Outdoor Learning

Practical guidance, ideas and support for teachers and practitioners in Scotland

Section 1:
Introduction
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It is possible, through international comparisons, to recognise Scotland as an emerging leader in the field of outdoor learning. Scotland has a long history of engaging children and young people with the outdoors and the value placed on outdoor learning within Curriculum for Excellence is encouragement to continue, and build upon, that history. Indeed, Scotland is one of only a handful of countries which now explicitly includes the use of the outdoor environment as a necessary approach and context for delivering its education curriculum. Just as Scotland is being recognised as an innovative forerunner in curriculum reform at a time of exponential change, so it is beginning to be recognised as a leader in the use of outdoor learning.

By capitalising on the potential of the full spectrum of outdoor learning experiences, from simple learning activities close to schools and settings through to residential experiences and beyond, practitioners can contribute positively to the learning journey of Scotland’s children and young people.

The purpose of this resource is to provide practical, accessible and straightforward advice for teachers, childhood practitioners, youth workers and others working with children and young people on how to engage children and young people with learning outdoors. It is part of achieving a wider objective of supporting the implementation of the guidance document Curriculum for Excellence through Outdoor Learning.

This resource introduces practitioners who are not familiar with outdoor learning to exploring ways of taking children outside. It provides a route into continuing professional development and suggestions for embedding outdoor learning as a whole-school approach. It serves to illustrate the potential of outdoor learning as an effective approach to learning and teaching within the context of Curriculum for Excellence.

It should be noted that this resource is not a definitive guide to outdoor learning in Scotland and that there are many ways of taking learning outdoors that will not be covered in detail.

Further support and guidance are available on the Education Scotland website and through Glow. There are also many partner organisations and individuals throughout Scotland who produce materials and provide first-hand support to enable practitioners to facilitate quality learning outdoors for children and young people.

Please visit www.educationscotland.gov.uk/outdoorlearning for more information.
Outdoor learning within the curriculum

‘We are not saying ‘good bye’ to our classrooms; we are opening them up.’
Simon Beames, Outdoor Education Lecturer, Edinburgh University

Learning outdoors is about engaging children and young people in many different ways. Practitioners frequently act as facilitators, using multi-sensory and experiential approaches. This encourages children and young people to become involved in emotional, physical, aesthetic, spiritual and cognitive experiences as part of their learning.

The place or context in which learning takes place is an integral part of the learning process, as illustrated in Figure 1. The relationships between the people involved, the activities undertaken and the place where the learning happens require thought and consideration to maximise the learning opportunities and to meet the needs and aspirations of children and young people.

Figure 1: The learning process.¹

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The place in which people learn also helps them to make connections between their experiences and the world around them in a meaningful context. Outdoor places provide a diversity of resources and spaces that is hard to replicate in an indoor environment.

Time is a consideration as the seasons, life cycles and the passing of years create an ever-changing environment. A 5-year-old child is likely to have a very different experience when going for a walk in their local area from that of a 15-year-old. When planning a progression of outdoor experiences, practitioners can use these natural cycles and changes advantageously, adding value to the curriculum at every level.

Within these contexts are opportunities to develop skills for learning, life and work. The numeracy, literacy and health and wellbeing experiences and outcomes that are the responsibility of all adults can be developed by taking learning outdoors during and outwith school hours.

Outdoor learning encompasses the entire range of learning experiences undertaken outside. Whether it is reading a book outside or participating in an overseas expedition, the curriculum design principles apply. Curriculum planners and managers should recognise the place of the full spectrum of outdoor learning experiences and should not interpret the promotion of the use of school grounds and local areas as an alternative to outdoor residential experiences but as part of a spectrum of learning opportunities. Each type of outdoor learning experience should complement the other and should form a progressive and coherent range of experiences for children and young people. Practitioners need to know how the experience benefits their learners. The quality of learning and teaching is of paramount importance regardless of the place in which it occurs.
The benefits of outdoor learning
There is now a substantial base of national and international evidence about the benefits of taking learning outdoors. The impact of outdoor learning on children and young people’s health and wellbeing, wider achievements, attainment and personal development is often recognised by practitioners.

There are some general benefits from taking learning outside within and across curriculum areas:

- connections are made experientially with the real world outside the classroom, helping to develop skills, knowledge and understanding in a meaningful context
- outdoor environments and surroundings act as a rich stimulus for creative thinking and learning. This affords opportunities for challenge, enquiry, critical thinking and reflection
- children and young people find that not everything outside matches the models or the textbooks. This does not mean that what they have found is ‘wrong’. Instead, it develops awareness of the complexities of the real world and can help to develop critical thinking skills
- children and young people are able to understand the relevance of a subject taught in school to everyday life
- children and young people can sometimes behave differently outdoors. Quiet pupils may speak more, others become calmer and more focused when outside, especially in a natural space
- the multi-sensory experience outdoors helps children and young people to retain knowledge more effectively. There are opportunities for pupils to learn with their whole bodies on a large scale
- learning in a less structured environment can provide a different learning experience from that of the classroom
- being outdoors can be a more relaxing learning experience for many learners

What the research says
Scotland’s own universities have made a significant contribution to the international research base around the subject of learning outdoors. There have been several studies of outdoor learning within Scottish education and these are a useful starting point for those practitioners with an interest in understanding the issues more fully.

