

**TIME OUT:**

# Using the Outdoors to Enhance Classroom Performance

*A School Readiness Guide for  
Teachers and Parents*



*From the Publishers of*  
**Ranger Rick Magazine**

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# America's "Indoor" Children

A new problem is affecting American children and their overall school performance — and it is likely to worsen in the coming years before it gets better. **Specifically, an American's childhood has largely moved indoors in the past 15 years.** The average child sits more than six hours a day inside looking at an electronic screen and snacking. As a result, the healthy and decompressing outdoor play experience many adults had as children is becoming a thing of the past.

Technology will continue to play an important role in children's educational and social lives. But the amount of time kids spend "plugged in" is seriously out of balance. This shift has deep implications for our children's capacity to function well in society, starting with their core readiness to learn in the classroom. Today's indoor children are distracted, less fit and have less stamina. They are often more aggressive and hard to manage in the classroom, as well as less able to relate to each other and to adults on a personal level.

Why should educators who are concerned with promoting higher test scores and improved student performance be concerned about the indoor child phenomenon?

Offering sufficient outdoor time improves the overall health of our children while lengthening attention spans, diminishing aggressiveness, improving test scores and ultimately advancing learning. This guide addresses this concern.

School administrations and educators have a critical role to play in reversing the negative impacts of the increasingly indoor childhood and helping children to experience, understand, and appreciate nature and the outdoors.

**A Kaiser Family Foundation study found that the average American child spends 44 hours per week staring at some kind of electronic screen.**



**Children with well-developed skills in communication, negotiation and compromise will be more effective in school and better prepared for careers and the work place.**

## Lack of Outdoor Time Affects Learning Readiness

Increased amounts of indoor activities, like watching TV and playing video games, will continue to have significant negative effects on children and their ability to be successful. This behavior means our children are less physically active and healthy, less personally creative, stressed, over-stimulated, and more isolated from necessary human interaction. The increasingly indoor lifestyle causes several factors that work against high performance in the classroom.

## Shorter Attention Spans

Watching a child play video games or view television is enlightening. Children tune out the world around them and quickly inhabit a virtual world with images and sounds coming at them in rapid succession. This intense stimulation can often cause them to be agitated and impatient, displaying attitudes you would not necessarily expect. This high level of visual stimulation, for example, affects their vision, nerves, blood pressure, and, studies indicate, their long term expectations and sense of patience and concentration.

It would be overly simplistic to say that too much electronic media is the cause of attention deficit problems in children. There are clinical definitions of this condition that demonstrate its complexity and its mystery. There is no single reason why childhood Attention Deficit Hyperactivity Disorder (ADHD) conditions are on the rise. Some say it is just improved diagnostic capability, others say it is due to chemicals in the environment and food, and still others say it is due to over-stimulation by electronic media from the early years.

The rise in the number of children with Attention Deficit Disorder (ADD)/ADHD and the increase in the use of medications to treat these children suggest that the problem is partially caused by something in the everyday life of children. It is becoming much clearer thought that too much indoor screen time contributes to shorter attention spans and less patience in children and ultimately less readiness to settle down and concentrate in the classroom.

## Increased Aggressive Behavior

It is no secret that children who “act out” in school can be a distraction to students trying to learn. The American Academy of Pediatrics, American Psychological Association, and American Medical Association all point to the prevailing science showing a causal relationship between television violence and child aggressiveness.

On the contrary, spending significant time in nature, and engaged in unstructured outdoor play has a soothing or calming effect on children. In addition to the overall appeasing aspects of natural settings, environments requiring children to create their own games will also foster communication and cooperation in children. In unstructured play, they learn to talk to one another and establish common rules.





**The American Academy of Pediatrics says American children are over-scheduled and often overextended, particularly as they get older.**

## Higher Stress and Depression

When children *do* leave the home, they usually have a schedule to keep. Many have lessons and sessions in art, dance, scouting, organized sports, and more. As students get older, these organized activities increase, which decreases the amount of relaxed, unstructured play with other children.

Striving to stay on schedule makes parents feel the stress too, a snowball effect which can make the situation even worse for the children. Adults often discuss how much of their own time is spent shuttling kids from activity to activity. It can be costly, time consuming, and logistically difficult. Despite all the obvious challenges, however, parents may feel pressure to make sure their child is not missing out on opportunities that might be available to others. Planning for relaxed and unstructured play with other children can sometimes be considered a waste of time.

