not have bones inside their body like we do. They have a hard outer covering made of a substance called **chitin** (pronounced 'kaitin') which protects their soft internal organs.



Body parts of an insect

The body of an insect is divided into three sections—**head**, **thorax** and **abdomen**.

Head The head carries the eyes, mouthparts and **antennae** (**feelers**). Each kind of insect has different types of mouthparts based on what it eats. Insects use their feelers to feel, hear, smell, taste and so on.

Thorax This forms the middle part of the insect's body. The legs and wings are attached to the thorax.

Abdomen This is the last part of the insect's body. The thorax and abdomen have **spiracles**, through which the insect breathes.

Go further...

The eyes of insects are different from our eyes. They are made of many small eyes and are called **compound eyes**.

The compound eyes of an insect

Stop and check

Answer the following questions.

1. Name three insects that you usually see at home.
2. How many legs does an insect have?
3. What is the hard outer covering of insects made of?
4. What are spiracles? Where are they found?

Subject integration

(Languages)

Bees and butterflies drink nectar (a sweet juice) from flowers. Write a short paragraph on a bee or a butterfly talking about their food in a field full of flowers.

Go further...

Observe the leaves and stems of plants in a garden. You may find groups of white specks on them. These are probably insect eggs.

LIFE CYCLES OF INSECTS

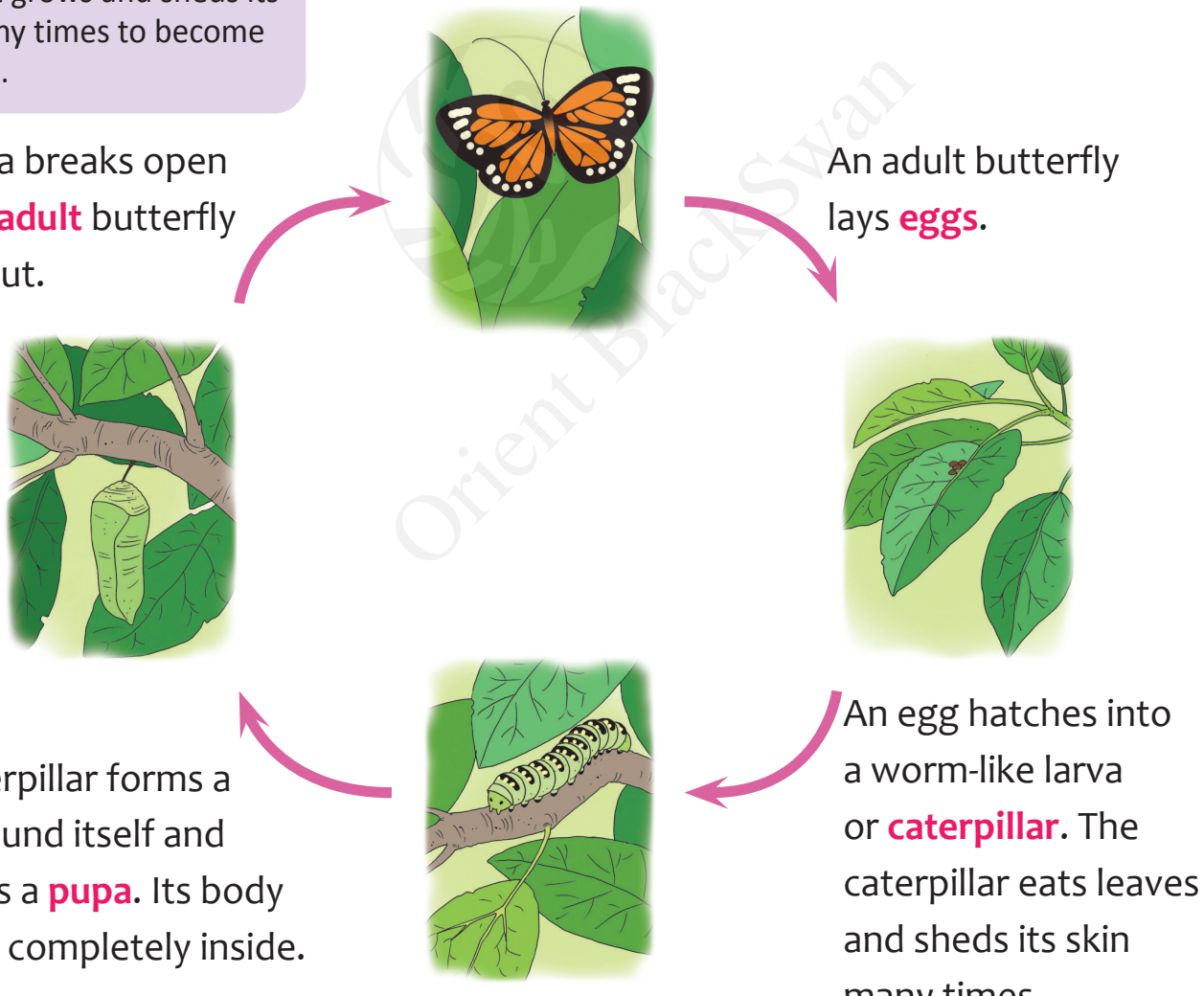
The many changes that take place in the life of a living thing form its ***life cycle***. Humans have the same body shape throughout their life. But the bodies of insects change completely as they grow.

