



Outdoor Education – Research Summary

Research on outdoor education is synthesized below. Links to specific research papers and summaries are provided at the bottom.

School performance increases when children learn outdoors¹

A number of studies have documented increased school performance through outdoor education. Research has documented increased standardized test scores, enhanced attitude about school, improved in-school behavior, improved attendance and overall enhanced student achievement when students learn in and about nature. In addition, outdoor education effectively employs a greater range of children's intelligences. Many researchers attribute the increase in performance to increased relevance and hands-on experience of learning outdoors.

Learning outdoors is healthy²

Learning outdoors is active and increases students' physical, mental and social health. Some studies have even shown follow-up (e.g., non-school) physical activity increases with outdoor learning. Access to nature has also been shown to decrease the symptoms of ADHD. Outdoor learning and access to nature also decrease stress levels of students and teachers.

Learning outdoors supports child development³

Children greatly benefit developmentally from being outdoors. Outdoor education and play support emotional, behavioral and intellectual development. Studies have shown that students who learn outdoors develop: a sense of self, independence, confidence, creativity, decision-making and problem-solving skills, empathy towards others, motor skills, self-discipline and initiative.

Teaching and learning outdoors is fun⁴

Often, the outdoors provides a change of pace from the classroom, which students and teachers enjoy. Studies have shown increased student enthusiasm for learning outdoors.

Learning outdoors helps develop a sense of place and civic attitudes and behaviors⁵

Outdoor experiences help students increase their understanding of their natural and human communities which leads to a sense of place. Through connection to place, students develop stronger environmental attitudes and civic behaviors. Outdoor learning experiences are the foundation of raising the next generation of active citizens who take care of their natural and human communities.

Outdoor education engages families and the community⁶

Outdoor learning connects families and the community to the school. Outdoor classrooms provide natural entry points for families and community members to get involved with student learning. The relationships developed through outdoor learning lead to greater parental and community involvement in and support for the school.

Research Articles and Summaries

Summaries of outdoor education research

Charles, C. (2010). Children's contact with the outdoors and nature: A focus on educators and educational settings. Children & Nature Network.
This extensive report summarizes outdoor education and nature experience research related to schools and educational settings. It's available at:
<http://www.childrenandnature.org/downloads/Educationsynthesis.pdf>

Coyle, K.J. (2010). Back to school: Back outside! National Wildlife Federation.
This report summarizes the benefits of outdoor education and provides action ideas, policy recommendations, and additional resources. It's available at:
<http://www.nwf.org/~media/PDFs/Be%20Out%20There/Back%20to%20School%20full%20report.ashx>

¹School performance research

American Institutes for Research. (2005). Effects of outdoor education programs for children in California. Palo Alto, CA.
Available on the Sierra Club web site.
http://www.sierraclub.org/youth/california/outdoorschool_finalreport.pdf

Blair, D. (2009). The child in the garden: an evaluative review of the benefits of school gardening. *Journal of Environmental Education*, 40(2), 15-38.
This study may be available in a library near you or can be purchased online through the publisher at: <http://www.heldref.org/pubs/jee/about.html>

Dyment, J. (2005). Gaining ground: The power and potential of school ground greening in the Toronto District School Board. Evergreen.
This report was commissioned by Evergreen, a charitable organization focused on bringing communities and nature together and is available online at:
http://www.evergreen.ca/en/lq/gaining_ground.pdf

Lieberman, G. A. & Hoody, L.L. (1998). Closing the achievement gap: Using the environment as an integrating context for learning. SEER: Poway, CA, 1998.

