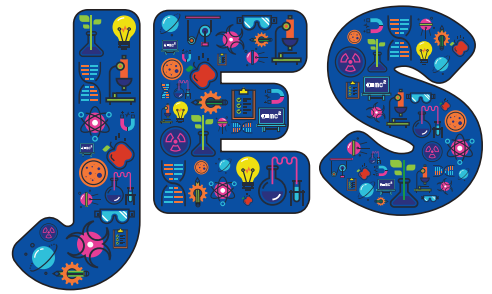


Resource Reviews



Emerging Biology in the Early Years – How Young Children Learn About the Living World

By: Dr Sue Dale Tunncliffe

Published in 2020 by Routledge

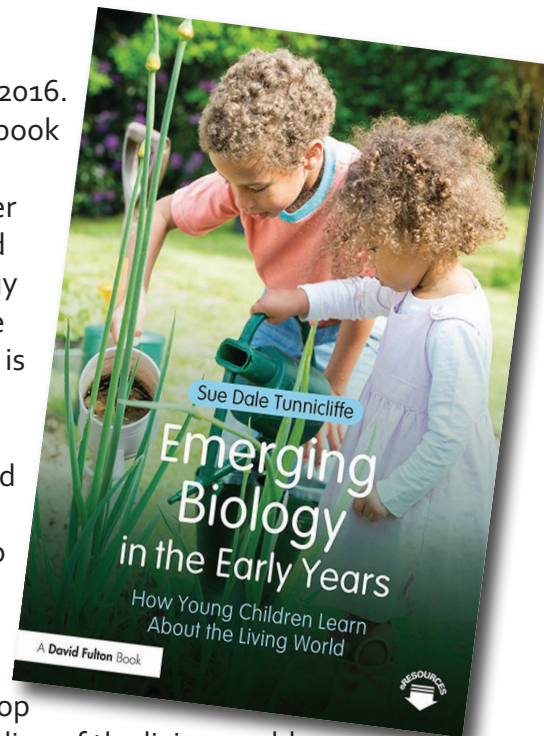
Price: £19.99

ISBN: 978 0 81537 710 8

This interesting, informative and highly accessible book puts the agency of the child at the heart of becoming an emerging biologist. Written by an expert in the field of early childhood science education – Dr. Sue Dale Tunncliffe, Reader in Science Education at UCL Institute of Education – this book demonstrates how young children can be scaffolded and supported to become emerging biologists, via a number of age-appropriate activities steeped in good pedagogical practice for science education in the early years. Sue Dale Tunncliffe explains that this book is the result of a question that has driven her own reflections and research for 50 years in science education: where do children acquire their knowledge of biology and how do children interpret their world? She notes that the answer is found in children's understanding of their home and community, prior to any formal schooling, and this reflection I am sure will resonate with effective early years practitioners.

She goes on to explain that this book is also the result of conversations about how children establish the foundations of their biological knowledge in the early years with her friend and fellow biologist Ann Wright, Professor at Canisius College, Buffalo New York, who unfortunately

passed away in 2016. Therefore, this book is a poignant dedication to her and their shared vision for biology education in the early years, and is written for teachers, practitioners and parents to support them to enable the children they teach and raise to further develop their understanding of the living world.



Recognisable themes in biology run through the book, underpinned by key information about research, scientific concepts and ideas, as well as suggested activities and discussion points highlighted as 'Talk science'. The book is compartmentalised into 8 chapters, focusing on learning about:

- The living world, from the perspective of young children themselves – their interests;
- Ourselves;
- Animals;
- Plants;
- Observing changes in the living world;
- Naming living things;
- Earth science; and
- Interactions between physical science and living things.



All the activities and pedagogical approaches suggested would fit well into delivering the EYFS curriculum as well as Key Stage 1 (ages 5-7); however, Dale Tunnicliffe cautions that very young children will not necessarily manage to carry out the activities in the same way as older children and so it is important for the adults supporting them to see how their 'emerging biologists' respond to the activities presented, because the methods described in the book may not be the best way for every child to tackle each activity. This reflects a personalised learning approach as well as the importance of assessment for learning, both of which are recognised as integral to effective early years education (Colwell *et al*, 2015). I also think that this is sage advice for parents and teachers, given that sometimes activities can be disregarded as not appropriate or inaccessible for younger children, rather than being adapted.

The author also clearly emphasises that early years educators should seek to facilitate active learning and encourage children who, she argues, are all intuitive scientists, to ask questions. Therefore, insights into the crucial role of adults as facilitators and scaffolders of learning are given – it is clear that the author believes that adults do not tell children what to do, nor provide detailed scientific information (this is the remit of formal learning much later on in the school setting, she argues); instead, the role of the adult is to encourage children to '*think, and wonder and work on their own initiative, rather than be dictated to*' (2020:3) by adults.

For me, the power of this book lies with the focus on the importance of 'play' to promote challenging and positive opportunities for emergent biologists to explore, interpret and understand their world.

