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Primary Science

Teacher's Resource 4

Fiona Baxter & Liz Dilley

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Digital resources



The following items are available on Cambridge GO. For more information on how to access and use your digital resource, please see inside front cover.

Active learning

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Curriculum framework correlation

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You can download the following resources for each unit:

Differentiated worksheets and answers

Language worksheets and answers

Resource sheets

End-of-unit tests and answers

> Introduction

Welcome to the new edition of our Cambridge Primary Science series.

Since its launch, the series has been used by teachers and learners in over 100 countries for teaching the Cambridge International Primary Science curriculum framework.

This exciting new edition has been designed by talking to Primary Science teachers all over the world. We have worked hard to understand your needs and challenges, and then carefully designed and tested the best ways of meeting them.

As a result of this research, we've made some important changes to the series. This Teacher's Resource has been carefully redesigned to make it easier for you to plan and teach the course.

The series still has extensive digital and online support, including Digital Classroom, which lets you share books with your class and play videos and audio. This Teacher's Resource also offers additional materials available to download from Cambridge GO. (For more information on how to access and use your digital resource, please see inside front cover.)

The series uses the most successful teaching pedagogies like active learning and metacognition and this Teacher's Resource gives you full guidance on how to integrate them into your classroom.

Formative assessment opportunities help you to get to know your learners better, with clear learning objectives and success criteria, as well as an array of assessment techniques, including advice on self and peer assessment.

Clear, consistent differentiation ensures that all learners are able to progress in the course with tiered activities, differentiated worksheets and advice about supporting learners' different needs.

All our resources are written for teachers and learners who use English as a second or additional language. They help learners build core English skills with vocabulary and grammar support, as well as additional language worksheets.

We hope you enjoy using this course.

Eddie Rippeth

Head of Primary and Lower Secondary Publishing, Cambridge University Press

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> About the authors

Fiona Baxter



Fiona Baxter has been involved in Science education for over 25 years and has many years of Science teaching experience. In recent years her main focus has been on developing learning materials for both primary and secondary school curricula. One of Fiona's areas of interest in Science education is making science more accessible to both teachers and learners, particularly in developing countries, through the use of low cost, everyday materials for practical work. She also feels strongly about the inclusion of girls in Science activities in the classroom and the workplace.

Fiona believes that using the Cambridge Primary Science series will help learners to build a strong conceptual foundation for further studies in Science, while at the same time making the learning experience engaging and fun.

Liz Dilley



Liz was born and educated in London and did a BSc and post graduate diploma in Education at the University of Bristol.

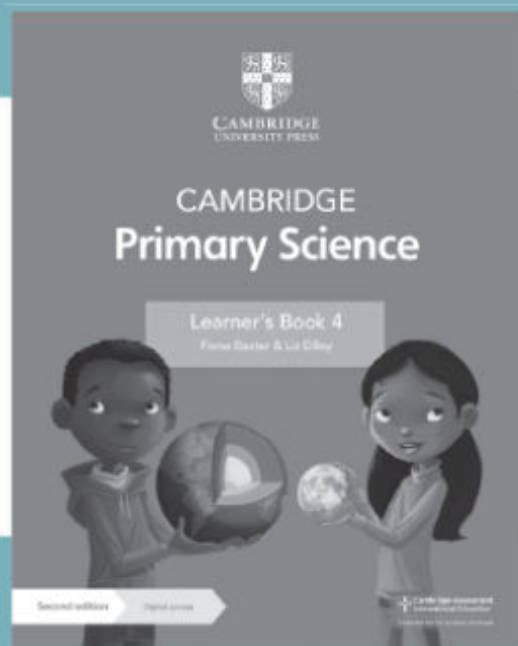
Shortly after university she moved to South Africa, where she taught for several years before training as a second-language English writer. This led to a variety of experiences in teacher training, adult education and writing for school-aged learners.

From the mid-1990s Liz began to focus more on writing textbooks for Life Sciences, Physical Science and Social Sciences. She wrote textbooks for the new Namibian curriculum and later the new South African curriculum – about 200 titles in total.

In 2012–2016 she co-authored the Cambridge Primary Science Series and is now a co-author of the new series.

Liz lives in Cape Town, South Africa, with her husband and family. She enjoys hiking, boating and travelling to interesting places.

