



## Tools & Resources for Educators

*From the Children & Nature Network*

NTN eGuide



## 10 x 10: Tools for Teaching



## Are you a Natural Teacher?

Put more Vitamin "N" into your classroom.

We all care about the well-being of our students and want to provide a positive environment in which students are healthy and motivated and learning content in creative ways. Every educational setting, whether urban or rural, has such a place ... outdoors.



### Inside

#### [10 Reasons to Take Your Students Outside](#)

With links to the original research and studies to back up each statement.

#### [10 Innovative Nature-Centric Projects & Programs for Your Students](#)

A few of our favorites to help inspire and guide your next outdoor learning adventure.

*If the question is about providing children with access to nature, schools have an answer. Even short, unstructured time in a schoolyard habitat with the sounds, textures, smells, space, and sensations shows value. Children awaken to the world, expand to their own possibilities and their sensory channels, alive with curiosity and calm.*



*What a gift that schools can provide for an area of childhood that is vanishing at an alarming rate and at the same time, allow for children to feel the sense of wonder and joy in becoming familiar with the natural world.*

Kelly Keena,  
K-8 Science Teacher  
Denver, CO

Visit the [New Nature Movement](#) blog to read the rest of Kelly's eloquent post and many more by and for teachers and educators.

# 10 Reasons To Take Your Students Outside

With links to the original research and studies to back up each statement

## 1. Nature is everywhere!

Every school, home and daycare has some kind of outdoor space nearby where teachers can take students for school work or play.

Raffon, J. (2000). *Nature Nurtures: Investigating the Potential of School Grounds*. Evergreen: Toronto, Canada.

## 2. School grounds and nearby nature provide a low- to no-cost setting for effective teaching.

Field trips do not have to involve buses! A ten-minute walk in the community can be a prompt for writing or art activities, and schoolyard gardens can be used to teach math and science skills.

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.

## 3. Nature enhances academic achievement.

Studies show that students learn more when they participate in authentic, inquiry-based lessons in the natural environment.

State Education and Environment Roundtable (2005). *California Student Assessment Project Phase Two: The Effects of Environment-Based Education on Student Achievement*. SEER: Poway, CA.

## 4. Nature-based activities improve student behavior.

Students who are engaged in authentic learning misbehave less than others. Also, recess in the outdoors gets the “wiggles” out of their systems!

Barros, R. M., Silver, E. J., & Stein, R. E. K. (2009). School recess and group classroom behavior. *Pediatrics*, 123(2), 431-436.

## 5. Students are motivated to learn when content is connected to nature.

When learning takes place in their own environment, students want to find out more, read and research, and truly understand the material.

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

## 6. Outdoor learning promotes communication.

Students who participate in outdoor project-based or issue-based activities learn to communicate with their peers and community volunteers.

American Institutes for Research. (2005). *Effects of Outdoor Education Programs for Children in California*. American Institutes for Research: Palo Alto, CA.

## 7. Students improve cooperation skills when they spend time outside.

They hone their skills as they work out issues on the playground or try to solve problems related to natural learning.

Burdette, Hillary L., M.D., M.S.; and Robert C. Whitaker, M.D, M.P.H. Resurrecting Free Play in Young Children: Looking Beyond Fitness and Fatness to Attention, Affiliation and Affect. © 2005 American Medical Association.

## 8. Nature helps students focus, including ADHD students.

Students are more engaged in learning because nature is real and relevant for them.

Faber Taylor, A., & Kuo, F. E. (2008). Children with attention deficits concentrate better after walk in the park. *Journal of Attention Disorders Online*.

## 9. Students are healthier and happier when they spend time outside.

Students get more exercise when they are outside, whether for recess, P.E., or even for student learning.

McCurdy, L. E., Winterbottom, K. E., Mehta, S. S., & Roberts, J. R. (2010). Using nature and outdoor activity to improve children's health. *Current Problems in Pediatric and Adolescent Health Care*, 40(5), 102-117.

## 10. School grounds and nearby nature provide a wonderful setting for curricular integration.

Teachers can connect and integrate content in all subjects with themes or issues in the natural world.

Lieberman, G. A.; and Hoody, L. (1998). Closing the Achievement Gap: Using the Environment as an Integrating Context for Learning. SEER: Poway, CA. and Lieberman, G. A.; and Hoody, L. (2000). California Student Assessment Project. SEER: Poway, CA.

