Oxford International Primary Science Course Guide

An enquiry-based approach to learning that fully supports the latest Cambridge Primary Science curriculum framework

For your FREE digital inspection copy go to www.oxfordprimary.com/inspect
**For the student**

*Oxford International Primary Science* takes an enquiry-based approach to learning, engaging students in the topics through asking questions that make them think, and activities that encourage them to explore and practise.

As students progress through the course, they not only learn about science but how to think like a scientist. They learn the language of scientific enquiry, for example, the meaning of observe and predict in a scientific context, as well as the important key words for talking about a topic.

**NEW** – Write-in *Oxford International Primary Science Investigation Workbooks*, providing more scope for practice or homework exercises.

**NEW** – *Oxford International Primary Science Student e-books*

Enhanced e-books with embedded audio glossary, self-marking activities and animations. Providing ideal support for EAL learners at home or in the classroom.

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Why do watermelons have so many seeds?

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**For the teacher**

The *Teacher’s Guides* provide step-by-step notes for each lesson, guiding students through the topic, and supporting them with their language development when needed.

**NEW** – *Oxford International Primary Science Assessment Pack*

This pack provides Cambridge International Examinations style practice questions in order to prepare your students for Cambridge Primary Checkpoint exam success.

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Introducing the full suite of levelled primary courses with your multi-cultural classroom in mind.
Fish that live deep in the ocean do not have eyes. Why?
3 The Life Cycle of a Flowering Plant

In this module you will:
- understand that plants reproduce
- learn about how seeds can be dispersed
- discover that insects pollinate some flowers
- learn that plants produce flowers that have male and female parts
- find out that seeds are formed when pollen from the male part fertilizes the ovum (female)
- learn that flowering plants have a life cycle which includes pollination, fertilization, seed production, seed dispersal and germination.

Amazing fact
Did you know that a watermelon can have over 600 seeds inside it?
In this module you will:
- understand that plants reproduce
- learn that plants produce flowers
- find out that seeds are formed
- some flowers fertilize the ovum (female) production, seed dispersal and germination.

Did you know that a watermelon can have over 600 seeds inside? Would six seeds be enough in a watermelon?

Why do watermelons have seeds?

Why do watermelons have so many seeds?
Would six seeds be enough in a watermelon?
Flowering plants reproduce. They start as a seed and grow into adult plants.

The Big Idea

Flowering plants reproduce. Students are introduced to ‘The Big Idea’. Questions help them explore and understand the concept.

How do flowering plants make new flowering plants?

When flowering plants reproduce, they make new plants. These new plants grow and reproduce to make more new plants. We call this process the life cycle because each stage in the life cycle is repeated each time a new plant is made. There are four main stages in the life cycle of a flowering plant.

1. Seeds
Seeds are the first stage in the life cycle of flowering plants. Seeds need the right conditions, such as water and warmth, to start to grow. Once a seed starts to grow we say it has germinated.

2. Seedlings
Seedlings are the second stage in the life cycle. We start to see the first roots and shoots at this stage.

3. Small plants
Small plants are the third stage in the life cycle. At this stage we recap the conditions for a flowering plant to start reproduction in preserving the species is introduced.

4. Adult plants
Adult plants are the fourth stage in the life cycle. At this stage the plant is fully grown.

The step-by-step lesson notes in the Teacher’s Guides support the teacher with practical help and ideas for supporting language, if needed.
Look at the photographs of different plants below. Write the name and number of each stage in the life cycle. One has been done for you.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Name</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Seedling</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Adult plant</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Fruit</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Flowers</td>
<td>0</td>
</tr>
</tbody>
</table>

'Think about ...' questions encourage students' curiosity, encouraging them to extend their learning.

Think about...
Do you like watermelon? What colour is it inside? The watermelon plant hides its seeds inside a fleshy fruit that is good to eat. Why?

Extension activities
Students could add any new words to their glossaries to reinforce definitions.