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3 The University of Edinburgh’s Outdoor Education research pages offer a useful overview of much of the Scottish literature and research. http://www.education.ed.ac.uk/outdoored/resources.html
Below is a collection of snippets from the international research that illustrate the potential impact of taking learning outdoors and spending time outside. The challenge for practitioners is to identify positive action based on available research to ensure all children have regular, frequent, enjoyable and challenging opportunities to learn outdoors throughout their school career and beyond.

Practitioners may find using the snippets helpful when:

- considering the benefits of outdoor learning
- planning programmes of support for specific groups or individual children
- communicating with the wider school community to promote taking learning outdoors
- undertaking continuing professional development activities linking to outdoor learning

These snippets are a small selection from the research available. The impact of being outside is in many cases culturally and socially specific. For this reason it is important that practitioners who want to further develop their evidence-based practice read more widely. By accessing the links given in Appendix 1, a comprehensive overview can be gained through further reading, reflection and professional discussion. This in turn can translate into changing or enhancing a practitioner's understanding, confidence and motivation to take children outside to learn effectively.

Residential programmes have a positive impact on children

At-risk children who attended a week-long residential outdoor education programme increased their test scores compared with children who did not have this experience. There was a 27% increase in measured mastery of science concepts, enhanced co-operation and conflict resolution skills, gains in self-esteem, gains in positive environmental behaviour, and gains in problem solving, motivation to learn and classroom behaviour.

Field trips help young students to better articulate environmental problems

Complex environmental problems are challenging for pupils to understand. In addition to using pictures and diagrams, and examining a problem sequentially, using kinaesthetic and auditory learning approaches on field trips made a notable positive difference.

Improving school grounds helps children’s health and wellbeing

Children who experience school grounds with diverse natural settings are more physically active, more aware of nutrition, more civil to one another and more creative.

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Short-sightedness in children affected by time spent outside
Australian Government research\(^7\) suggests that myopia, or short-sightedness, in children appears to be positively affected by the amount of time spent outside. The vision of 6- and 7-year-olds of Chinese ethnicity in Singapore and Australia was compared. Ten per cent of the Australian children were short-sighted compared with 30% of the Singaporean children. All the children spent a similar amount of time reading, watching TV and playing computer games. However, the Australian children spent on average two hours a day outdoors, which was 90 minutes more than the Singaporean children.

Nature is a buffer of life stress
Nearby levels of nature moderate the impact of stressful life events on the psychological wellbeing of children. The life stress impact is lower among children with high levels of nearby nature than among those with little nearby nature.\(^8\)

Being outside affects children’s behaviour
A Swedish study\(^9\) was carried out at two day nurseries, one an outdoor ‘I Ur och Skur’ kindergarten and the other a traditional nursery in new, spacious premises. The research team studied children’s behaviour as a whole: how they played, how often they were outside, their play routines, and the development of motor function and powers of concentration during the course of a year.

‘When it comes to concentration capacity, the children within I Ur och Skur pre-schools are more than twice as focused as children within a normal pre-school. Their motor skills are better, they are less frustrated, restless and sick.’

Science scores improve through environmental stewardship
A large study\(^10\) from Louisiana compared students who received horticulture lessons and grew plants for a restoration project to a control group. Over the two-year project, the sciences scores in tests were higher in this programme than in the control group.

Tree density linked to asthma in young children\(^11\)
Lovasi et al (2008) examined the prevalence of asthma in 4-year-old and 5-year-old children, the density of trees growing in streets, pollution sources and census data. They concluded that street trees may help prevent early childhood asthma in urban areas but further research is needed.

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Children who experience and bond with nature develop pro-environmental behaviour\(^\text{12}\) Pro-environmental behaviour in children and adults was examined through a literature review. One key recommendation was that educators should make time for children to experience nature, individually and as a group, enabling them to develop bonds with nature.

Physical co-ordination is affected by landscape\(^\text{13}\) Two groups of pre-school children attending the same nursery were studied during a nine-month period. One group had daily access to natural landscape for at least two hours, the other group only occasional access. Significant differences were found in balance skills, co-ordination and agility. The researchers concluded, ‘Nature affords possibilities and challenges for the children to explore their own abilities. The children feel more comfortable being in the natural environment and their knowledge about nature increases.’