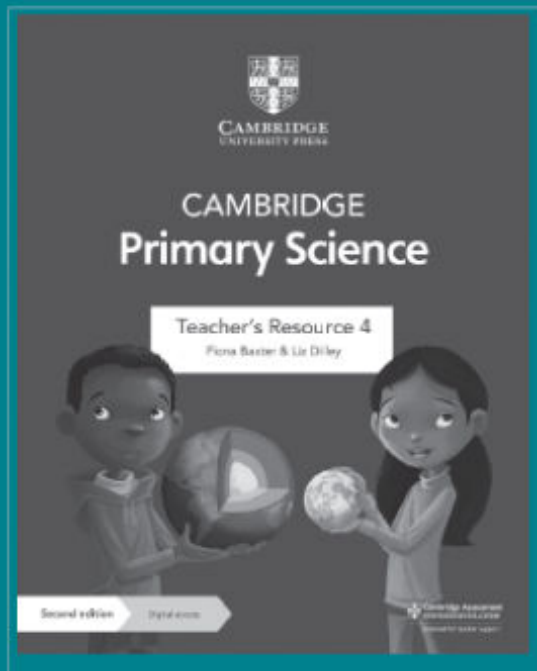
> How to use this series

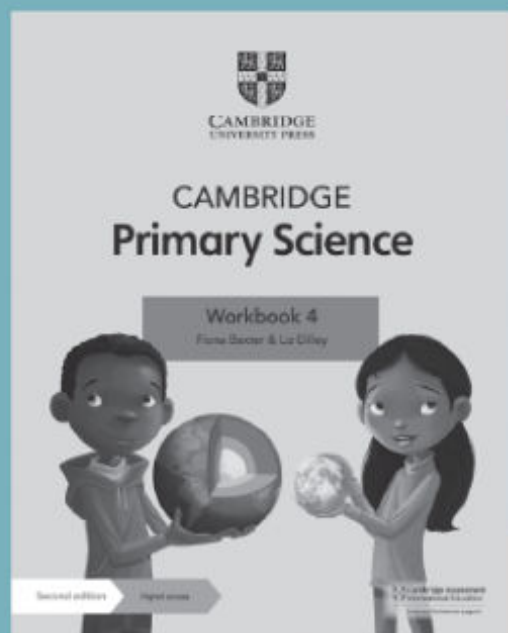


The Learner's Book is designed for students to use in class with guidance from the teacher. It contains six units which offer complete coverage of the curriculum framework. A variety of investigations, activities, questions and images motivate students and help them to develop the necessary scientific skills. Each unit contains opportunities for formative assessment, differentiation and reflection so you can support your learners' needs and help them progress.

The Teacher's Resource is the foundation of this series and you'll find everything you need to deliver the course in here, including suggestions for differentiation, formative assessment and language support, teaching ideas, answers, unit and progress tests and extra worksheets. Each Teacher's Resource includes:

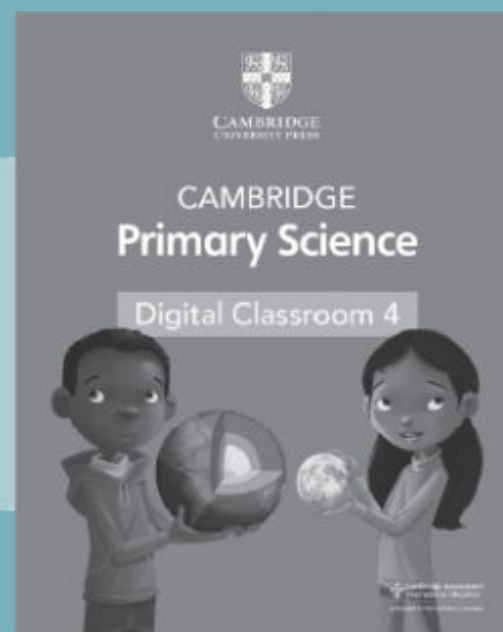
- A print book with detailed teaching notes for each topic
- Digital Access with all the material from the book in digital form plus editable planning documents, extra guidance, worksheets and more





The skills-focused write-in Workbook provides further practice of all the topics in the Learner's Book and is ideal for use in class or as homework. A three-tier, scaffolded approach to skills development promotes visible progress and enables independent learning, ensuring that every learner is supported.

Digital Classroom includes digital versions of the Learner's Book and Workbook, complete with pop-up answers, and is designed for teachers to use at the front of class. Easily share the books with the whole class on your whiteboard, zoom in, highlight and annotate text, and get your learners talking with videos, images and interactive activities.



A letter to parents, explaining the course, is available to download from Cambridge GO (as part of this Teacher's Resource).