# 10 Innovative Nature-Centric Projects & Programs for Your Students

## 1. Move Your Classroom Outdoors

Under the leadership of teacher Catherine Padgett, Ford Elementary School has developed an incredible outdoor learning program and site.

[\[+\] learn more](#)

## 2. Take Your Kindergarten Into the Woods

The kindergarteners from Sangster Elementary School abandon their classroom each morning, rain or shine, for a hike into the woods where sticks and stones replace pencil and paper.

[\[+\] learn more](#)

## 3. Teach the ABCs of Gardening - Literally

Clinton Street Public School's ABC Learning Garden consists of 26 plants, one for each letter of the alphabet. Students get an education on a wide variety of plant life, from aster to zebragrass, and a chance to reconnect with nature.

[\[+\] learn more](#)

## 4. Turn Your "Ugly Schoolyard" into a Learning Garden

The "Ugliest School Yard Contest" in Detroit addresses the public space challenges and builds young people's confidence in their ability to make other changes in their environment.

[\[+\] learn more](#)

## 5. Help Your At-Risk High School Students Graduate with a Healthy Blend of Nature, Community and Play

The REAL Academy (Redwood Environmental Academy of Leadership) is a school within a school that offers its own special curriculum focused on service and the environment.

[\[+\] learn more](#)

## 6. Grow the Skills Needed to Succeed in Elementary School

Larry Volpe's students go outside to learn and discover a new motivation to cooperate and be responsible.

[\[+\] learn more](#)

## 7. Show Your Administration What an Integrated Learning Program Looks Like

Donnan Stoicovy, Principal of Park Forest Elementary in State College, PA, runs an excellent program that spans all grade levels and is viewed as a continuous process.

[\[+\] contact for more information](#)

## 8. Create an Outdoor Learning Space

Forest View Elementary in Durham, NC, uses a wide variety of Outdoor Learning Spaces (OLS) across all grade levels. These spaces include a bird blind, nature trail and wetlands.

[\[+\] learn more](#)

## 9. Turn Your School into a Garden School Inspired by Granny

Granny's Garden School, Loveland, OH, is considered by many to be the largest and most comprehensive school gardening program in the Midwest. And, yes--there is a Granny, Roberta Paolo, founder and driving force behind this tremendous initiative.

[\[+\] learn more](#)

## 10. Plant a Global Garden, Grow a Science Curriculum

This Tulsa, OK-based nonprofit is dedicated to empowering students and communities through hands-on science education. Global Gardens help students learn about science, health and the environment while challenging them to become caring, forward thinking and confident individuals.

[\[+\] learn more](#)



Additional Tools & Resources  
From the Children & Nature Network

Natural Teachers Network showcases innovative outdoor learning projects and programs. Please add to the discussion on C&NN Connect. Let us know what you're doing to transform education by connecting children with nature.

<http://childrenandnature.ning.com/group/naturalteachers>

Children & Nature Network is leading a movement to connect all children, their families and communities to nature through innovative ideas, evidence-based resources and tools, broad-based collaboration and support of grassroots leadership.

Our vision is a world in which all children play, learn and grow with nature in their everyday lives.

For additional information, visit us at:  
[www.childrenandnature.org](http://www.childrenandnature.org)



## Acknowledgements

*NTN eGuide Authors, Herb Broda and Tamra Willis, are leaders in the Children & Nature Network's Natural Teachers Initiative and editors of the Natural Teachers Network newsletter.*

*Herb Broda is a professor of education at Ashland University in Ohio. He is the author of "Schoolyard-Enhanced Learning: Using the Outdoors as an Instructional Tool" and "Moving the Classroom Outdoors: Schoolyard-Enhanced Learning in Action."*

*Tamra Willis is an associate professor in the Graduate Teacher Education Program at Mary Baldwin College (MBC) in Staunton, Virginia. She directs the Master of Education in Environment-Based Learning (EBL) program, designed for K-12 teachers and outdoor educators who use the natural environment to teach all subjects.*

### Photo Credits

*Page One: Madeline Hart*

*Page Two: Jon Beard*

## NTN Check List

- 1 [Join C&NN Connect.](#)  
Share, Learn, Listen, Lead.
- 2 Take the Let's G.O.! Pledge  
[Let's G.O.! \(Get Outside\)](#)
- 3 **Spread the Word.**  
Support and inform your community.