Go further...

Insects like cockroaches and termites have only three stages in their life cycles. The young one that comes out of the egg looks like an adult but does not have wings. It grows and sheds its skin many times to become an adult.

Life Cycle of the Butterfly and Honeybee

The butterfly has four stages—**egg**, **larva** or **caterpillar**, **pupa** and **adult**—in its life cycle. The life cycle of the honeybee is similar to that of the butterfly, with four stages.



An adult butterfly lays **eggs**.

An egg hatches into a worm-like larva or **caterpillar**. The caterpillar eats leaves and sheds its skin many times.

The caterpillar forms a shell around itself and becomes a **pupa**. Its body changes completely inside.

The pupa breaks open and the **adult** butterfly comes out.

Life cycle of a butterfly

SOCIAL INSECTS

Some insects live in large family groups called **colonies**, which have hundreds or even thousands of insects. These insects are called **social insects**. Ants, honeybees, wasps and termites are some examples of social insects.

A colony of ants has a **queen ant**, a few **males** and many **worker ants** (which are all female). The main function of the queen ant and the males is to reproduce. The worker ants build, protect and take care of the **anthill**, search for food, look after the young ones and so on.

Similarly, a beehive has a **queen bee**, a few **drones** (males) and many **worker bees** (females). Only the queen lays eggs in a colony of social insects.

Two ants working together

Bees in a beehive

HELPFUL INSECTS

Many insects help us and the environment.

- Insects like butterflies, bees and wasps help flowers to become fruits.
- Insects like the dragonfly and praying mantis eat harmful insects.
- Honeybees make honey and beeswax (used to make candles). Silkworms make silk.
- Insects like beetles eat dead plants and animals and thus clean up the surroundings.
- Insects are food for many larger animals like birds, lizards and frogs.

Praying mantis

A chameleon catching an insect

HARMFUL INSECTS

Louse

Wasp

Some insects can harm us.

- Insects like mosquitoes, lice and bedbugs bite us and drink our blood. Their bites cause itching[1] and rashes,[2] and can spread diseases. Mosquitoes spread **malaria**, **dengue** (pronounced 'dengi') and **chikungunya**.
- When flies and cockroaches sit on garbage and then food, they spread **germs** that cause diseases.
- Insects like bees and wasps may **sting** us if we disturb them. The sting may be painful and cause allergies.[3]
- Insects like **aphids** eat the leaves of plants, thus harming them.
- Moths and silverfish destroy clothes and paper.
- Termites eat plant roots and wood in buildings, causing a lot of damage.

Dealing with Harmful Insects

You can follow some steps to prevent and treat the harmful effects of insects.

Keeping insects away

- Keep your surroundings clean and disinfected.
- Make sure that the drains in and around your home are closed. This will stop cockroaches from spreading.
- Keep garbage bins closed so that flies and

Go further...

Some insects may be harmful to us, but they are important in nature. For example, bees are important for many plants to produce fruits and seeds. Termites turn fallen wood into soil and also turn the soil. Many insects are food for larger animals such as lizards and birds.

[1] **itching** a feeling that makes you watch to scratch
[2] **rash** a red area on the skin
[3] **allergy** a reaction by the body to a substance, for example a food or dust

cockroaches cannot get in.

- Do not allow water to collect anywhere. Mosquitoes lay their eggs in still water.
- Apply **insect repellent** to keep insects away.
- Wear clothes that cover your arms and legs to avoid being bitten by insects.
- Sleep inside a mosquito net to prevent mosquito bites at night.
- Do not disturb the insects—they may bite or sting.
- Use dried neem leaves or **mothballs** in cupboards to keep moths and silverfish away.
- Use insecticides[4] to control cockroaches and ants. Use them with care, since they can harm us.

Activity

Have a discussion in class on the harmful insects you find in your homes and the methods used by your family to control them.

Treating insect stings and bites

- If you have been stung by a bee, ask an adult to first remove the stinger from your skin with the edge of a bank card or a similar flat object.
- Place an ice pack on the bitten/stung part for some time till the itching, pain and redness go down.
- You may have to take **anti-allergy medicine** to prevent allergies.
- Apply **calamine lotion** to an insect bite (such as mosquito bite) if the itching is bad.

Science and life

Some people may have a very bad allergy to insect stings. It may be so bad that they stop breathing. So always call an adult as soon as you can if you or any of your friends get stung by an insect.