Think about... This gives you the opportunity to talk with students about some of the questions raised. Students should be able to explain different types of watermelon with regard to colour and number of seeds.

1. The watermelon plant hides its seeds inside a fleshy fruit that is good to eat. Why?

   Possible answer: The plant wants the seed to be eaten by humans, animals or birds.

2. What happens to the seeds when you eat the fruit?

   Students could use the words learned so far. For example, seeds, germinate but before they germinate they need to find somewhere to grow.

   Possible answer: The seeds will become seedlings. Students test their knowledge with their learning.

3. Why does the watermelon produce 600 seeds?

   This is an opportunity to introduce ideas related to ‘more than’ and ‘less than’.

   Possible answer: The more seeds there are, the bigger the chance that some will survive.

4. What happens to the flowers over time?

   When seeds start to grow we say they have germinated. The rest of the plant in the top of the ground and carry water and food to the rest of the plant. Stage three of the cycle is when the adult plant appears and stage four is the adult plant. Plants can reproduce to create new plants. We call this process the cycle of flowering plants. Seeds are produced by a flowering plant to become a seedling and stage three of the cycle is when the adult plant appears. Stage four of the cycle is when the adult plant appears and stage four is the adult plant. The seedling stage is the stage in the life cycle to become a seedling and stage three of the cycle is when the adult plant appears. Stage four of the cycle is when the adult plant appears and stage four is the adult plant. Plants can reproduce to create new plants. We call this process the cycle of flowering plants. Seeds are produced by a flowering plant to become a seedling and stage three of the cycle is when the adult plant appears. Stage four of the cycle is when the adult plant appears and stage four is the adult plant. Plants can reproduce to create new plants. We call this process the cycle of flowering plants. Seeds are produced by a flowering plant to become a seedling and stage three of the cycle is when the adult plant appears. Stage four of the cycle is when the adult plant appears and stage four is the adult plant. Plants can reproduce to create new plants. We call this process the cycle of flowering plants. Seeds are produced by a flowering plant to become a seedling and stage three of the cycle is when the adult plant appears. Stage four of the cycle is when the adult plant appears and stage four is the adult plant. Plants can reproduce to create new plants. We call this process the cycle of flowering plants. Seeds are produced by a flowering plant to become a seedling and stage three of the cycle is when the adult plant appears. Stage four of the cycle is when the adult plant appears and stage four is the adult plant.
The Life Cycle of a Flowering Plant

Flowering plants

Know that plants reproduce.

The Big Idea

We can show the life cycle of flowering plants as a circle.

True/False

Look at the picture above. Correctly label the roots and the shoots.

At which stage of the life cycle would we first see roots and shoots?

We have looked at the life cycle of a flowering plant and explored some of the stages.

Look at the picture opposite. It shows a simple life cycle of a flowering plant. Label the life cycle using the words in the word bank below.

Word Bank

seed small plant
seedling adult plant

Word Banks throughout the module draw attention to words students need to know. They can record these words and their own definitions in the Glossary at the back of the Student’s Workbooks.
Flowering plants

Know that plants reproduce.

We have looked at the life cycle of a flowering plant and explored some of the stages. We can show the life cycle of a flowering plant as a circle.

The life cycle is a continuous process. It is circular.

True/False

- There are three stages in the life cycle of a flowering plant.
- The life cycle is a continuous process.
- Some flowering plants produce only one flower.
- True
- True
- False

What is your favourite fruit? Use the space below to create a life cycle for your favourite fruit showing the plant producing the fruit as an additional stage. Label your life cycle using the labels in the word bank below.

Word Bank

- adult plant
- fruit
- seedling
- seed
- small plant

At which stage of the life cycle would we first see roots and shoots? The flowering plant is in one of the stages of the life cycle to determine whether students remember what they covered in the previous unit.

Answer: Roots and shoots would be seen at the seedling stage of the life cycle.

Look at the picture. Correctly label the roots and the shoots. Ask students to label the roots and shoots on the image of the seedling provided.

