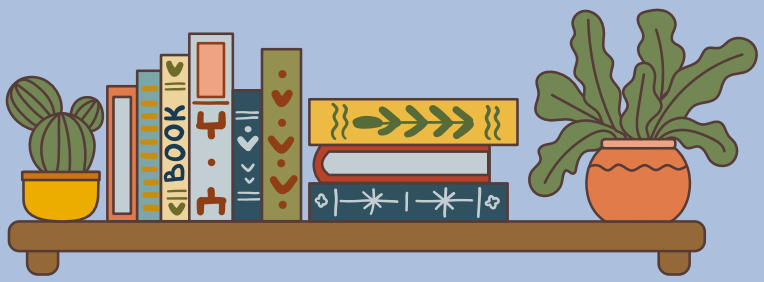


Book Reviews

Smart pickings

2nd edn. Lynne Bianchi
Manchester University Press, 2024
28 pp. £12.00
ISBN 978 1 526 18181 7

A lovely visual guide to inspire children to find answers to their own scientific questions

Smart pickings provides lots of prompts for important questions and discussions. As soon as you open the book, the inside cover is laden with brightly coloured squares, each containing one of 200 questions posed, investigated or shared by children as part of the Great Science Share for Schools. It is a great reminder of the naturally inquisitive nature of children's minds and the wonderful work of the team behind the Great Science Share for Schools, with some excellent ideas to investigate.

The layout of *Smart pickings* makes it a very accessible text: each double-page spread has a banner across the top that introduces the page. For example, '*If you could meet a scientist … who might it be?*' or '*It's important to share findings … so how will you?*' Underneath each of these headings are a range of photos or illustrations, which will inspire ideas and prompt conversations.

There are two double pages of the names and photographs of a wide variety of scientists who have worked in a range of scientific roles and dispositions. A clear table at the back of the book lists the scientists, their discoveries or inventions and when they lived. They range from nuclear physicist Chien-Shiung Wu, chemist Dorothy Hodgkin, all the way to British race engineer Leena Gade! There are some great starting points for discussion about what careers and roles there are for scientists – excellent for helping children to think about the spread and breadth of science and what roles might interest them.

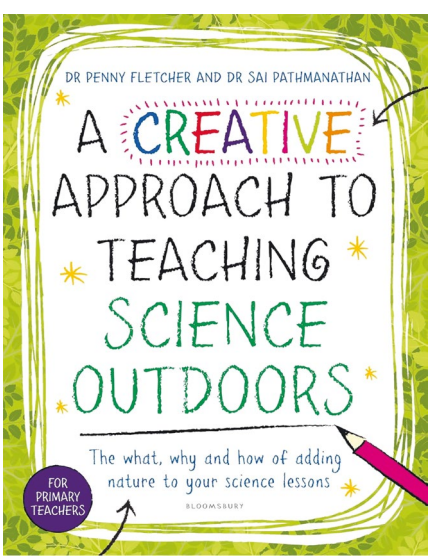
Especially impactful are the '*How would you investigate …?*' pages, with their focus around five types of enquiry, but the whole book could be used to guide the reader through a scientific investigation: from considering your question, to where you will investigate, what equipment you could use, how you will get results and how you will eventually share your findings. This is a lovely visual guide that could be used through the primary age range to help inspire children to independently consider their own scientific questions, and exactly how they can find answers.

Eleanor Bustard
Year 5 teacher, Longman's Hill CP School

A creative approach to teaching science outdoors

Penny Fletcher and Sai Pathmanathan
London: Bloomsbury Education, 2025
137 pp. £16.99
ISBN 978 1 80199 483 5

A must-have for any primary school teacher looking to inspire curiosity and foster a love of science outdoors



A creative approach to teaching science outdoors is an invaluable resource for primary school

educators looking to bring the natural world into their classrooms. This practical guide offers a wealth of ideas and inspiration for teaching science in an engaging and hands-on way, using the outdoors as a dynamic classroom. The format of the book is very user-friendly, making it easy for teachers to jump in and start planning lessons right away. It also covers the English, Scottish, Welsh and Northern Irish science curriculums.

Each lesson plan is thoughtfully structured, with clear, step-by-step instructions that make it simple to implement during outdoor excursions. Teachers will especially appreciate the '*Teacher tips*' boxes included with every activity, offering insightful advice and helpful suggestions to make the most of each lesson. These tips help teachers to anticipate potential challenges and provide effective strategies to enhance the learning experience.

One of the standout features of this book is the inclusion of links to additional activities and investigations, which encourage deeper exploration of scientific concepts. Whether you are introducing a new topic or looking for ways to expand on a lesson, these additional resources are a fantastic way to extend learning beyond the basics. Additionally, each activity comes with a clear list of materials needed, so teachers can easily prepare in advance. This ensures that lessons run smoothly and that nothing is left to chance when it is time to head outside and explore.