Stop and check

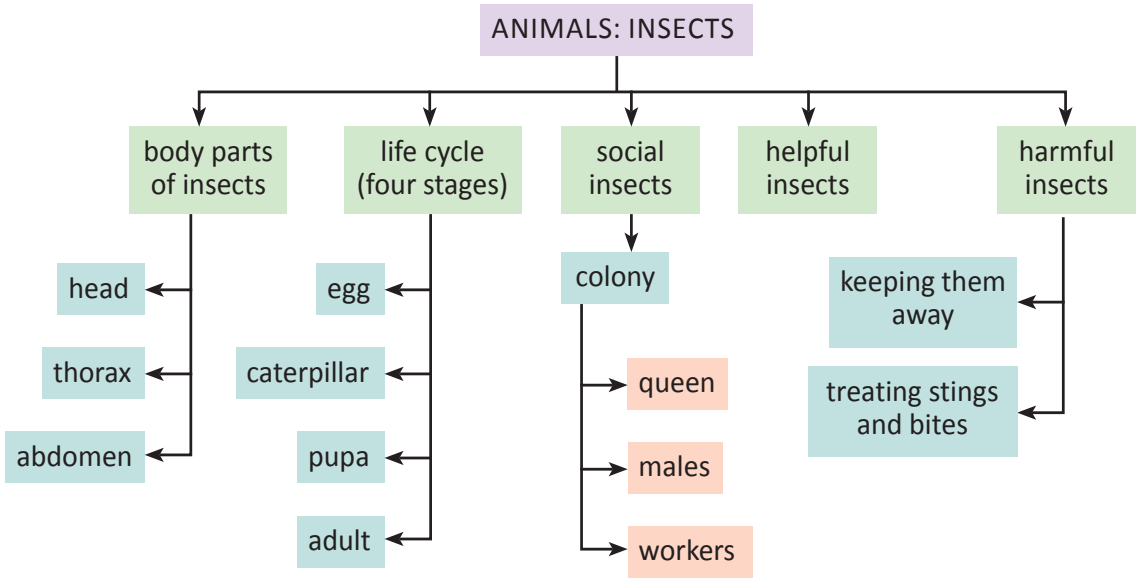
Answer the following questions.

1. How many stages are there in the life cycle of a butterfly?
2. Name two social insects.
3. A bee can be useful as well as harmful. Explain how.

[4]**insecticide** a chemical that kills insects

In a nutshell

CONCEPT MAP



SUMMARY

- Ants, beetles, mosquitoes, flies, honeybees, ladybirds, termites, grasshoppers, dragonflies, cockroaches and butterflies are some common insects found around us.
- The body of an insect is divided into head, thorax and abdomen. Insects have antennae (feelers) and three pairs of legs. They may have one or two pairs of wings.
- Most insects like the butterfly and honeybee have four stages in their life cycle—egg, caterpillar, pupa and adult.
- Ants, honeybees, wasps and termites are social insects.
- Some insects help us and the environment. Some insects harm us.
- We can keep insects away by keeping our surroundings clean and dry, covering our body and using neem leaves or chemicals.
- We can treat insect stings and bites by first removing the stinger and then using an ice pack, calamine lotion and anti-allergy medicine.

KEYWORDS

caterpillar the worm-like young one of some insects

chitin the substance that makes up the outer covering of an insect's body

colony a group of living things of the same kind living together

drone a male bee

life cycle all the stages in the life of a living thing

pupa the stage in an insect's life cycle in which it has a shell-like covering

social insect an insect that lives in a colony

thorax the middle part of an insect's body

CHECKPOINT

A. Choose the correct option.

1. Which of the following is **not** an insect?
   a) dragonfly b) earthworm c) beetle d) ant
2. Insects breathe through _____.
   a) their skin b) lungs c) spiracles d) gills
3. Which of the following do we get from insects?
   a) wool b) honey c) paper d) mothballs
4. Which of the following diseases is spread by mosquitoes?
   a) malaria b) chickenpox c) measles d) typhoid
5. _____ eat plant roots and wood.
   a) Houseflies b) Termites c) Mosquitoes d) Dragonflies

B. Say if the statements are true or false. Correct the false statements.

1. The body of an insect is divided into head, thorax and abdomen.
2. All insects have two pairs of feelers and two pairs of legs.
3. A butterfly has three stages in its life cycle.
4. Mosquitoes and flies cause harm to humans.

C. Short-answer questions

1. What protects the soft body of insects? What is it made of?
2. What do insects use their feelers for?
3. Name the four stages in the life cycle of a honeybee.
4. How does a praying mantis help us?

D. Long-answer questions

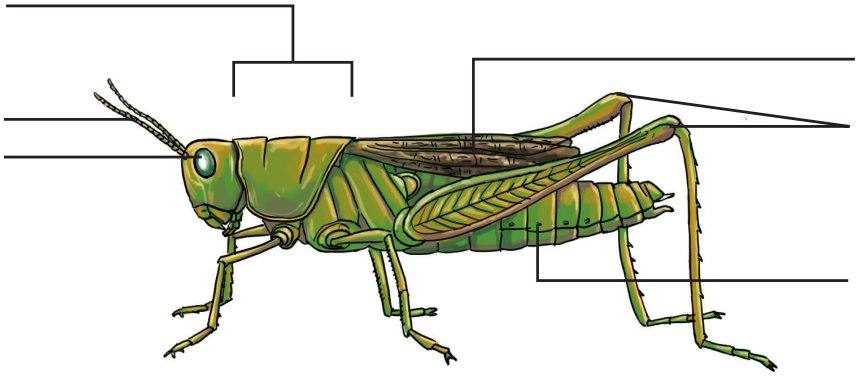
1. Name three insects that we find inside our houses and three that we find outside.
2. Describe the life cycle of a butterfly.
3. What are the functions of the different types of ants in a colony?
4. Describe three things you can do to stop being bitten by mosquitoes.

Think and Answer

How does the colour of grasshoppers (green or brown) protect them from birds?

Picture Study

Label the parts marked in the picture given.

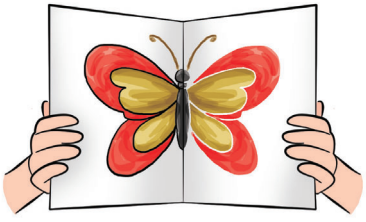


Life Skills and Values

1. Suppose your friend is stung by a bee. How will you help?
2. Read the story *The Ant and the Grasshopper*. What can you learn from it?

