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Primary Science

Teacher's Resource 3

Jon Board & Alan Cross

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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.

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Glossary

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

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> 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 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

> About the authors

Jon Board



Jon Board is a lecturer in teacher training at the University of Manchester and also works as a specialist teacher of primary science at Mauldeth Road Primary School, Manchester. He has been teaching for 20 years and working in teacher training for more than 15 years. He also works internationally in teacher training, assessment and curriculum development, and has worked with teachers, education experts and education ministries in many countries including Egypt, Kazakhstan, Mongolia, Saudi Arabia, Macedonia and Indonesia. In addition to Cambridge Primary Science, Jon is the co-author of *Creative Ways to Teach Primary Science* published by McGraw Hill and of *Curious Learners in Primary Maths, Science, Computing and Design Technology*, published by Sage.

Jon is passionate about developing learners' curiosity by creating opportunities for them to ask and explore their own questions and about engaging learners in scientific thinking by getting them involved in planning and leading their own practical scientific enquiry. He is particularly interested in using primary science to develop learners' creative and rational problem-solving skills. These transferable, life-long skills will then be used in other subjects and in everyday situations. Cambridge Primary Science is written specifically to support teachers in developing this range of skills in learners as well as teaching the new vocabulary and the underpinning science knowledge required to do well in academic assessments.

Alan Cross



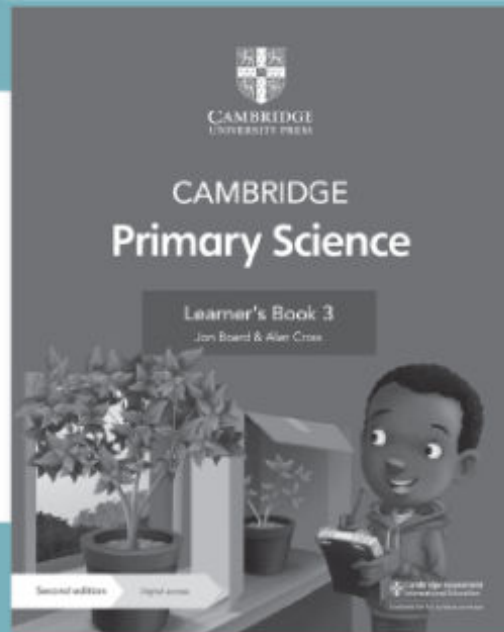
Alan has worked very successfully as a primary teacher, local advisor, trainer, inspector, external examiner, school governor and teacher educator. He has worked in the school and University sector in the UK and on projects and training around the world. Alan has researched primary STEM and has contributed to conferences and published extensively for teachers in primary science and technology including links with mathematics.

He loves to see curiosity and creativity develop in learners and teachers. Alan sees science as an amazing subject for opening people's eyes to the beauty of the universe including planet Earth. For him, science gives primary teachers the opportunity to introduce young minds to phenomena and explanations so that learners see another way to interact with the world, a way in which they can pose their own questions and begin to solve them.

Cambridge Primary Science provides the support that teachers need in empowering their learners' exploration and investigation of the world. Its stimulating materials and careful guidance give teachers confidence. Science tasks and activities are tried and tested and give a very strong emphasis to learners' thinking and working scientifically and to catering for the spread of achievement encountered in today's primary classrooms.

> How to use this series

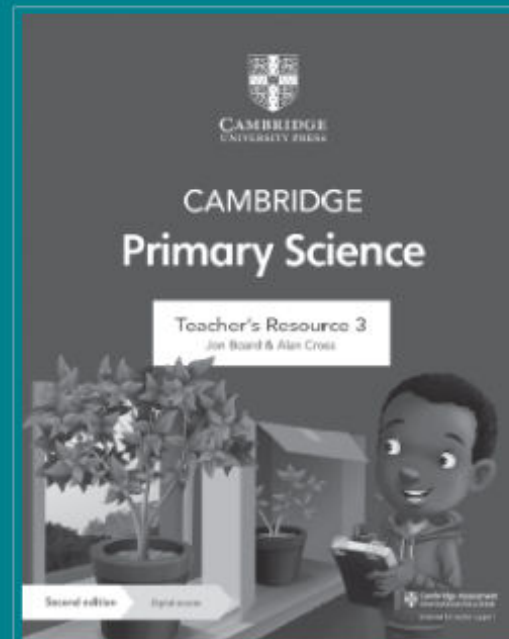
All of the components in the series are designed to work together.