**The American Academy of Pediatrics (AAP) recommends kids relax and get about an hour per day of unstructured time to kick back and unwind.**

AAP's 2007 report, "The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds," points out that play protects children's emotional development whereas a loss of free time in combination with a hurried lifestyle can be a source of stress, anxiety, and may even contribute to depression for many children.<sup>1</sup>



## Developmental Gaps: Isolation

A child who spends the majority of his or her time watching television or playing video games can become isolated and withdrawn.

According to the National Association for the Education of Young Children, free play teaches young people to share, cooperate, and resolve problems. Researchers found that kids who meet with other children, play together, and organize games experience a very constructive way to avoid social isolation.<sup>2</sup>

The process of inventing games, setting rules, and selecting teammates all help with social development and language skills. Unstructured play, including classic outdoor play, nourishes every aspect a child's mental and physical health and is essential for optimal development.

**Fifty-nine percent of African American teenage girls are Vitamin D deficient, according to federal analysis.**

## Nutrition and Physical Activity Implications

### Poor Fitness and Increased Obesity

Watching television consumes about the same number of calories as sleeping. The Centers for Disease Control (CDC) now warns that childhood obesity has reached epidemic proportions in the U.S.

The prevalence of obesity among children aged 6 to 11 more than doubled in the past 20 years, to 17 percent of children in this age group. The rate of clinically obese adolescents (aged 12-19) more than tripled, to 17.6 percent.<sup>3</sup>

Part of the obesity epidemic is due to poor eating habits, though the CDC also emphasizes that today's children are more sedentary than ever before. The CDC concludes that a major missing ingredient is an hour per day of moderate physical activity. In fact, even children who participate in organized sports are gaining weight.

The primary recommendation focuses on children spending more time playing and running around, which includes outdoor play. Regular time in nature is a critical tool that can be used to prevent obesity and encourage physical activity, at no cost.

### Sunlight and Vitamin D Deficiencies

According to the first national assessment of Vitamin D in young Americans, millions of U.S. children have low levels of this crucial nutrient, setting them up for increased risk of bone problems, heart disease, diabetes, and other health issues.

According to an analysis of federal data representing more than 6,000 children, low Vitamin D levels are particularly common among girls, adolescents, and people with darker skin.

Low levels of this nutrient are blamed on a combination of factors, including a decreased amount of time going outside and getting healthy doses of sunlight.<sup>4</sup>

### Eyesight

Duke University's Medical Center reported in the *Journal of the American Academy of Optometry* finds that incidences of near-sightedness are increasing nationwide due to lack of outdoor time. The study said that a child's chances of becoming nearsighted, if he or she has two nearsighted parents, are about 6 in 10 for children who spend 0-5 hours outside a week, but the risk drops to 2 in 10 when outdoor time exceeds 14 hours a week. Children with better eyesight have an improved quality experience in the classroom.<sup>5</sup>



**43% of kids  
want their  
parents to  
spend more  
time  
outdoors with  
them.**

**Boys & Girls  
Club Survey**

## Outdoor Education Improves Classroom and Behavioral Outcomes

Since the late 1990s, significant academic evidence demonstrates that nature study and outdoor education programs significantly students' overall school performance — a term that includes not just test scores but attitude and behavior as well.

### Cooperation and Conflict Resolution

The American Institutes of Research for the California Department of Education looked at the effects of outdoor camp-like education programs on 255 at-risk, 6<sup>th</sup> grade students in a 2005 study.<sup>6</sup>

Through the program, participating students made significant progress in cooperation and conflict resolution. Similarly, the study found positive gains in self-esteem, relationships with peers, attentiveness and willingness to learn.

Important academic benefits included:

- 27-percent improvement and maintenance of science scores
- Significant benefits to English Learner (EL) students.

While the residential, week-long design of this program indicated a positive effect on the students, programs with less of an experiential immersion have also improved student performance as well.

### The Environment as an Integrating Context for Learning (EIC Model™)

In 1998, the State Education and Environment Roundtable (SEER) published a seminal study on the contribution that environmental education makes to student achievement. "Closing The Achievement Gap: Using the Environment as an Integrating Context for Learning" covered 40 schools across 12 states.