Hands-on

1. Fold a piece of chart paper in half. Open it out and draw the outline of half a butterfly on one side. Place blobs of different coloured paint inside the outline. Fold the paper again and rub over it to spread the paint. Open it up again to see your complete butterfly! Complete the picture with eyes and feelers. Hang up everyone's butterflies in class.



2. Find out more about the life cycle of bees or ants, and write a short report on it.
3. Form groups of five and find out how insects are important to nature. Make a poster on why we should protect insects. Display your posters on the notice board.

Internet Links

https://www.natgeokids.com/uk/discover/animals/insects/15-facts-about-bugs/
https://kids.nationalgeographic.com/animals/hubs/insects/

5 Plants in the Surroundings

Learning outcomes

By the end of this theme, you will be able to:

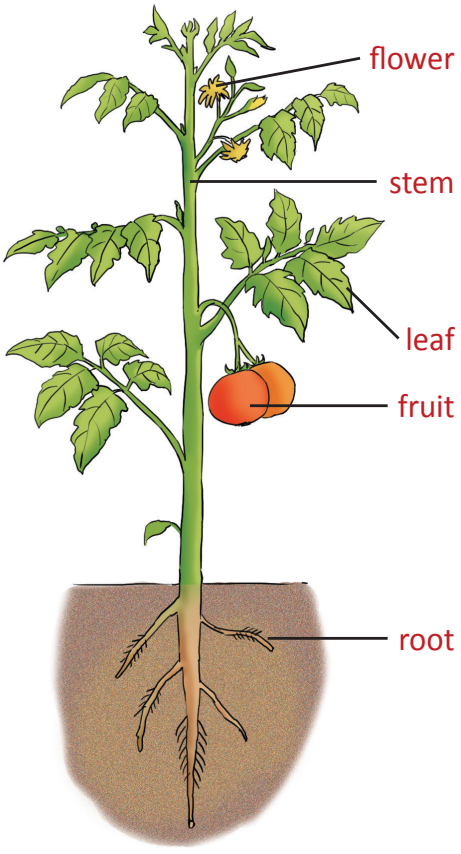
- describe the different parts of a plant with their functions
- describe where the seed is found in a plant
- describe the parts of a seed and identify different kinds of seeds
- explain how seeds germinate
- suggest ways in which we can care for plants

Get going

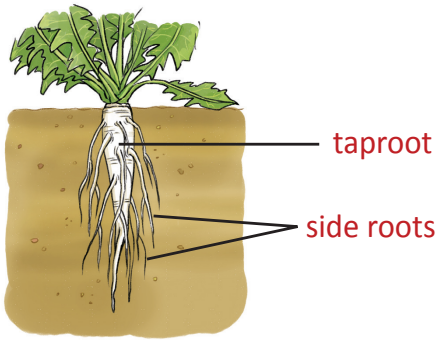
Look at the picture of a rose plant. What are the bright pink parts of the plant called? What are the flat green parts called? Can you see the same parts in other plants around you? Discuss this with your classmates.

INTRODUCTION

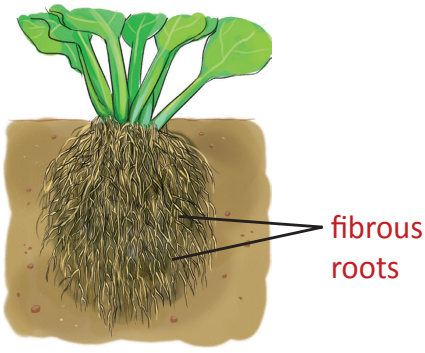
Plants grow in different parts of the world—on mountains, in deserts, in very cold places and even under water. They may be big or small, weak or strong, and may look very different from each other. Let us learn about plants in our surroundings.



Parts of a plant



Taproot system



Fibrous root system

PARTS OF A PLANT

A plant is made up of two **systems**—the root system and the shoot system. *The part of the plant that grows in the ground is the* ***root system***. It includes the roots. *The part of the plant that grows above the ground is the* ***shoot system***. It includes the stem, leaves, flowers and fruits with seeds.

THE ROOT SYSTEM

There are two types of root systems.

Taproot system In the taproot system, one main thick root called a **taproot** grows from the end of the stem. Many thin roots grow from the taproot. Mango, neem, rose and pea plants have taproots.

Fibrous root system In the fibrous root system, many thin roots grow from the end of the stem. Grass, wheat and rice have fibrous roots.

Functions of Roots

- Roots help the plant to take in water and nutrients[1] from the soil.
- Roots help to fix the plant in the soil.
- The roots of some plants also store food. Examples are carrots, beetroots and turnips.

Stop and check

Answer the following questions.

1. What are the two systems that make up a plant?
2. Name two plants that have fibrous roots.

[1]**nutrient** a substance that helps in growth

THE SHOOT SYSTEM

The Stem

The stem is the main part of the plant that usually grows above the soil. The types of stems are:

- **Thick, hard and woody stem** This kind of stem is called a **trunk**. Trees such as the mango and coconut have trunks.
- **Thin and hard stem** This is found in rose and hibiscus plants.
- **Soft and green stem** This is found in coriander and tomato plants.
- **Weak stem** Plants such as the pea and grapevine have weak stems that need support to grow upright. The pumpkin plant too has a weak stem and grows along the ground.