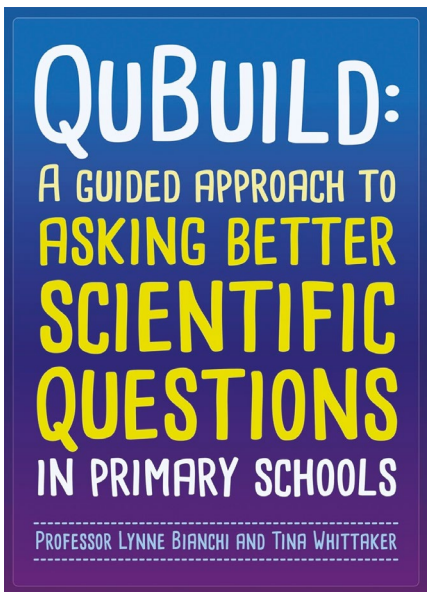
Overall, this book is a must-have for any primary school teacher looking to inspire curiosity and foster a love of science outdoors. It provides a perfect blend of clarity, practicality and creativity, which makes teaching science outdoors a fun and accessible experience for both educators and children alike.

Kimberley Whitmarsh
Y6 class teacher and science lead, Hemingbrough Primary School

QuBuild: A guided approach to asking better scientific questions in primary schools

Lynne Bianchi and Tina Whittaker
Manchester University Press, 2023
96 pp. £20.50
ISBN 978 1 5261 8007 0

A new approach to help teach a key skill of working scientifically



This resource introduces a new approach to teaching one of the key skills of 'working scientifically': helping children to ask 'better' scientific questions. Science is all about asking questions, an essential skill whereby children are involved in discovering new things through scientific enquiry. It plays a crucial role in helping all children develop as scientific thinkers, encouraging curiosity and critical thinking as they explore and understand the world around them.

The QuBuild process is straightforward and easy to follow, consisting of three clear steps to produce, handle and improve enquiry questions. This book is grounded in research and uses this research to provide a stimulus for teachers wishing to develop their practice of disciplinary knowledge. It also provides a collection of high-quality resources all in one place. Using this book, teachers could quickly and easily adopt the QuBuild process and share it with the children in their class. The book includes handout pages, marked with an icon on the top right-hand corner, ready to be copied for classroom use. These handouts can also be enlarged for science displays and working walls around the school. Each step of the process is accompanied by helpful teacher notes, offering guidance and examples.

For each step of the process, there are clearly labelled resources, including introductory activities, learning tools and visual prompts. The use of icons once again makes these resources easy to identify, which is a real time-saver for busy teachers. The materials are high quality and may include familiar resources from the Great Science Share, such as *Children's question spinners* and *Wonder bubbles*. Step 3, which focuses on '*Improving and refining questions*', will probably be the most enlightening for teachers, as this is something that may not be regularly practised during science lessons. For example, the handout headed *Children's question tweak* supports children to consider ways that they could improve their questions, in a scaffolded way. The book also encourages reflection (pp. 26–27) and includes case studies from different school contexts (pp. 88–93) offering valuable insight into real-world applications of the QuBuild process.

It is crucial that initial teacher

education emphasises the importance of working scientifically skills, and this book can serve as a core text to introduce students to the skill of asking scientific questions. Each chapter is supported by a quote from robust and relevant sources, both contemporary and historical, which ground the book in research and make it an essential read for evidence-informed practice. Initial teacher education students will benefit from using the resources with their peers during their course, before applying these ideas while teaching science on placement and in their early-career teacher years. The four case studies at the end of the book provide real-life examples of how and why the QuBuild process has helped to develop teachers' understanding and improved their ability to teach the skill of question asking. These case studies can be discussed and critically analysed by students, helping them understand the practical application of the process in different contexts.

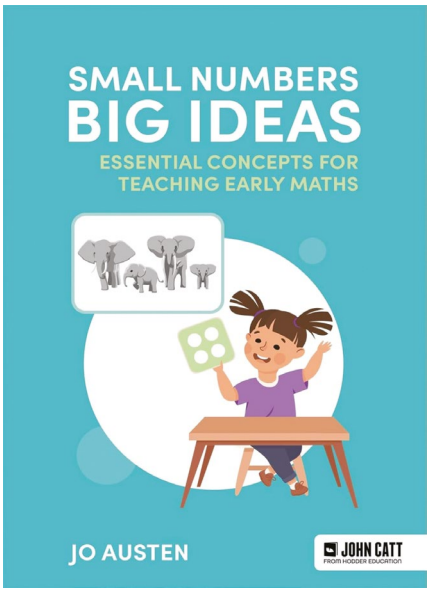
Emily Montenero
Senior Lecturer in primary science, St Mary's University, Twickenham

Small numbers big ideas: essential concepts for teaching early maths

Jo Austen
London: John Catt, 2024
151 pp. £16.00
ISBN 978 1 0360 0323 4

An excellent, accessible guide to teaching maths to young children

For those interested in the pedagogy of early mathematics, this book is an ideal starting point. At first, I thought it might be dry, relying on copious references to academic research, but it is not at all. The author provides a very accessible examination of the



misconceptions young learners have and the key concepts and skills they to need to acquire for early mathematics. The clear illustrations support the author's explanations and the language is succinct and easy to follow. As a teacher of year 2 children, I found the content easy to follow: it illustrates the key concepts needed, and explains how to use concrete resources (something that is vital in the teaching of early maths) to maximise the learning and embed crucial skills in young minds.