The study found that integrated environmental education programs throughout the curricula (science, language arts, arts, and social studies) combined with hands-on learning elements like nature study areas, team teaching, and broad school administration support, created top-performing students.<sup>7</sup>

A comprehensive follow-up study conducted in 2000 found that EIC classes performed better in 154 of 201 measures as follows:

Language Arts:	86 of 108
Math:	22 of 34
Science	10 of 15
Social Studies:	10 of 13
Discipline	4 of 4
Attendance	22 of 27

SEER has continued to study the use of the environment as an approach to learning, showing that integrating environmental studies into other disciplines and teaching strategies can help solve many of our current problems in education.



**“Environmental Education can help a struggling student become a competent student, and a competent student grow into a star.”**

**Kevin Coyle,  
NWF  
Vice President for  
Education and  
Training**

## Higher Statewide Test Scores

A 2003 study entitled “Environmental Education: Improving Student Achievement” compared 77 pairs of demographically equivalent schools. Half of the schools had implemented environmental education (EE) programs for three years or more and the other half did not have programs.

The study examined standardized test performance in those schools, including the Washington Assessment of Student Learning, and Iowa Test of Basic Skills. **Schools with EE programs showed higher scores on standardized tests in math, reading, writing, and listening.** The pattern of improved test scores for students who had been through environmental education programs persisted for the five years of data investigated (1997-2002).<sup>8</sup>

## Case Studies Verify Improved Performance

The National Environmental Education Foundation (NEEF) published a 2000 report containing case studies of schools with environment-based programs (five individual schools, a model school program involving five schools, and a statewide program). The report compared the test scores (on statewide standardized tests) of students from environment-based programs with those of students in various statewide or district-wide comparison groups.<sup>9</sup>

The report identified other examples of results:

- All 3rd graders at Hawley Environmental Elementary School in Milwaukee, WI passed the Wisconsin Reading Comprehension Test, as compared with only 25 percent of the total Milwaukee public school population.
- Isaac Dickson Elementary School’s 4<sup>th</sup> grade students in Asheville, NC achieved a 31 percent increase in math achievement in one year.
- Scores on college admission ACT tests were higher for students from the School for Environmental Studies in Apple Valley, MN, than their peers in the district, the state, and the nation.
- First graders in the EIC classroom at Kruse Elementary in Pasadena, TX, performed higher on the Iowa Test of Basic Skills in all categories.
- Since incorporating environmental issues into the curriculum, Tompkinsville Elementary and other Kentucky schools have increased their achievement in science, reading, and social studies on statewide tests.
- All five schools in Florida’s Model Schools in EE program showed steady increases over five years on FLORIDA WRITES! and FCAT assessment programs.



Health  
scientists  
found that  
contact with  
nature  
reduces  
symptoms of  
ADHD and  
improves  
critical  
thinking.

## Thinking And Willingness Improves

The “Environmental Education: Improving Student Achievement” study and other reports have also found that students performed better on statewide tests even when the subject matter of the environmental education programming was different from what was actually on the test. One reason may be related to student motivation and willingness to learn.<sup>10</sup>

## Environmental Education Creates More Motivated and Competent Students

In a 2004 study about the effects of environment-based education on students' critical thinking skills, test results of 400 students (grades 9, 12) in 11 Florida high schools were examined to measure their responses to Environment as an Integrating Context for Learning (EIC Model) programs.<sup>11</sup>

Through an evaluation of performance on norm-reference tests (Achievement Motivation Inventory, Cornell Critical Thinking Test, and California Measure of Mental Motivation) and interviews with selected students, EIC programs were found to significantly raise scores on all three tests.

Researchers at University of Illinois report findings that indicate **exposure to natural settings** in the course of common after-school and weekend activities **may be “widely effective” in reducing attention deficit symptoms in children.**

The authors surveyed the parents of 322 boys and 84 girls who had been diagnosed with ADHD. These parents reported on how their children performed after participating in a wide range of activities. Some of the activities were conducted indoors while others were conducted in outdoor spaces without much greenery, such as parking lots and downtown areas. Some activities took place in relatively natural outdoor settings such as a tree-lined street, backyard, or park.

Findings: “In each of 56 analyses, green outdoor activities received more positive ratings than did activities taking place in other settings. These findings suggest that green outdoor activities are beneficial in reducing ADHD symptoms among both boys and girls.”<sup>12</sup>





**The Texas  
state  
legislature  
now  
requires 30  
minutes per  
day  
of recess in  
elementary  
schools  
statewide.<sup>17</sup>**

## NWF Seeks Solutions

Schools should not bear the entire burden for improving learning readiness via increased outdoor time and exposure to nature, but they can still play a central role in helping improve the capacity of today's students in several specific ways.