Coriander has a soft, green stem.

Grapevine growing along wires

Functions of the stem

- The stem supports the rest of the plant.
- The leaves, flowers and fruits grow from the stem.
- The stem carries water from the roots and food from the leaves to other parts of the plant.
- The stems of some plants such as the sugar cane store food. The potato and ginger are underground stems that store food.

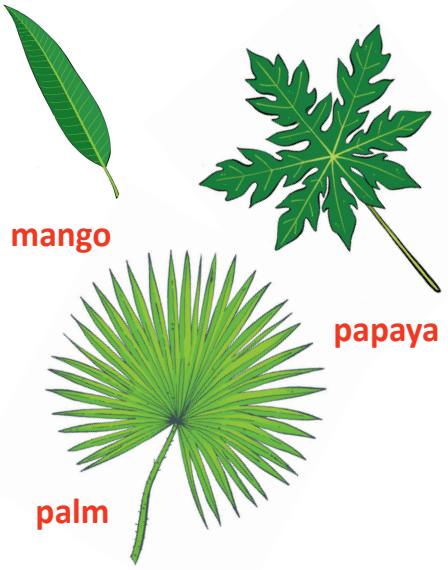
sugar cane

ginger

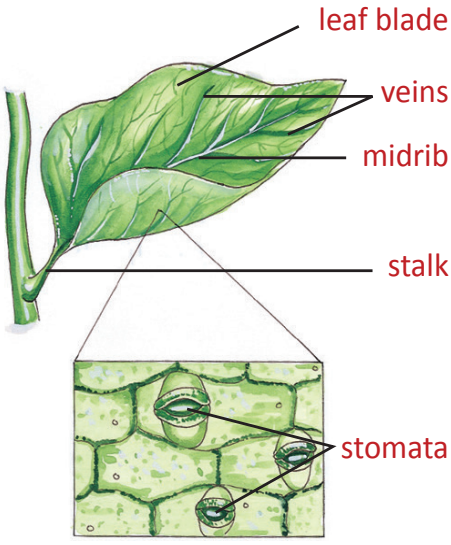
Stems that store food

The Leaf

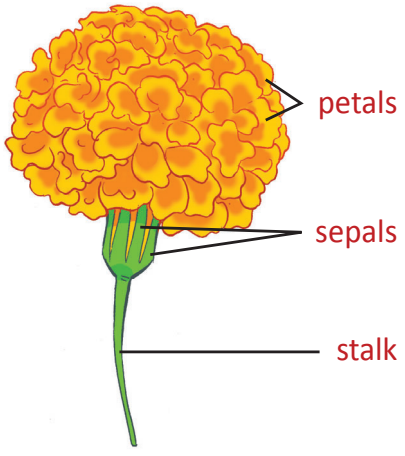
The leaf is the thin, flat and usually green part that grows from the stem. Leaves of different plants are of different shapes and sizes.



Leaves of different plants



Parts of a leaf



Parts of a flower

The flat, broad part of the leaf is the **leaf blade**. Many thin tubes called **veins** can be seen on the surface of the leaf blade. The main vein that runs along the centre of the leaf is the **midrib**. The leaf blade is fixed to the stem by a **stalk**.

The lower surface of the leaf has tiny openings called the **stomata**. Air enters and leaves the plant through the stomata.

Functions of the leaf

- The leaf is called the food factory of the plant. It prepares food for the plant by a process called **photosynthesis**. It uses water and a gas called carbon dioxide present in air to make food with the help of sunlight and **chlorophyll**. Chlorophyll is a green substance found in leaves. It helps to trap sunlight for photosynthesis.
- The leaf gives out **oxygen** during photosynthesis. Most living things need oxygen to live.
- The leaves of some plants such as the jade plant store water and some food.

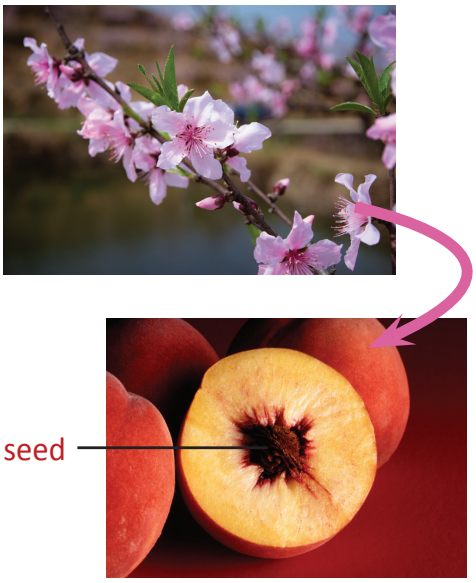
The Flower

Flowers are usually the brightly coloured parts of the plant. They are of different shapes, sizes and colours. They may also have a pleasant smell.

A flower has soft and colourful **petals**. It also has small green leaf-like parts called **sepals**. They protect the flower when it is a bud. The flower is joined to the stem by a **stalk**.

Functions of the flower

Flowers turn into fruits that have seeds. Seeds grow into new plants. Thus, the flower helps the plant to reproduce.[2]



Peach flower and fruit

The Fruit

The fruits of many plants are fleshy, juicy and colourful. Fruits such as the mango and peach have only one seed. Fruits such as the apple, papaya and guava have many seeds.

