

100 Ideas for primary teachers: science

Paul Tyler and Bryony Turford
London: Bloomsbury, 2020
135 pp. £14.99
ISBN 978 1 4729 7668 0

An absolute joy to read and a must-have for all primary teachers

This is a wonderful compendium of practical science ideas from the primary-science-passionate duo Bryony Turford and Paul Tyler. Both authors have over 20 years' experience in primary education and have produced a collection of ideas that is a science coordinator's, or any teacher's, dream.

The book begins with a short introduction that states: *'Included in this book are ideas to help you develop your teaching practice and the science content you teach, and to help you integrate science across the whole school.'* In a nutshell, it calls for a collective school ethos to drive science forward to ensure children foster a lifelong love for the subject. This book goes the whole nine yards in achieving exactly that!

Helpfully, the book is compartmentalised into digestible bitesize sections. The first eight pages focus on the *'fundamentals of primary science'*, highlighting the big ideas, working scientifically and keeping it simple. The next 60 pages or so are split into the three key areas of science: biology, physics and chemistry. The organisation of the ideas in these sections is outstanding.

In the biology section, ideas such as *'label a human'* and *'inheritance traits'* are remarkably simple, but the actual learning that stems from these ideas is potentially ground breaking. Paul and Bryony have clearly worked hard to streamline and finely tune ideas so they fit perfectly into the make-up of a primary school classroom. Teachers should applaud the simplicity, as some ideas in this section need little or no resourcing – genius!

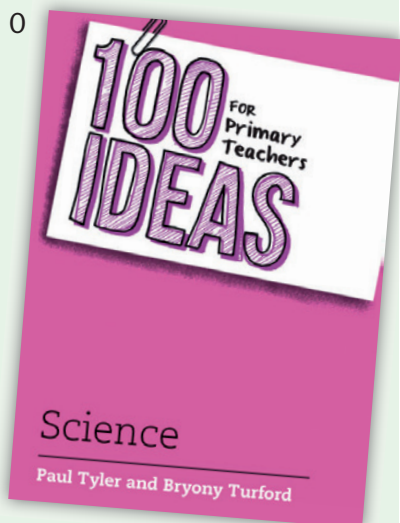
The physics and chemistry sections are of a similar ilk: perfectible, adaptable and transferable ideas that children of primary age will absolutely love. My favourite ideas in the physics section are making magnets, rocket mice and marble run. In the chemistry section they include biscuit dunking, copper chemistry and hydrogels. All are miniscule gems of genius that will make science memorable and ultimately worthwhile.

Paul and Bryony have also invested time in discussing teaching strategies and resources. As a teacher myself, this advice is absolutely invaluable and I can wholeheartedly understand why they have included it in the book. The cross-curricular sections on maths and English illuminate the fact that science can also be taught in other core areas of the curriculum. To finish, science capital is discussed, with areas such as visitors, clubs and parental engagement each having their own dedicated pages.

This book is an absolute joy to read and a must-have for all primary teachers who want to ignite science in their classroom!

Michael Good

Stoneferry Primary School, Y1 Teacher and Science Coordinator



Primary science question sets: years 3&4 – issue 1

Learning by Questions team
Blackburn: Learning by Questions, 2018
125 pp. £25.00
ISBN 978 1 912873 11 1

A handy database of questions in conjunction with an online platform

This book runs hand-in-hand with the online learning platform from the same company (Learning by Questions, www.lbq.org) and is full of differentiated questions. It is a handy way to search through your topics before inserting them into the online platform to question your pupils. I looked at the science book but literacy and numeracy are also available.

At the start of the book, there is a breakdown of how to set self-paced questions, ad hoc questioning or to support teaching. This is very clear and matches the online platform, which I joined for free for a short period of time. Each question gives the pupil instant



feedback online, once they have answered the question. Once past all this information, there is a clear contents page, which makes it very easy to search by science topic. Each area is then split into three levels to encourage deeper thinking. As a teacher, each pre-set question can also be annotated to make discussion points around the answers given. It is a very easy book to navigate and you can see that the questions are very well laid out. The step-by-step guides are also extremely clear to follow and it took me moments to set up a free trial account. Having said that the book is very clear, I can't help but think it seems a bit irrelevant to have a paper copy, knowing that all the questions are available to search online. When everyone is looking at ways to save paper and help the environment, it does feel unnecessary to have this book, rather than just the online platform that enables you to complete searches at the press of a button. If you are looking for a

question tool for the classroom then I would recommend signing up to the free trial to see how you feel about it but I wouldn't be looking to purchase the book.