### Making School “Wellness” Plans Greener

The Department of Health and Human Services reports that as of 2007, at least 40 states have produced policy guidance documents to help education agencies create wellness policies.<sup>13</sup>

In the Child Nutrition and WIC Reauthorization Act of 2004, Congress established a requirement that school districts with a federally-funded school meal program develop and implement wellness policies that address nutrition and physical activity.<sup>14</sup> The National Alliance for Nutrition and Activity encourages schools to use, distribute, and adapt the Model School Wellness Policies.<sup>15</sup>

In addition to focusing on eating habits and nutrition, the Alliance supports all K-12 students having the opportunities and encouragement to be physically active on a regular basis, extending beyond traditional physical education classes. This includes students receiving the nationally-recommended amount of daily physical activity (at least 60 minutes per day from the CDC).<sup>16</sup>

### Restoring Recess

Recess is one time during the school day that children are able to be carefree, allowing their minds, bodies, and even their voices to be uncontrolled. Unfortunately, many schools have cut back on recess as a way to increase the amount of preparation students receive for standardized statewide testing.

Unstructured physical play is a developmentally appropriate outlet for reducing stress in children's lives and improves learning readiness. The American School Health Association, the National Association of State Boards of Education, the National Association of Early Childhood Specialists in State Departments of Education, the National Association for Sport and Physical Education, the National Association for the Education of Young Children, the Centers for Disease Control and Prevention, and a non-federal Task Force on Community Preventive Services have acknowledged the benefits of recess, physical activity, and physical education as a regular part of a child's school life.



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### Greening the School Grounds

While some schools are models of natural settings, most of America's schools were developed without thought to natural landscaping or vegetation. They are built inexpensively on large open fields and typically feature large paved areas. Recent studies extolling the soothing effects of greenery on children in a learning environment indicate a new approach may be warranted.

Just having more trees and vegetation on the school grounds—no matter how simple or modest a plan—can help create an environment more conducive to learning. Effective examples of ways to “green” school grounds are as simple as planting trees and shrubs, building plots for ornamental plants and flowers, and placing large potted trees or plants on the roofs of inner city schools. In addition to the educational benefits of greening of the school grounds, the activities are good ways to involve the community and parents.

Find out how  
to create  
your own  
schoolyard  
habitat at  
[nwf.org/  
schoolyard](http://nwf.org/schoolyard)

## Schoolyard Gardens and Habitats

National Wildlife Federation has certified schoolyard wildlife habitats in more than 3,400 U.S. schools and helped create garden plots in thousands more.<sup>18</sup> These areas have increased outdoor awareness and time children spend outside in several ways:

- Hands-on creation and management of the habitat are positive learning experiences for both students and teachers. Simple tasks of plotting the space, selecting plant material and seeds while learning how to nourish and nurture the garden or habitat make lasting impressions and enhance students' abilities to see the natural world and recognize their place in it.
- Available high-quality curricula teach children about natural processes ranging from growing food for humans to raising food plants for wildlife. Most of these curricula are correlated with state standards for science, mathematics, social studies, and language arts and have demonstrated success in raising test scores.
- After-school educational programs play a larger role in the daily care of children than they did 20 years ago. Schoolyard gardens and wildlife habitats diversify the educational experience by getting kids out of the traditional classroom setting while offering intensely interesting educational experiences.



## Walk/Bike to School Programs

Schools help increase the amount of time children and parents spend outdoors each day by encouraging children to walk or bike to school. A study of children living within walking distance of schools found that more than 90 percent of young people walked in the 1960s while less than one half of youth are walking today.

By working together with public works and public safety organizations, local school districts can help assess and support improvements needed to make it safer and easier for students to walk or bike to school.

Groups such as the Safe Routes to School Partnership and National Center for Safe Routes to School offer creative solutions, funding recommendations, and resources for developing comprehensive and safe programs to encourage more walking and biking to school. The group offers resources for programs such as the

“walking school bus” where children meet up under parental supervision and walk to school in groups.<sup>19</sup>

# 10 Ways to Get Outside - Even After School Starts



*Parents: With homework, soccer practice, ballet – is there time in the schedule to play outside? Here are some tips to get a **Green Hour** – or at least part of an hour – during a busy day:*

1. **Scenario:** Traffic made you late, there's no time to cook dinner, so you drive the family over to the rotisserie chicken place to get a quick meal.

*Tip:* Keep a picnic blanket in your car for an impromptu picnic on any spot of grass you can find!