Functions of the fruit

- The fruit protects the seeds.
- Colourful and juicy fruits attract birds and other animals. The animals eat the fruits and may scatter the seeds, thus spreading them.

Papaya flower and fruit

The Seed

Seeds are found inside the fruit. They may be large or small, flat or round, smooth or rough, and may be of different colours.

Many birds and animals eat seeds of different plants. The rice, wheat, maize, kidney beans (*rajma*) and almonds that we eat are all seeds.

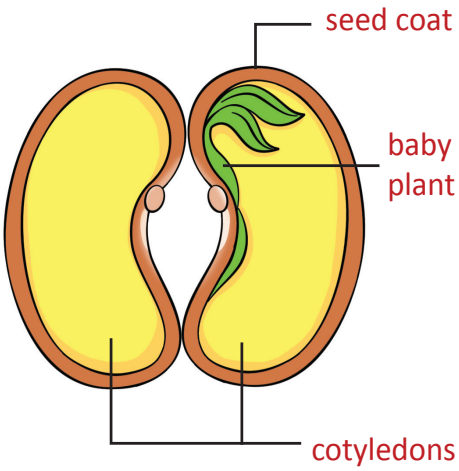
Wheat seeds

Kidney bean seeds

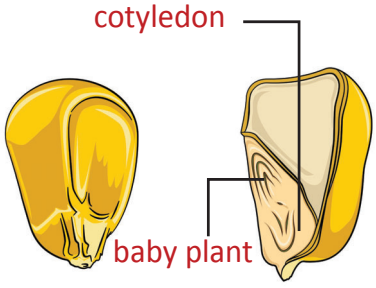
Go further...

Soya milk, tofu (which looks like *paneer*), soya sauce and soya nuggets are foods made from the seeds of the soya bean.

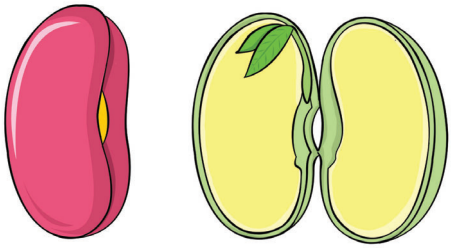
[2]**reproduce** make more of the same kind



Parts of a seed



Monocot seed (maize)



Dicot seed (kidney bean)

Function of the seed

The seed grows into a new plant.

Parts of a seed

The seed has a baby plant inside it. It has an outer covering called a **seed coat**, which protects it. A small hole on one side of the seed coat helps water to enter the seed.

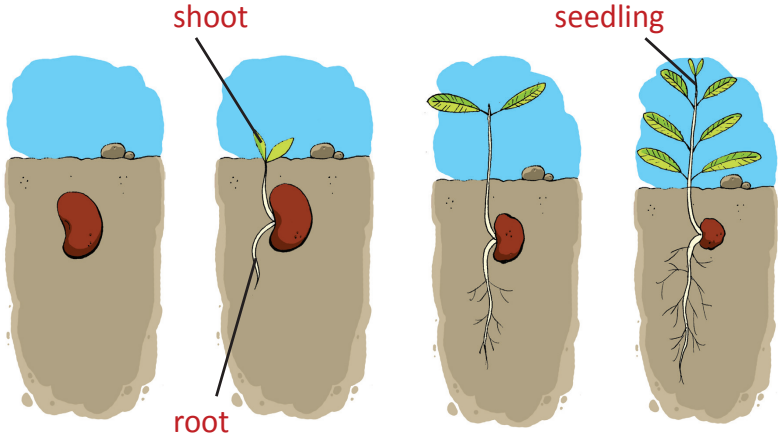
One or more fleshy parts called **seed leaves** or **cotyledons** are found inside the seed. They store food for the baby plant.

Kinds of seeds

Seeds can be of two types based on the number of cotyledons they have.

Monocot seeds They have only one cotyledon. The seeds of grasses, rice, maize and banana plants are examples.

Dicot seeds They have two cotyledons. The seeds of pea, bean, mango and rose plants are examples.



Germination of a seed

GERMINATION OF SEEDS

The growth of a seed into a new plant is called ***germination***. When a seed has the right amounts of air, water, warmth and nutrients, it germinates into a new plant.

During germination, the baby plant uses food from the cotyledons

to grow. First, it grows a tiny root and then a shoot. The small plant formed is the **seedling**. The seedling grows into a new plant.

Activity

Aim: To observe the germination of seeds

Materials required: cotton wool, two plastic trays, *moong* seeds, water

Method: Spread some cotton wool in the two trays and place *moong* seeds in them. Place tray 1 in sunlight and water it regularly. Place tray 2 in a cupboard and keep it dry. Observe the trays for a week.

Observations and conclusions: The seeds in tray 2 do not germinate, but the seeds in tray 1 do. This is because the seeds in tray 1 got the sunlight and water that they needed.

CARE OF PLANTS

Plants give out oxygen, which most living things need to live. They supply food and shelter to many animals. We also get useful things such as grains, fruits, vegetables, oil, spices and wood from plants.

You can do many things to take care of plants.