## Natural Teachers Network

Web Resources to help teachers use the natural world as a classroom

We hope that you find the following list to be a useful reference. This initial list is not comprehensive and will be augmented as new and relevant resources are discovered. Please send us your suggestions for additions by writing to [info@childrenandnature.org](mailto:info@childrenandnature.org). We will not be able to include every suggestion, but we will review every recommendation. We are especially interested in resources offered by credible organizations with a capacity to respond to inquiries. We also encourage you to post suggestions for resources on C&NN Connect at [www.childrenandnature.NING.com](http://www.childrenandnature.NING.com). Thanks for your commitment to reconnecting children with nature!

### ORGANIZATION AFFILIATION KEY:

- Nature-Related Information, Guides, and Activities
- Schools, Colleges and Universities, and other Educational Organizations with Nature-Based Learning
- After-School Organizations that Partner with Schools for Continuing Nature-Based

Organization/Affiliation	Description
<a href="#">Arbor Day Foundation</a>	This Nature Explore site has information on designing natural outdoor spaces, training for educators, and ways to get children involved with nature. There are several publications available for purchase that encourages nature play. <a href="http://www.natureexplore.org">www.natureexplore.org</a>
<a href="#">National Institute for Play</a>	A website with information about the value of play and instructional resources for conducting and encouraging play. <a href="http://www.nifplay.org/">http://www.nifplay.org/</a>
<a href="#">Environmental Education in Kentucky</a>	A website to find environmental education opportunities in the state. This website allows you to locate organizations and events across the Commonwealth. <a href="http://eeinkentucky.org">http://eeinkentucky.org</a>
<a href="#">Let's Go Outside</a>	Information for educators on the benefits of connecting with nature, with an interactive database to find natural areas in your region. <a href="http://www.fws.gov/letsgooutside/">http://www.fws.gov/letsgooutside/</a>



<b>National Park Service</b>	A list of resources for families to get outside. All resources have links to more information. <a href="http://www.nps.gov/kidszone/park_fun.html">http://www.nps.gov/kidszone/park_fun.html</a>
<b>National Wildlife Federation</b>	Includes nature activities, blog, and information about the importance of getting kids outside in nature. <a href="http://www.greenhour.org/">http://www.greenhour.org/</a>
<b>Nature Circles-Hooked on Nature</b>	Provides a how-to guide to start a nature circle. Its goal is to introduce children to nature with simple activities in a safe, group setting. <a href="http://www.naturecircles.org/">http://www.naturecircles.org/</a>
<b>Children and Nature Network</b>	This is the one-stop shop for anyone interested in learning about the movement to reconnect children with nature. See the most current research on why children need unstructured time in nature, as well as a list with links to initiatives across the country. Tips, inspiration, and resources for joining with other teachers to take students outside to learn. <a href="http://www.childrenandnature.org/initiatives/families/">http://www.childrenandnature.org/initiatives/families/</a>
<b>Richard Louv</b>	Here are helpful resources for parents, teachers, and community leaders to encourage children's enjoyment of the great outdoors. Included are nature activities, suggested books, and useful links. <a href="http://richardlouv.com">http://richardlouv.com</a>
<b>Suite 101.com</b>	An article that outlines some nature activities appropriate for children living in urban environments. <a href="http://familytravel.suite101.com/article.cfm/nature_games_f_or_urban_children">http://familytravel.suite101.com/article.cfm/nature_games_f_or_urban_children</a>
<b>Dunwoody Nature Center</b>	This is a nature center-led nature club for homeschoolers. Meeting schedule and themes are listed on site. <a href="http://www.dunwoodynature.org/do/homeschool.html">http://www.dunwoodynature.org/do/homeschool.html</a>
<b>Active Kids Club-Canada</b>	Active Kids Club has information about the benefits from being outside. They also provide tips for playing outside in all seasons, and for how to create an outdoor playgroup. <a href="http://www.activekidsclub.com/index.html">http://www.activekidsclub.com/index.html</a>

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## New Hampshire Fish and Game Department

Provides information on New Hampshire's Take a Child Outside week, and describes several hands-on nature-based activities to connect children and families with nature. Links to studies, too.