2. **Scenario:** Backpack? Check. Lunch? Check. You're ready to head to school.

*Tip:* Whether you drive or walk to school, or wait with your child by the bus-stop, take a moment to notice nature. Make it a game of "I Spy" -- or download this nature scavenger hunt at [greenhour.org/hunt](http://greenhour.org/hunt) .

3. **Scenario:** Your child is studying plants at school and, at the dinner table, recites how photosynthesis works. You, yourself, have never successfully kept a plant alive.



*Tip:* Start small: All you need is some bird-seed and a sponge. For sponge-garden instructions, visit [greenhour.org/spongegarden](http://greenhour.org/spongegarden). Next step: check out National Gardening Association's parents' primer for gardening with kids at [kidsgardening.com/primer.asp](http://kidsgardening.com/primer.asp) .

4. **Scenario:** You and your youngest wait outside your older child's school, a few minutes before the bell.

*Tip:* Look up at the sky together. "Wait, mom -- is that a sheep or a donkey?" Picking out shapes in the clouds is a classic childhood activity -- and needs no special equipment.

5. **Scenario:** Your child looks at you and says, "Mom -- I'm a little old for cloud-watching!"

*Tip:* For older kids, combine technology with the outdoors and go geo-caching or, the lower-tech version, letterboxing. There are about 20,000 letterboxes and 250,000 geocaches hidden in North America. Visit [geocaching.com](http://geocaching.com) and [letterboxing.org](http://letterboxing.org).

For more  
outdoor  
activities for  
kids, visit  
[greenhour.org](http://greenhour.org).



# 10 Ways to Get Outside - Even After School Starts



“We just moved into our neighborhood and are shocked that we are one of the few families that spend any significant amount of time outside. Where is everyone? After reading the statistics, now we know - but we also know where we'll be -- outside.”

Gretchen Eldridge,  
a Massachusetts  
mother of three

6. **Scenario:** The kids get home from school and immediately plop in front of the TV. You suggest going outside. They respond, "Indoors is more fun!"

*Tip #1:* Set time-limits for TV watching and video game playing. It won't be popular, so make sure you have a back-up plan. If you have a backyard, kid-customize it with a homemade fort, dart boards, a trampoline, a craft table. Set up a bird house to keep wildlife visiting.

*Tip #2:* No backyard? Find your local parks using [nwf.org/naturefind](http://nwf.org/naturefind). For older kids, start stretching their boundaries, allowing them to go for unsupervised walks in the neighborhood with groups of friends. They'll love the feeling of independence.

7. **Scenario:** Outside, it's a perfect fall day, but you look at your child's homework assignments and realize outside play-time isn't a reality.

*Tip:* Take homework outside! There's no reason math problems can't be done in the fresh air. Set up a clean outdoor workspace for your child on a patio table, perhaps.

8. **Scenario:** Your daughter comes home from school clutching new-found treasures: three crumbly leaves, two acorns and a dirt-encrusted rock.

*Tip:* Instead of putting them on the kitchen counter, in a drawer, or—gasp—the trash, start a nature table. Set a limit of how many items she can have in the "nature museum" -- so they'll keep it to a manageable number. Other ideas: use an old tackle or sewing box, or a hanging shoe-organizer with clear plastic pockets. Have your daughter decorate it!



9. **Scenario:** A blank piece of paper in front of her, your son asks you, "What should I draw?"

*Tip:* Have your child make a map of your neighborhood — using only natural landmarks. This will heighten observation skills and can be the first step in creating a "field guide" to the nature in your neighborhood.

10. **Scenario:** It's 8 p.m. Dinner's over, but not quite time for bed.

*Tip:* Keep flashlights near the door, and go for a neighborhood night hike. Kids will love the novelty -- and you can challenge them to identify "night sounds." Learn how to make a moon journal at [greenhour.org/moonjournal](http://greenhour.org/moonjournal).

To find the  
green  
spaces in  
your  
neighbor-  
hood, plug  
your zip  
code into  
**nwf.org/  
naturefind.**



## Footnotes:

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## *A School Readiness Guide for Teachers and Parents*



**Be Out There - [www.BeOutThere.org](http://www.BeOutThere.org)**



National Wildlife Federation's *Be Out There* public education campaign is aimed at informing and educating American parents about the importance of children having more outdoor time on a regular basis and how to make that happen.

NWF's initiatives include working with state and federal level policy-makers to advocate for the strengthening of environmental education programs and unstructured outdoor playtime.