- Make sure the plants in your home get the right amount of water and light to grow properly.
- Regularly loosen the soil around the base of plants. This lets in air and water.
- Regularly add manure[3] or fertiliser[4] to the soil. This supplies the plants with nutrients.
- You may need to spray pesticide[5] on the plants to kill harmful insects and so on.
- Do not pluck leaves and flowers. Remember, plants are living things too!

A leaf damaged by insects

[3]**manure** waste matter from animals that is mixed with soil to help plants to grow

[4]**fertiliser** something that is added to soil to help plants grow

[5]**pesticide** something that kills a living thing that harms plants

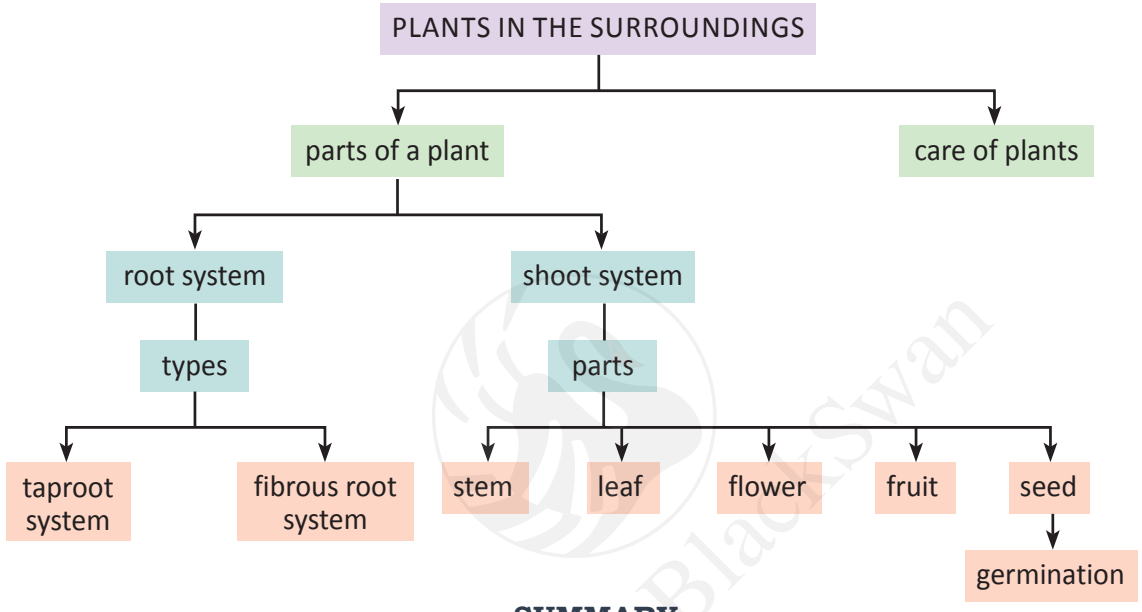
Stop and check

Fill in the blanks.

1. The thick, hard and woody stem of the mango tree is called a _____.
2. The _____ is the main vein that runs through the centre of the leaf blade.
3. Sepals protect the _____ of the plant when it is still a bud.
4. The _____ in a seed store food for the baby plant.

In a nutshell

CONCEPT MAP



SUMMARY

- The shoot system is made up of the stem, leaves, flowers and fruits with seeds.
- The stem bears the other parts of the shoot. It carries water and food to different parts of the plant.
- The leaf prepares food for the plant by photosynthesis. It gives out oxygen during the process.
- The flower helps the plant to reproduce. It turns into a fruit with seeds.
- Fruits have seeds that later germinate. Baby plants inside the seeds grow into new plants.
- There are two types of seeds—monocot seeds and dicot seeds.
- A seed germinates when it gets the right amounts of air, water, warmth and nutrients.
- Plants are important for us and for other living things. We should take care of them.

KEYWORDS

chlorophyll the green substance found in leaves; it helps to trap sunlight for photosynthesis

cotyledon a fleshy part of the seed that stores food for the baby plant

midrib the main vein that runs along the centre of the leaf

photosynthesis the process by which leaves prepare food using water and air

CHECKPOINT

A. Choose the correct option.

1. Which of these plants does **not** have a taproot system?
   a) mango b) rose c) rice d) neem
2. The _____ of sugar cane stores food for the plant.
   a) root b) leaf c) stem d) fruit
3. The leaf is fixed to the stem by a _____.
   a) midrib b) stalk c) cotyledon d) bud
4. Which part of a plant turns into a fruit?
   a) leaf b) stem c) flower d) root
5. Which of these protects the seed?
   a) midrib b) seed coat c) seedling d) seed leaf

B. Give one word or a phrase for the following.

1. The part of the plant that grows in the ground
2. The flat, broad part of the leaf
3. The tiny openings on the lower side of a leaf
4. The substance in green leaves that helps the plant to trap sunlight
5. The fleshy parts found inside the seed

C. Say if the statements are true or false. Correct the false statements.

1. Grass has a fibrous root system.
2. The pumpkin plant has a thin and hard stem.
3. The leaf gives out oxygen during photosynthesis.
4. All fruits contain only one seed.
5. We can supply a plant with nutrients by adding manure to the soil.

D. Short-answer questions

1. Name two plants that store food in their roots and two that store food in their stems.
2. List any two functions of the stem of a plant.
3. What is the function of the flower?
4. How are seeds grouped based on the number of cotyledons they have?
5. List two things we can do to take care of plants in our homes or gardens.