Answer: a) shoots; b) roots.

We have looked at the life cycle of a flowering plant and explored some of the stages. We can also show the life cycle of a flowering plant as a circle. Within the main content, students are able to see the life cycle as a circle. This can be used to reinforce the idea that the life cycle is a continuous process. Ask students to study the information about the life cycle of a flowering plant shown in the image.

Ask the questions:

- Which overall stage is the picture of the life cycle of a flowering plant?
- Why do you think it is circular?

- What do you think might happen to the adult flowering plant?
- What do you think might happen to the adult flowering plant?
- Will the life cycle of a flowering plant change over time and is uninterrupted.

These questions are designed to get students to think about the life cycle of a flowering plant as being a continuous process and, further, that students can predict what might happen in the latter stages of the life cycle. - the adult plant might continue to grow bigger or it might come to the end of its life cycle and die.

Look at the picture above. It shows a simple life cycle of a flowering plant. Label the life cycle using the labels in the word bank below. Ask students to add the labels provided in the Student Workbook to complete the life cycle diagram. This can be used as a formative assessment tool.

- The questions posed within this unit are rhetorical and are there to stimulate thinking about why seeds are needed and whether students remember what they covered in the previous unit. You could ask students to start to think about these questions to stimulate their thoughts and encourage discussion. There is a list of labelled circles in the Student Workbook to help students organize the life cycle of a fruit. Ask students to draw in the cycle diagrams of their favourite fruit or in a parrot through the life stages.

- Conclude the topic by asking students to complete the series of labelled circles in the Student Workbook into a circular life cycle representation. There is a series of labelled circles in the Student Workbook to help students organize the life cycle of a fruit.

Seeds

What do you think might happen to the adult flowering plant?

- It might come to the end of its life cycle and die.
- The adult plant might continue to grow bigger.
- It might be eaten by a predator.
- It might come to the end of its life cycle and die.

- The more seeds there are, the bigger the chance that some will survive.
- The seeds are needed for reproduction.

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Language support

As you work through the unit, check students' understanding of the terms and concepts covered. For example, you will need to explain that a "continuation postcard" is a postcard that moves forward over time and is uninterrupted.

Extension activities

You could ask students to work in groups to produce some large-scale life cycle posters for display within the classroom.
What have we learned about living and growing?

Living or non-living?

- Is it alive? Tick the right pictures.
- I know that some things are living and that some things have never been alive
- I know that living things eat, grow and can move

Where do animals and plants live?

- Choose from the list and write them under the picture.

**Word Bank**
- chimp
- lizard
- penguin
- coral

- I know that plants and animals need a place to live
- I know that plants and animals can live in different places

NEW

Oxford International Primary Science Assessment Pack

On the CD you will find:
- Tests to comprehensively assess stages 3-6 following the Cambridge International Primary Science Curriculum
- Practice questions to help prepare your students for Cambridge Primary Checkpoint exam success

End of unit tests and mark schemes for every stage.
Digital Resource Packs to support each module

Activities to present each topic to your class.

Interactive games and activities to get your students involved.

Assessment activities to monitor students’ understanding and progress as well as check the development of the skills they need for future studies and international or school exams (including Cambridge Primary Checkpoint).

Full Glossary, with option to hear the words spoken.


Written by experts in science for primary-aged students
The author team, Terry Hudson (Lead Author), Alan Haigh, Debbie Roberts and Geraldine Shaw, bring together experienced examiners, teachers and science consultants who understand how to equip students with the skills and knowledge they need for their studies now and in the future. The language consultants for the series, Liz and John McMahon, are experts in developing language skills in the primary years.
Oxford International Primary Science

An enquiry-based approach to learning that fully supports the latest Cambridge Primary Science curriculum framework.

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- Workbook: 978 019 837642 2
- Teacher’s Guide: 978 019 839483 9
- Digital Resource Pack: 978 019 839489 1

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