Each concept begins with a big idea that highlights the skill and its importance, before moving onto a clear, concise explanation of the skill, the misconceptions that children may have or mistakes they may make, how to teach the skill, and the resources that best support this. This small book with big ideas would be useful for any primary teacher as it reminds us of the vital part that concrete resources play in building solid understanding of the principles surrounding number, place value and basic calculations (as well as a chapter on shape and measure).

From a science perspective, it is clear that children need mathematics skills, and as a science lead this book reinforced the idea that in early science teaching we do not have to rush to recording in any great numerical way. The nascent mathematicians should be using concrete resources and non-standard units of measurement to show their observations and record results gathered during investigative work.

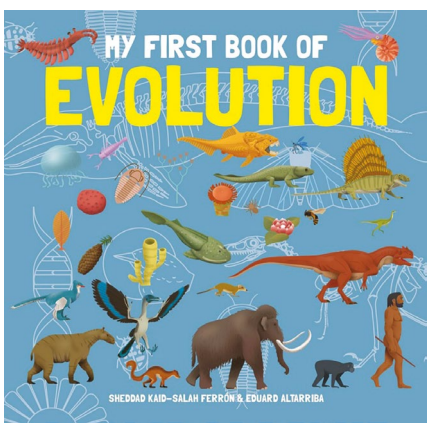
An excellent little book that I will be sharing with our mathematics lead as soon as possible.

Ian Watson
Science Lead , Milnrow Parish CE Primary School, Rochdale

My first book of evolution

Sheddad Kaid-Salah Ferrón and Eduard Altarriba (illustrator)
Lewes, East Sussex: Button Books, 2024
48 pp. £12.99
ISBN 978 1 787081 30 7

An absorbing introduction to evolution for age 8+



Forming part of Ferrón and Altarriba's 'My first book' series of scientific titles, which cover topics from cosmology to quantum physics, *My first book of evolution* has the added appeal for science educators of relating directly to the key stage 2 (ages 7–11) curriculum. This comprehensive book covers all angles of evolution,

and I appreciate how the historical perspective helps set the scene for current science, as well as future considerations around this topic.

Altarriba's captivating illustrations are surrounded by Ferrón's carefully crafted sections of text, which break down big subjects into manageable chunks. Each page draws you into the details: I found myself absorbed for some time, as I followed the voyage of HMS *Beagle* around the intricate map and pored over the evolution of life timeline. Easy to navigate with clear contents, the chapters are also linked with signposts to relevant pages elsewhere in the book. My only wish would be the addition of an illustrated glossary to make the sophisticated vocabulary more accessible to the age range at which this book is aimed.

If anything, 'My first...' rather undersells the depth that this book dives into and I think the level of the text will make this a challenging read for many key stage 2 pupils: there is plenty in here to absorb and extend both teachers and pupils. I learnt new facts from reading this and gained new ideas for developing how I approach this topic in school. I am eager to explore the other titles in the series.

Katie King
Science Subject Leader, Headington Rye Oxford Prep School

Tribute

Farewell to Martin Hollins

We were very sad to hear of the death of our former Editor, Martin Hollins, on 12th January 2025.

Former Assistant Editor, Rachel Linfield, has written the following tribute.

I first 'met' Martin Hollins 30 years ago when he phoned to ask whether I would be willing to join the Editorial Board for *Primary Science Review*. Within minutes we were sharing our thoughts on science clubs, investigations and ways to engage the interest of both children and teachers. I quickly realised that Martin was encouraging, supportive, enthusiastic, a good listener and very knowledgeable. So my answer was an eager '*yes please*'.

In Board meetings, Martin always made everyone feel welcome and his chairing skills were clear to see. Meetings were enjoyable, with a sense of 'What can we do next?', 'What is new?' and 'What should change?' He listened to our ideas, but Martin also could say an assertive 'no' when he did not feel things were moving in the right direction. I was delighted when Martin encouraged me to be an assistant editor and appreciated learning editorial skills from him.

It was a great pleasure to work with Martin and I will always be glad that when I joined the *Primary Science Review* team, he was the Editor. I know that the *Primary Science* journal of the 2020s has much to thank Martin for, with his vision for engaging and inclusive science.

Rachel Linfield
Senior Lecturer, Carnegie School of Education, Leeds Beckett University

More tributes to Martin can be found at: www.ase.org.uk/news/tribute-martin-hollins