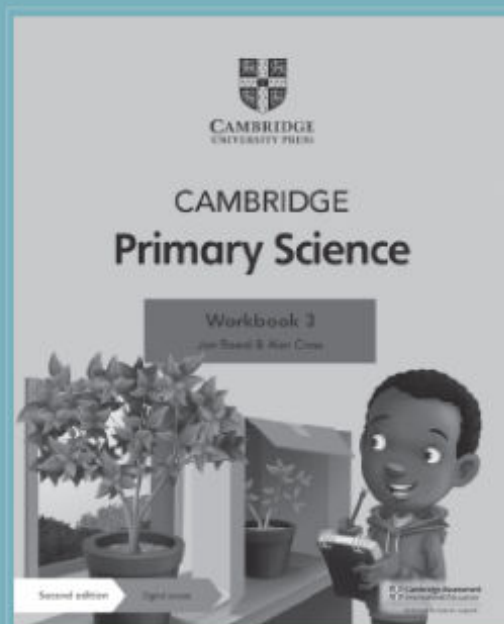


The Learner's Book is designed for learners to use in class with guidance from the teacher. It offers complete coverage of the curriculum framework. A variety of investigations, activities, questions and images motivate students and help them to develop the necessary scientific skills. Each unit contains 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 and extra worksheets. Each Teacher's Resource includes:

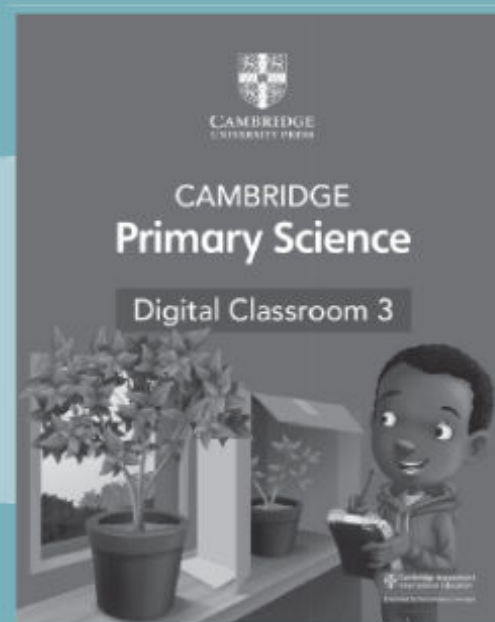
- A print book with detailed teaching notes for each topic
- Digital Access with all the material from the book in digital form plus editable planning documents, extra guidance, worksheets and more.






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. Teachers can assign learners questions from one or more tiers for each exercise, or learners can progress through each of the tiers in the exercise.

Digital Classroom includes digital versions of the Learner's Book and Workbook, complete with pop-up answers, 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
2.1 Solids, liquids and gases	2	Identifying and sorting solids, liquids and gases	Learner's Book: Think like a scientist 1: Making carbon dioxide gas Think like a scientist 2: Sorting solids and liquids  Workbook Topic 2.1 Digital Classroom: Activity – Solid or liquid?

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

BACKGROUND KNOWLEDGE

Most materials are either solids, liquids or gases. All materials are made of tiny particles. These particles are the atoms or molecules that make up the material. The difference between atoms and molecules does not need to be explained at this stage.

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

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

TEACHING SKILLS FOCUS

Active learning

Different types of science enquiry

Learners will carry out different types of science enquiry. After each Think like a scientist activity, ask learners to consider what kind of enquiry they have just completed.

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.