E. Long-answer questions

1. How is the taproot system different from the fibrous root system?
2. Describe the parts of a leaf.

3. What is photosynthesis? Name the four things a plant needs for photosynthesis.
4. What is germination? How does it take place?

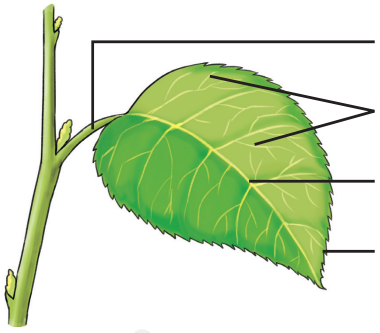
Think and Answer

1. Which parts of the plant take in substances needed to make food?
2. Why is it important to add manure or fertiliser to the soil in a flower pot? (*Hint:* What would happen if a plant did not get enough nutrients?)

Picture Study

Study the picture of the leaf and answer the questions.

1. Label the parts in the picture.
2. Where would you find stomata?
3. Give an important function of the leaf.



Life Skills and Values

1. We can plant the seeds of many fruits and vegetables to grow new plants. Collect seeds from your kitchen and dry them for a few days. You can plant them at home, give them to neighbours and friends or donate them to a community garden.
2. Neiko was walking in a park when he saw a few children breaking off flowers and branches of plants. He told them that flowers help plants reproduce and form fruits and so we should not damage them. What values did Neiko show?

Hands-on

1. Carry out this simple activity to see how the stem of a plant carries water up to the other parts.
   Add some pink food colouring to a glass of water. Take a balsam or carnation stem with white flowers. Leave the stem in the coloured water for some time. What change do you see in the flower? Why do you think this happens?
2. Collect fallen leaves of different shapes and sizes from a park or garden. Place each leaf upside down on a sheet of paper. Place a sheet of white paper on the leaf. Using a crayon or coloured pencil, rub the paper over the leaf. You will get a pattern of the leaf, showing the veins. Cut out the patterns and paste them in your scrapbook.

3. Have a fruit 'show-and-tell'. Bring your favourite fruit to class and tell your classmates about:
   - why you like it
   - how many seeds it has
   - what it is called in other languages

Subject Integration

(Languages)

Read the story *Jack and the Beanstalk*. Do you think you can climb up a normal (not magic) beanstalk? Find out what kind of stem a bean plant has.

Scientist in Focus

Pierre Joseph Pelletier and Joseph-Bienaimé Caventou

Pierre Pelletier and Joseph-Bienaimé Caventou were the first scientists to identify and name chlorophyll in 1817. They also discovered quinine, a chemical in the bark of the cinchona tree that is used to treat malaria.

Internet Links

https://www.youtube.com/watch?v=Lly75dEbXE8
http://www.mbgnet.net/bioplants/parts.html

Heritage Corner

Medicines from plants

From ancient times, we have used different plants to make medicines. Plants such as *tulsi*, neem, turmeric, mint and Indian gooseberry (*amla*) are used in the treatment of common illnesses even in modern times.

Neem leaves

Amla fruits

Inspired SCIENCE

For the CISCE curriculum
CLASS 3

Orient BlackSwan

The National Education Policy (NEP) 2020 emphasises certain crucial parameters based on content and pedagogy. The Inspired Science series provides a rich range of exercises and activities for each of the parameters. Here is a quick reference guide to some of the examples in this book.

The Inspired Science series is mapped perfectly to the National Education Policy 2020.

21st Century Skills

A broad set of skills, knowledge, work habits and character traits that are important for success in the 21st century

Experiential/ Constructivist Approach

Learners construct their knowledge, based on what they already know, through experience or by doing and reflection

Integrated Approach

An approach to teaching and learning that works by connecting knowledge and skills across the curriculum, by bringing real life examples to the classroom

The NEP parameters	Features	Page nos.
The 4Cs		
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Collaboration	Activity	34
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Social and Emotional Learning	Life Skills and Values (1)	42
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The NEP parameters	Features	Page nos.
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Subject Integration	Subject Integration (Social Studies)	64
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	Hands-on (12)	52
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Values	Life Skills and Values	72
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Sustainable Development Goals

A framework of 17 global goals designed to be a blueprint to achieve a better and more sustainable future for all

The NEP parameters	Features	Page nos.
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	Eco Corner	75

India Knowledge

A strong focus on ancient knowledge from India, traditional values, modern developments and future aspirations

The NEP parameters	Features	Page nos.
Know more about India	Heritage Corner	53
	Heritage Corner	92

Digital Integration

The use of digital tools to enhance and support the teaching–learning process

ICT/Digital resources

Orient BlackSwan Smart App - Interactive Tasks and Games for Practice and Revision

Teachers' Smart Book - Flipbook, Animations, Videos, Presentations, Picture Galleries, Interactive Tasks, Embedded Questions, Lesson Plans, Students' Book Answer Key, Worksheets with Answer Key, Question Paper Generator

Teacher Empowerment

Teachers' Resource Books - Lesson Plans, Students' Book Answer Key, Question Bank with Answer Key, Worksheets with Answer Key, Test Papers

Teachers' Portals - Chapter e-Book, Presentations, Picture Galleries, Animations, Students' Book Answer Key, Worksheets with Answer Key, Lesson Plans, Question Bank with Answer Key

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