Ian Griffiths

Deputy Head, Timberley Academy

Primary science question sets: years 5&6 – issue 1

Learning by Questions team
Blackburn: Learning by Questions, 2018
110 pp. £25.00
ISBN 978 1 912873 12 8

A planning and teaching aid for teachers providing high-quality questions

This is one of a series of books that offer high-quality questions organised into sets that cover the science strands in the English National Curriculum. The book is ultimately a guide for what is on offer on the publisher's website (Learning by Questions, www.lbq.org).

Although you can use these questions without pupils having access to internet-enabled devices, this is its main USP. For example, you could still use the questions or diagrams as teaching resources or for classroom displays. Using devices, the questions can be accessed as 'self paced' or teacher directed (ad hoc). There is also the ability to make your own questions. The software will provide *'immediate pupil feedback'*; however you will need to subscribe once a no obligation trial has lapsed. The book itself provides a quick-access reference guide to all the topics and the question sets. There is an option of having a subscription-free account, but this only provides access to the questions and not the interactive pupil section.

The book is well laid out and the questions are easy to access. They would be a useful planning tool if you are teaching a new or unfamiliar topic. All the questions offer a visual aid picture, diagram



or graph. There is then a multiple-choice option for that specific question. The book could be used for planning or for assessment, although it doesn't take away the need to teach the skills and knowledge associated with each topic. It would also be a useful resource to use to ensure each topic is covered in full. The full potential of this resource will depend on your school's ICT resources and whether you choose to subscribe.

Doug Ashton

PSTT fellow, science lead and year 6 teacher, Kings Norton Primary School, Birmingham

The beaks of birds

Richard Konicek-Moran and Kathleen Konicek-Moran
Arlington, VA: National Science Teachers Association, 2019
36 pp. £13.95
ISBN 978 1 68140 352 6

A colourful triumph of a book for any budding biologist! For ages 8–11

The *beaks of birds* is written by husband and wife naturalist team, Richard and Kathleen Konicek-Moran.



With striking imagery and colours, the front cover shows a delightful array of birds from around the world – enough to intrigue and enthuse any child to want to take a look inside! The blurb invites us to: 'Come along on a tour of the wonderful birds and their beaks'. It tells us to play the detective as we investigate different birds from around the world, why they have different-shaped beaks and what they are used for. Essentially, it is a fascinating insight into the natural world for 'future birders and biologists'.

The story begins with the narrator asking us to go 'walking with your neighbours', Mr and Mrs Hernandez, as they are experts on nature. The text is written in second person ('you'), which is highly unusual for a text of this nature. However, this is a masterstroke by the authors, as it allows the reader to be directly involved in the story. It gives the reader direct participation

in the text and allows them to investigate each aspect of the book closely. The biology lives through the conversation you are having with Mr and Mrs Hernandez. For curious minds, this is a perfect way to understand the function of each bird beak we encounter.

Upon encountering each bird, we write down key information about each species and draw a labelled diagram to help us remember the function of its beak. All the information is recorded in a 'field notebook'. The illustrations of each bird species are spectacular. The field notebook adds a perfect scientific learning backdrop, cementing our knowledge of birds' beaks.

The book is successful in teaching children about the different beaks of birds, using evolution and environment to explain this. A colourful triumph of a book for any budding biologist!

Michael Good

Stoneferry Primary School, Y1 teacher and science coordinator

When the Sun goes dark

Andrew Fraknoi and Dennis Schatz, illustrated by Eric Freeberg
Arlington, VA: National Science Teachers Association, 2017
32 pp. £9.99
ISBN 978 1 68140 011 2

Presents some complex science in an accessible child-friendly way, for ages 9–14

Through fictional means, Fraknoi and Schatz explore the science behind eclipses. Aimed at upper primary/lower secondary children the informatively illustrated story focuses on the two children's grandparents and their chase to view solar eclipses around the world. In doing so, they present some complex science in an accessible child-friendly way. While the book links very well to the year 5 (ages 9–10) 'Earth and Space' unit in the current English National Curriculum and thus meets the age group it is aimed at, I suspect the presentation of this information as a story and the excitement of the



'chase' means it would appeal to children age 7+, especially those with an early interest in astronomy and space. The authors do not simplify the scientific vocabulary, but it is well explained by the grandparents in the story. The useful diagrams and helpful glossary at the rear of the book offer definitions for the more complex vocabulary.