> How to use this Teacher's Resource

This Teacher's Resource contains both general guidance and teaching notes that help you to deliver the content in our Cambridge Primary Science resources. Some of the material is provided as downloadable files, available on **Cambridge GO**. (For more information about how to access and use your digital resource, please see inside front cover.) See the Contents page for details of all the material available to you, both in this book and through Cambridge GO.

Teaching notes

This book provides **teaching notes** for each unit of the Learner's Book and Workbook. Each set of teaching notes contains the following features to help you deliver the unit.

The **Unit plan** summarises the topics covered in the unit, including the number of learning hours recommended for the topic, an outline of the learning content and the Cambridge resources that can be used to deliver the topic.

Topic	Approximate number of learning hours	Outline of learning content	Resources
1.2 Why we need a skeleton	2	Functions of the skeleton Measure length of bones, record data in a table	Learner's Book: Think like a scientist: Measuring bone lengths Workbook: Topic 1.2  Worksheets 1.2A, 1.2B and 1.2C Digital Classroom: Song – Some body

The **Background knowledge** feature explains prior knowledge required to access the unit and gives suggestions for addressing any gaps in your learners' prior knowledge.

Learners' prior knowledge can be informally assessed through the **Getting started** feature in the Learner's Book.

BACKGROUND KNOWLEDGE

The skeleton is the structure inside our body that is made up of bones. The main functions of the skeleton are to provide a frame that supports the body; to protect internal organs such as the heart, lungs and brain; and to allow movement. The bones of the skeleton also grow, which allows us to grow.

The **Teaching skills focus** feature covers a teaching skill and suggests how to implement it in the unit.

TEACHING SKILLS FOCUS

Active learning

Active learning is a form of learning in which learners become more directly involved in the learning process. Younger learners, in particular, find it difficult to listen and concentrate for more than about five minutes at a time if they are not actively doing something.

Reflecting the Learner's Book, each unit consists of multiple sections. A section covers a learning topic.

At the start of each section, the **Learning plan** table includes the learning objectives, learning intentions and success criteria that are covered in the section.

It can be helpful to share learning intentions and success criteria with your learners at the start of a lesson so that they can begin to take responsibility for their own learning.

LEARNING PLAN		
Learning objectives	Learning intentions	Success criteria
4Bs.01 Identify some of the important bones in the human body (limited to skull, jaw, rib cage, hip, spine, leg bones and arm bones).	<ul style="list-style-type: none"> To be able to name some of the bones in our body. To be able to point out where some of the main bones are found in our body. 	<ul style="list-style-type: none"> Learners can identify the skull, jaw, spine, rib cage, hip, arm bones and leg bones.

There are often **common misconceptions** associated with particular learning topics. These are listed, along with suggestions for identifying evidence of the misconceptions in your class and suggestions for how to overcome them.

Misconception	How to identify	How to overcome
Bones are not living.	Ask learners to describe bones. Are they living or non-living?	Ask learners if their bones are the same size now as when they were babies. The answer is no, which shows that bones grow. Learners should recall from Stage 3 that growth is a life process.

For each topic, there is a selection of **starter ideas**, **main teaching ideas** and **plenary ideas**. You can pick out individual ideas and mix and match them depending on the needs of your class. The activities include suggestions for how they can be differentiated or used for assessment. **Homework ideas** are also provided.

Starter idea

1 Getting started (5–10 minutes)

Resources: Photo of frog skeleton from Learner's Book.

Description: Show learners the photo of the frog skeleton and ask them to read the accompanying questions.

Use the 'Think-pair-share' method to allow learners to think about their answers for a minute or two, then discuss their answer with a partner before sharing their answers with the class.

Main teaching ideas

1 What is a skeleton? (10 minutes)

Learning intention: Know that the skeleton supports the body; describe how the body would look without a skeleton

Resources: A life-sized paper outline drawing of the human body; a picture of frame buildings, for example traditional homes in Thailand and Japan, a car port or gazebo.

Description: Show the class a life-sized paper outline drawing of the body. Hold up the paper outline and then let it go. Ask learners to describe what their bodies would be like without a skeleton.

The **Language support** feature contains suggestions for how to support learners with English as an additional language. The vocabulary terms and definitions from the Learner's Book are also collected here.

LANGUAGE SUPPORT
<p>You can make a set of flash cards for learners to use to match the new terms learnt in this topic with their meanings.</p> <p>bones: hard, strong parts inside our body that give our body shape and keep us upright</p>

The **Cross-curricular links** feature provides suggestions for linking to other subject areas.

CROSS-CURRICULAR LINKS
Main teaching ideas 1 and 3 both link with movement and exercise in Physical Education.