In today's political climate, teachers and facilitators are held highly to account, and rightly so – all children deserving the absolute best education undertaken in a safe and stimulating environment. However, there still unfortunately exists the attitude, from some, that 'play' is 'just playing', thus taking a negative approach to 'play' and failing '*to understand its essential and critical value*' (2020: 5). Experiential learning and learning through play are key early years teaching pedagogies, which, when facilitated well, lead to effective learning outcomes for young children. This absolutely resonates with the idea of teacher-initiated activities leading into child-initiated exploration (and vice versa), incorporating observation, questioning and problem-solving: a clear reflection of good practice in teaching science to young children.

Therefore, all educators in the field of early years education would certainly benefit from reading this book, but I would also go as far to say that this book could inspire teachers and science co-ordinators of older children within the primary age range to utilise play and opportunities for talk to support the development of their emergent biologists throughout their primary school career.

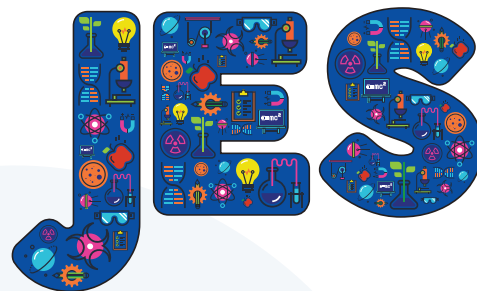
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Colwell, J., Beaumont, H., Bradford, H., Canavan, J., Cook, E., Kingston, D., Linklater, H., Lynch, S., McDonald, C., Nutkins, S. & Ottewell, S. (2015) *Reflective teaching in early education*. London: Bloomsbury Publishing

Amanda McCrory



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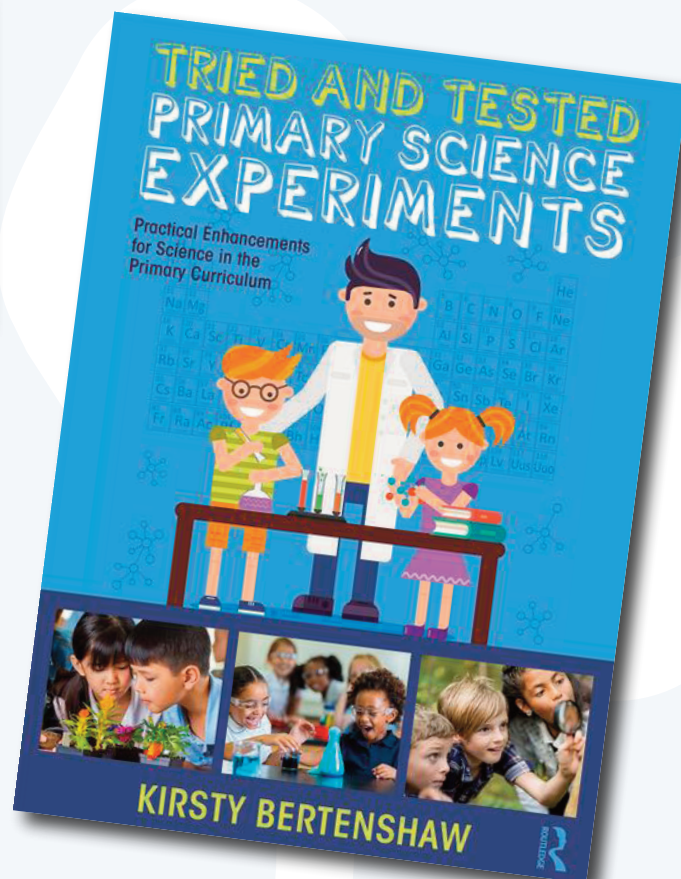
**Tried and Tested Primary Science Experiments
– practical enhancements for Science in the
Primary Curriculum**

By: Kirsty Bertenshaw

Published in 2019 by Routledge

Price: £18.39

ISBN: 978 1 138 31782 6



This book provides examples of practical step-by-step science experiments for teachers to follow and organise with primary students. The science activities cover all the primary years (ages 5-11). The experiments are simple and safe to implement and are designed to engage children when learning science. The experiments are aligned with the National Curriculum for England Statements. Topics covered include: plants; materials; seasonal changes; living things; sound; light; electricity; Earth and space; and evolution, catering for a wide range of topics. Each activity is pegged with the National Curriculum Statements and Assessment Indicators. The equipment needed is listed, together with instructions. Health and safety issues are also covered and black and white pictures of equipment are included.

The book provides many good ideas for primary teachers who wish to include plenty of hands-on activities when teaching science to their students. Many of the experiments use everyday materials. This helps teachers to design experiments with little difficulty in finding the materials needed. While the book would have benefited from photographs in colour, it can still be considered as a good aid to planning science experiments.

The book is thus a good companion for enthusiastic primary teachers, who can regularly consult it to be inspired to find experiments to augment the learning science experience. It can also be used by student teachers, who need to have practical ideas at hand and access to simple experiments that are easily implemented.

Suzanne Gatt