In addition to the story, the book offers several non-fiction features

that help to explain the science; the diagrams are well placed and easily interpreted with helpful captions. Misconceptions are carefully dealt with, as is Sun safety, and the demonstrations carried out by the grandparents could easily be replicated in the home or classroom.

Alison Lowther

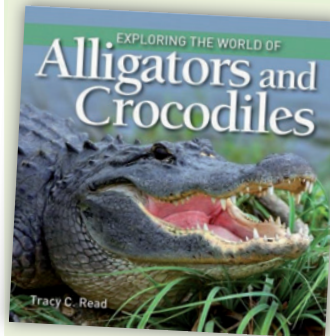
Science Subject Lead, Thorpe Willoughby Primary School, Selby, North Yorkshire

Reviews by children

The following reviews have been written by children from Avoch Primary School in the Highlands of Scotland and are published here with additional comments by their teacher.

Exploring the world of alligators and crocodiles

Tracy C. Read
Richmond Hill, ON: Firefly Books, 2017
24 pp. £4.95
ISBN 978 1 77085 943 2



This is a book about crocodilians, where they live, what they eat and lots of other information. The words are quite hard to read and understand for people of our age (8–9 years). The pictures are all photos and are big and colourful. We loved the layout, being one page of pictures and one page of words on each double spread. The book has quite a lot of small writing, which we needed some adult help to understand. But with some explanation we really enjoyed reading and looking at the book and learnt lots about the crocodile family. Our favourite part is the crocodilian facts page because it's in small paragraphs that focus on certain things. We enjoyed looking at the pictures and talking about what we could see in them. It is really good as they are photos not drawings but the pictures sometimes don't connect with the writing.

On the whole we loved this book and would recommend it for people of our age and above.

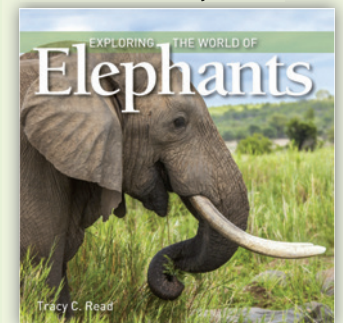
Kaleb, Wilbur and Siobhan (P5/4)

Teacher comment: This is quite a short book, but it contains everything children would ever want to find out about crocodilians. They found it quite challenging to understand in places, but it is a good introduction to all the correct terminology and scientific language. They loved the photos, which prompted much discussion and a keenness to do further research on these animals.

Exploring the world of elephants

Tracy C. Read
Richmond Hill, ON: Firefly Books, 2017
24 pp. £4.95
ISBN 978 1 77085 945 6

This non-fiction book is very amazing and it really appealed to our age group. The layout is very good because the pages are not full of writing. The pictures are very child friendly and we loved them. The book is about most of the things you would ever want to know about elephants and how they live. It has quite a lot of writing, but we could read it and understand it. On every double page there is about one page of small-print writing. The book has a very nice layout because it is really bright and colourful. It's long enough to tell you everything you need but not too long. The pictures are not drawn – they are real



photos and they go very well with the writing. It tells you the different types of elephants like African elephants and Asian elephants. Our favourite part is when it tells you about the different senses. It would be better if the writing was broken down into smaller chunks and a quiz at the end would have made it perfect.

We would recommend this for 7+ because it has some quite hard words. We would definitely like to read this if it was in our school library.

Emily, Max and Noah (P5/4)

Teacher comment: In this book the young reader can learn about the physical attributes of the largest land animal on Earth. The children in my class loved the layout of the book and its large bright photos that really brought the book to life. The words proved quite tricky for my class when peer reading, but they could understand it with a bit of help. All the 'big hard words' are important though, as they introduce the correct vocabulary. The fact page was the most popular as they were keen to learn and compare them with other animals in this series of books.

Lifecycles: Seed to sunflower

Camilla de la Bédoyère
London: QED Publishing, 2010
24 pp. £6.99
ISBN 978 1 7860 3620 9

This non-fiction book about sunflowers is appropriate for ages 5 and over and is full of interesting facts. The pictures are real photos and are colourful and detailed, making it nice to read. The text layout is good and matches with the pictures.

The book is about how sunflowers grow from seeds to huge



plants. It tells you what bugs eat from the sunflowers and everything else you would want to know. The book has amazing words in it and we loved the facts. We learnt a lot about all plants just by reading

about sunflowers. Our favourite part was all the interesting facts on each page. We could all read all the words in the book and we liked that there wasn't much writing on each page. The pictures are close-up photos. This is amazing as it brings the story to life.

