



Figure 1 Learning about food webs in Bucket School

Grab a bucket, we're taking science outdoors!

Nicky Bolton describes how Bucket School provides a vehicle for exciting outdoor learning

Several years ago, I was asked to develop an outdoor area at school to encourage the teachers to take their teaching and learning outdoors. Educational research at the time advocated that this approach to learning could potentially increase pupil progress by an average of nine months' extra schooling (DfES, 2006), so it was an attractive approach to explore. I fundraised, wrote to local

businesses for materials and built a very expensive, structurally spectacular, wooden pergola – with a blackboard and blinds around the outside. It was a thing of great beauty, which, sadly, after an initial flurry of use, became a storage receptacle for the infant play equipment and a gathering point for autumn leaves. Clearly, despite research showing this had the potential to be a highly effective approach, building an outdoor classroom was not an effective way to encourage staff to take the bold step to teaching outdoors.

When I discussed with the teachers why they were not using the outdoor classroom, their responses echoed a report by Natural England (2016). They were worried about various issues such as the deterioration in children's behaviour, health and safety, time constraints and effectively satisfying the demands of the National Curriculum. Teachers also felt that having one fixed outdoor classroom

structure restricted study to one area of the school grounds. Evidently, a different approach was needed to tempt them to venture outdoors.

Before I could investigate alternative methods of promoting outdoor learning, another interesting issue arose during discussion with the teachers and trainee teachers I worked with. I realised that for some teachers, particularly younger teachers and trainees at the beginning of their career, an additional factor contributed to their hesitancy to use the outdoors: an inherent perception that they lacked knowledge and understanding of nature and the outdoors.

The nature-deficient generation

If you examine the work of advocates of outdoor learning, such as Monbiot (2016), Louv (2010) and Macfarlane (2017), they describe a generation of children who are growing up in an indoor world, lacking knowledge of the basic vocabulary of nature, obsessed

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Figure 2 The ways of using the buckets to support teaching and learning are limited only by your imagination!



platform and to provide a simple teaching model that could facilitate this. A model would allow children to have the freedom to move their classroom around the school grounds and beyond. It needed to be a flexible, organic model that was cheap, simple and gave the children a signpost that effective learning outdoors was about to take place.

teaching circle of 30 children, providing an instant, outdoor classroom. They could be something to collect with, something to label or even something to launch rockets from! Teachers, particularly trainee teachers, have found that using this structure has given them confidence to take their learning outside. Providing they have planned carefully, polished their subject knowledge and have clear lesson

objectives, their learning outcomes have been excellent. Edge Hill University in Ormskirk, Lancashire, has now explored Bucket School with five yearly cohorts of trainee teachers and every year the trainees leave the session bursting with scientific possibilities and ways in which they can contextualise the use of Bucket School.

In my classroom, there is always palpable excitement when I write Bucket School on the daily plan. The children immediately know that learning will be outdoors and it will be interactive. Bucket School creates opportunities for the children to explore their scientific ideas in a hands-on exploratory manner using a combination of natural and scientific equipment. The messier the better and the more memorable!

with a digital world and disconnected from the outdoors. Louv (2010) refers to this lack of contact with the natural world as 'nature-deficit disorder' and it is the reason why schools across the UK are keen to promote the outdoors across the curriculum among their pupils. However, what many schools and educational training institutions do not consider when encouraging teachers to promote this approach, is that the young teachers they are employing and enrolling, have also grown up in this 'nature-deficient' culture.

Many of us are increasingly familiar with the term 'science capital', the accumulation of knowledge and experiences through an individual's life. However, in this case, let us coin the phrase 'nature capital', the accumulation of knowledge, understanding and experiences in the outdoor environment. How many of the young teachers entering our profession have not built a firm foundation of 'nature capital' and does this affect their propensity to take learning outdoors?

Developing a model to support teaching and learning outdoors

My research into this issue made me determined to devise an approach that would encourage both experienced and newly qualified and trainee teachers to approach outdoor learning confidently. The challenge was to enable every teacher to view the outdoors as an effective learning

I called this model 'Bucket School' and initially developed the approach using primary science as a focus.

Introducing Bucket School

Bucket School is a versatile, portable learning model that can be tailored to satisfy almost all of the Science National Curriculum in England objectives. At a fraction of the cost of building an outdoor classroom, it allows creative (and messy) learning, while providing a powerful way to promote a love of learning outdoors. Bianchi and Feasey (2011) describe the whole school and its local environment as '*a theatre of learning*' and, using Bucket School, we have found a myriad of investigative opportunities in and around our school environment.

Bucket School in action

When I have given presentations about Bucket School, teachers have asked whether there is a set of lesson plans they can use. The answer at the moment is no. The whole concept of this approach is that when the children hear they are doing Bucket School, they know they are taking their learning outdoors – it is as simple as that! Each and every teacher will have their own perception and ideas of how to use the buckets.

At its simplest level, the buckets could be something to sit on in a

Box 1 The aims of Bucket School

Bucket School is intended to:

- improve teacher confidence in taking learning outside the classroom;
- provide opportunities to explore concepts from all elements of the 2014 National Curriculum in England practically in an outdoor context;
- provide a strong emphasis on skills-based science/working scientifically;
- increase self-esteem and self-confidence;
- improve social skills (many activities involve group work);
- improve motivation and encourage concentration;
- contribute to children's knowledge and understanding;
- allow teachers to gain new perspectives on seeing the children responding in a more child-driven environment;
- create ripple effects beyond Bucket School – children will take their experiences home and tell family and friends.



Figure 3 Bucket School in action at Rock of Joy Lugala School in Uganda for teaching about recycling

Bucket School goes to Uganda

Recently, I have visited schools in Uganda and used the Bucket School to explain the importance of recycling, using a series of games and experiments (Figure 3). The Ugandan children found it hilarious, but the teachers were excited by the possibilities of using the Bucket School as an extra outdoor resource, especially as they had limited space to teach inside. They hoped, at a simplistic level, to create a science laboratory on buckets outdoors.

Endless possibilities

The possibilities for Bucket School sessions are endless! One school play a science game involving golden buckets with hidden scientific symbols painted inside and recently we have seen Bucket School in a graveyard, considering the properties of materials

in the gravestones. Perhaps the most smelly Bucket School session I have led involved mummifying fish, to consider the effects of rotting!

Bucket School is not a prescriptive approach – it is simply a vehicle for exciting outdoor learning for both staff and children, stimulating contextual experimentation and allowing a generation of children (and staff) to gain a lifelong love of learning in the outdoors.

And finally, if you decide to trial this approach, it is worth buying strong builders' buckets as we have had a few bottoms trapped inside the cheaper versions!

References

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To see some of the ideas we have tried, visit the Facebook page we have started: www.facebook.com/BucketSchool We would love you to add your ideas.

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