State Environmental Education Roundtable. (2000). California student assessment project. Poway, CA.
The third and most recent of the SEER studies we are featuring is described below. Available on the Web site of the State Education and Environment Roundtable (SEER) at www.seer.org

²Health research

Bell, A. C., & Dyment, J.E. (2006). Grounds for action: Promoting physical activity through school ground greening in Canada. Evergreen.
This report is available at: <http://www.evergreen.ca/en/lq/pdf/PHACreport.pdf>

BTCV. (2009). Evaluation findings: Health and social outcomes 2009. BTCV.
This report is available online at:
http://www2.btcv.org.uk/display/greengym_research

Dyment, J. E., & Bell, A. C. (2008). Grounds for movement: Green school grounds as sites for promoting physical activity. *Health Education Research*, 23(6), 952-962.
This study may be available in a library near you or can be purchased online through the publisher at: <http://her.oxfordjournals.org/>

Kuo, F.E. & Faber Taylor, A. (2004). A potential natural treatment for attention-deficit/hyperactivity disorder: Evidence from a national study. *American Journal of Public Health*, 94(9).
The study and the educational Power Point are available on the web site of the University of Illinois Urbana-Champaign. <http://www.lhhl.uiuc.edu/>

Muñoz, S. A. (2009). Children in the outdoors: A literature review. Sustainable Development Research Centre.
This report is available online at: <http://www.countrysiderecreation.org.uk/Children%20Outdoors.pdf>

Wells, N.M., & Evans, G.W. Nearby nature: A buffer of life stress among rural children. *Environment and Behavior*, 35(3), 311-330.
This study is not available online without purchase <http://www.sagepub.co.uk/journals/details/j0163.html>

3Child development research

Chawla, L. (2006). Learning to love the natural world enough to protect it. *Barn*, 2, 57-58.
Barn is a quarterly published by the Norwegian Centre for Child Research at the Norwegian University of Science and Technology, Trondheim, Norway. This article is available at http://www.cnaturenet.org/02_rsrch_studies/PDFs/Chawla_LearningtoLove.pdf

Kellert, S.R. (2005). Nature and childhood development." In *Building for Life: Designing and Understanding the Human-Nature Connection*. Washington, D.C.: Island Press.
Full book available via Amazon.com and other commercial sources. http://www.cnaturenet.org/02_rsrch_studies/PDFs/Kellert_BuildingforLife.pdf

Lester, S., & Maudsley, M. (2006). Play, naturally: A review of children's natural play. Children's Play Council.
This report is available online at: <http://www.playday.org.uk/PDF/play-naturally-a-review-of-childrens-natural%20play.pdf>

4Enjoyment research

Blair, D. (2009). The child in the garden: an evaluative review of the benefits of school gardening. *Journal of Environmental Education*, 40(2), 15-38.
This study may be available in a library near you or can be purchased online through the publisher at: <http://www.heldref.org/pubs/jee/about.html>

Dyment, J. (2005). Gaining ground: The power and potential of school ground greening in the Toronto District School Board. Evergreen.

This report was commissioned by Evergreen, a charitable organization focused on bringing communities and nature together and is available online at:

http://www.evergreen.ca/en/lg/gaining_ground.pdf

⁵Sense of place and civic engagement research

American Planning Association. (2003). How cities use parks to . . . help children learn. Chicago, IL.

The report which provides a summary of relevant research is available at:

http://web.fpa.org/pdfs/advocacy/APA%20Papers/HelpChildrenLearn_06.pdf

Chawla, L. (2006). Learning to love the natural world enough to protect it. *Barn*, 2, 57-58. *Barn is a quarterly published by the Norwegian Centre for Child Research at the Norwegian University of Science and Technology, Trondheim, Norway. This article is available at*

http://www.cnaturenet.org/02_rsrch_studies/PDFs/Chawla_LearningtoLove.pdf

Wells, N. M., & Lekies, K. S. (2006). Nature and the life course: Pathways from childhood nature experiences to adult environmentalism." *Children, Youth and Environments*, 16(1).

This study is available online at:

http://www.colorado.edu/journals/cye/16_1/16_1_01_NatureAndLifeCourse.pdf

⁶Community involvement research

Bell, A. C., & Dyment, J.E. (2006). Grounds for action: Promoting physical activity through school ground greening in Canada. Evergreen.

This report is available at: <http://www.evergreen.ca/en/lg/pdf/PHACreport.pdf>

Peacock, A. (2006). Changing minds: The lasting impact of school trips. The Innovation Centre, University of Exeter.

This report is available at: http://www.nationaltrust.org.uk/main/w-schools-guardianships-changing_minds.pdf