<http://www.wildlife.state.nh.us/ChildrenInNature/index.htm>

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## Recreational Equipment, Inc.

REI is known for outdoor gear and apparel for all ages. They also offer adventure packages and are committed to enabling people to have positive experiences in the outdoors. They also sponsor in-store workshops that promote outdoor recreation. A list of local family hikes is easily downloaded from their Web site.

[www.rei.com](http://www.rei.com)

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## Dawn Publications

Dawn Publications' mission is to assist parents and educators to open the minds and hearts of children to the transforming influence of nature. They have a wonderful selection of books available for purchase on their Web site.

[www.dawnpublications.com](http://www.dawnpublications.com)

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## Project Learning Tree

Project Learning Tree has developed an Activity Guide for educators to use in the outdoors.

<http://www.learnoutside.org/home.html>

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## Project WILD

One of the most widely used environmental education programs used by educators. New early learning publication called Growing Up Wild now available.

<http://www.projectwild.org/>

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## DIY Preschool

This blog suggests 13 simple activities/experiences to do with young children.

<http://diypreschool.blogspot.com/2007/02/13-great-nature-activities-for-very.html>

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## NAAEE

Education-based organization with many hands-on nature-related early childhood activities to spark the creative imagination.

<http://www.naace.org>

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## National Environmental Education Foundation

Through a variety of programs for teachers in all disciplines, one of NEEF's core focus areas is environmental literacy for children.

<http://www.neefusa.org/about/index.htm>

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U.S. Play Coalition	Resources and research on the value of play. <a href="http://usplaycoalition.clemson.edu/">http://usplaycoalition.clemson.edu/</a>
Waldorf School of Saratoga	A nature-based private pre-school through high school system located throughout the U.S. New outdoor education program in Saratoga called Nature Kindergarten. <a href="http://www.waldorfsaratoga.org">www.waldorfsaratoga.org</a>
Audubon Society	Education and conservation organization with many programs, and a special focus on urban nature places. <a href="http://www.audubon.org/">http://www.audubon.org/</a>
High School for Environmental Studies	New York City public high school with a 97% graduation rate focused on environmental curriculum and a summer intern partnership with The Nature Conservancy. <a href="http://envirostudies.org/">http://envirostudies.org/</a>
LNCI Greater Cincinnati	Very successful after-school program in close collaboration with public schools. There is a tremendous amount of information on the movement to reconnect children and families with nature. <a href="http://www.lncigc.org/guide/tips.shtml">http://www.lncigc.org/guide/tips.shtml</a>
Wilderness Awareness School	This group provides training for parents, teachers, and mentors. They also have a book to purchase called “Coyote’s Guide to Connecting with Nature.” <a href="http://www.wildernessawareness.org/coyotesguide.html?clid=CKGK84XgspcCFQquGgodh32ljg">http://www.wildernessawareness.org/coyotesguide.html?clid=CKGK84XgspcCFQquGgodh32ljg</a>
National Afterschool Association	Large and diverse group of after-school professionals dedicated to the development, care and education of children and youth during their out of school hours. <a href="http://naaweb.site-ym.com/">http://naaweb.site-ym.com/</a>
4-H National Council	National youth development organization affiliated with land grant universities in every state. <a href="http://4-h.org/4hstory.html">http://4-h.org/4hstory.html</a>



# CERTIFICATE OF PARTICIPATION

in the Natural Teachers Network™  
an initiative of the Children & Nature Network

This is to certify that

**YOUR NAME HERE**

is a member of the Natural Teachers Network™,

educators and administrators who value and use the natural world as a place for learning,  
and who aspire to or insist on taking their students outside to learn, honoring the following pledge:

- I will **Take** my students outdoors to experience nature directly
- I will **Share** my ideas, successes and challenges
- I will **Encourage** teachers & administrators to join the movement to connect children to nature



A handwritten signature in black ink, appearing to read "Richard Louv".

Richard Louv, Chairman  
Children & Nature Network

Children's classroom behavior  
is better if they have recess

A handwritten signature in blue ink, appearing to read "Sarah Milligan-Toffler".

Sarah Milligan-Toffler, Executive Director  
Children & Nature Network

School gardens positively impact  
children's learning and behavior

Natural views from high school positively impact  
students' academic achievement and behavior