We wouldn't make any changes as the book is incredible and we all loved it. We would recommend this book. This is now our favourite fact book!

Diana, Phoebe and Aaron (P5/4)

Teacher comment: This short book is packed with fascinating information and photos that really encourage the children to discuss what they had seen and motivated them to read on. It is plenty long enough for young children of this age. My class (aged 8–9) could all read the words and scientific words are explained in the glossary. They all loved the whole series!

Exploring the world of whales

Tracy C. Read
Richmond Hill, ON: Firefly Books, 2017
24 pp. £4.95
ISBN 978 1 7708 5949 7

The book tells you everything you want to know about whales, humpback whales and all other types. It tells you about killer whales too. You can learn all about the body of a whale and what a baby whale looks like. It shows you what whales eat. The layout is really interesting because it has got real photos with writing. It is an interesting book and we enjoyed it.

There's quite a lot of words and they're really small. We would make the writing bigger because it is tiny and there is lots of it. The layout is fantastic because on each double page there is a good balance of text and photos. The words and layout are amazing because the words match the pictures. We loved the photos because they look really interesting, realistic and close up too! Our favourite part of the book is the whale fact page because it tells you about the whale's body in different bubbles. We liked that the text was broken up into short facts that we could learn and share with friends.

We would recommend this book because it is a really good way to learn about different types of whales. We also think this book is suitable for ages 7+ because younger ones might find it a little hard to read.

Maisie, Georgie, Aaron (P5/4)

Teacher comment: This book is a lively, fully illustrated introduction to some of the planet's most intelligent animals. The children loved looking at the real photos of the whales and they were keen to read to find out what they were looking at. Some of the text is quite scientific and in depth for this age group (8–9 years) and they needed a bit of explanation to fully understand all that they read. All in all, a great addition to the school library.

Lifecycles: Fry to seahorse

Camilla de la Bédoyère
London: QED Publishing, 2012
24 pp. £6.99
ISBN 978 1 84835 584 2

This book is mostly about a fry growing into a seahorse in stages. Seahorses are different from other animals because the male carries the baby. There are short pieces of large-font text and some beautiful photos showing lots of different things about seahorses. There are



not a lot of words to read. Text is broken up into short paragraphs. Difficult words are highlighted and included in a glossary. We loved the layout as it makes you want to read more. We think there is a good balance of writing and pictures in the book. The pictures are real photos which is cooler and much more colourful than just using drawings. We think this book would appeal to children of 5 years old and older.

We enjoyed reading this book – our favourite part was learning about the whole lifecycle of an animal we knew nothing about.

Kasie, Saffron and Jamie (P5/4)

Teacher comment: The children (aged 8–9) loved seeing the pictures of seahorses and learning about all different aspects of their lives. They could all read this book by themselves as scientific words are explained in the glossary. It is quite a short book, but it was enough to create an interest with the children.

Lifecycles: Acorn to oak tree

Camilla de la Bédoyère
London: QED Publishing, 2012
24 pp. £6.99
ISBN 978 18483 5580 4



This is a great book because it has lots of fun facts about the lifecycle of oak trees. In learning about the oak, you also find out about other types of trees. There are lots of photos to help you understand it, which really add to the text and the words are easy to understand. The layout is lovely in that that there are some really big pictures with a bit of text – so it suitable for really young children. There are not too many words and if you do get stuck there is a glossary to help you. The layout is good because it is nice and clear, with big writing broken up into paragraphs. We think the pictures help you to understand about the writing and they are more interesting because they zoom in. They are big, bright and colourful and they are not hand drawn. They have lots of pictures on the pages and they are very big. The pictures connect to the writing and they show you a mini lifecycle.

We liked learning facts about the oak trees and how we got to see the acorn grow. We also liked the front cover because it shows you what the book is about. We would recommend this book because it has got a brilliant story to it. We would give it to plant lovers and anyone doing a project on plants at school. We think that it would be great for 5+ because it is very exciting and fun to read. We would give it five stars.

Teacher comment: This is a lovely book packed with facts about the lifecycle of a tree. The text is quite large and easy to read and is supported by lots of lovely, clear photos. The children in my class (ages 8–9) loved reading this book and could read and understand it without help.

You too can become a reviewer. Contact janehanrott@ase.org.uk if you are interested.