Environmental programmes help basic skills\(^\text{14}\) Children who are in environment-based instructional programmes score as well or better than control group children standardised measures in reading, maths, language and spelling. The environment-based programmes also foster co-operative learning and civic responsibility, using the natural characteristics of the school grounds and local community as the foundational framework for the curricula.

Natural settings help children focus and enhance cognitive abilities\(^\text{15}\) Proximity to, views of and daily exposure to natural settings increase children’s ability to focus and enhance cognitive abilities.

The impact of outdoor learning cannot be assumed – it depends on the activities undertaken and how they are facilitated\(^\text{16}\) The delivery of outdoor learning and the aims and focus of the experience make a big difference to what is learned. ‘Simply ‘being outdoors’ is not sufficient for young people to express an ethic of care for nature or develop an understanding of natural processes. These things seem to be learned when they are an explicit aim of experiential activities and when they are mediated in appropriate ways.’ (Key finding 14)

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14 Lieberman, G A and Hoody L L (2005), California Student Assessment Project Phase Two: The Effects of Environment-Based Education on Student Achievement, Poway, CA: State Education and Environment Roundtable.
Benefits of Forest Schools

A longitudinal evaluation of three Forest School programmes noted that for many children it takes many weeks or months for changes to occur. Thus long-term and regular contact with a woodland environment is needed. However, positive outcomes included greater self-confidence and self-belief and a better ability to work co-operatively with others. The children developed more sophisticated uses of spoken and written language. The children developed physical stamina and gross and fine motor skills. There was an increased respect for the environment and interest in natural surroundings. The practitioners gained a new perspective and understanding of the children. The children took their experience home and asked their parents to take them outdoors at the weekends or in the school holidays, helping to change parental attitudes and interest in Forest Schools.

‘The games children play outside tend to be less gender stereotyped than the ones played inside since the material children use to play with in the forest is not as associated with a specific gender.’

Eva Ånggård, Department of Didactic Science and Early Childhood Education, Stockholm University

Greater community involvement in schools that green their grounds

One of the major benefits of green school grounds is increased involvement by adults and members of the nearby community, from helping with gardens to enriching the lifescape of the school grounds.

The impact of time outside on ADD and ADHD

Results from a study of children with attention deficit disorder (ADD) indicate that children function better than usual after activities in green settings. The ‘greener’ a play area is, the less severe the ADD symptoms are.

Children with attention deficit hyperactivity Disorder (ADHD) demonstrated improved concentration when completing a task after a 20-minute walk in a city park. The difference was comparable to what is achieved with standard ADHD medication. ‘Doses of nature’ might serve as a safe, inexpensive, widely accessible new tool in the toolkit for managing ADHD symptoms.


18 Quote taken from www.friluftsframjandet.se/guest/360 Accessed 13.3.11.


Adult mentors have a positive lifelong impact on children and young people. Many people who choose to take action to benefit the environment have had an adult mentor as children. The adult mentors demonstrated care for the land as a limited resource essential for family identity and wellbeing, disapproval of destructive practice, a fascination with the details of other living things and elements of earth and sky, and simple pleasure in being in nature.

Children who free play in wild natural environments are more likely to have pro-environmental behaviours and attitudes as adults. When children become truly engaged with the natural world at a young age, the experience is likely to stay with them in a powerful way, shaping their subsequent environmental path. People who have had frequent childhood experiences in natural spaces are more likely to visit such places as adults.

‘Domesticated’ nature activities such as picking flowers or planting seeds, while having a significant positive effect, did not have as great an influence as that of ‘wild’ nature on environmental attitudes and had only a marginal effect on environmental behaviours.

Research about the health impact of the John Muir Award found that ‘1 in 10 participants had never visited a wild place before their award involvement’ and that ‘those living in the poorest circumstances were over 6 times more likely to have had no previous experience of wild places’.

Being ‘nature smart’ is a recognised intelligence. Howard Gardner designated ‘naturalist’ or ‘nature smart’ as the eighth intelligence. This includes abilities such as noticing subtle differences and details about objects, having the capacity to use multiple senses, being able to identify and distinguish one species from another, and being aware of how to distinguish the diversity of organisms in their ecological niche.

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22 Chawla, L (2006), Learning to Love the Natural World Enough to Protect It in Barn, 2, 57–58. Norsk senter for barnespnings. Norsk senter for barnespnings. Barn is a quarterly published by the Norwegian Centre for Child Research at the Norwegian University of Science and Technology, Trondheim, Norway.
25 Mitchell, D and Shaw, R (2009), Health Impacts of the John Muir Award, Glasgow: Glasgow University’s Public Health and Health Policy Unit. www.gcph.co.uk/assets/0000/0445/JMA_Health_Impacts_Final_report.pdf Accessed 14.3.11.