

BEYOND THE CLASSROOM

HOW OUTDOOR LEARNING SPACES HELP IMPROVE STUDENT PERFORMANCE AND WELLBEING



ghent®

The Science Behind the Positive Impacts of Outdoor Education Spaces

“Class, take
your seats.”

It’s a line that over 75 million students enrolled in K–12 schools across the U.S. hear daily. Every weekday, many students will take their seats and stay seated for much of their six-to-seven-hour school days. Most will only see outdoor spaces during recess and the occasional gym class. By the time a student graduates high school in the U.S., they will spend upwards of [11,700 hours sitting in a classroom](#). Those that continue on to higher education will spend many more hours seated in classrooms.

As school districts and pediatricians recognize the risk factors associated with sitting in desks all day long, as well as those added on by lack of access to sunlight and fresh air, designers in the education space have investigated alternative learning spaces that allow students to get out of their desks and into the great outdoors.

Learning from The Biophilia Hypothesis

The [biophilia hypothesis](#)—that humans possess an innate tendency to seek connections with nature and other forms of life—is another leading reason why educational facilities are looking to bring the outdoors in, and the indoors, out. People, especially children, innately want to feel connected with nature. It boosts our mood, reduces stress, and encourages creativity, all things that are useful to productivity and information retention.

1. Support Teaching and Learning.
2. Be Safe and Healthy.
3. Be Sustainable, Clean and Green.
4. Be a Center of Community.
5. Be Based on a Public Process.
6. Be Practical, Cost Effective and Flexible.

A [Report from the National Summit on School Design](#), convened by the American Architectural Foundation, included “outdoor environments for educational activities and experiences” as a key point in one of their Six Key School Design Principles: “Support Teaching and Learning.”

Access to fresh air and outdoor spaces greatly improves a child’s school experience and development because it taps into our inherent need to be outside. Research has shown that students are more productive, healthier, and happier if they are given access to outdoor learning spaces in schools. Learning in nature has a high influence on the physical and mental development of students, providing many benefits that stay with students beyond their years in school.

The Risks of Indoor Learning

Obesity, Heart Health, and Vitamin D Deficiencies

Lack of Sunlight Poses Many Risk Factors to Development

Up to 45 percent of children are vitamin D deficient, with [one study showing](#) the number to be as high as 59 percent. [According to research](#), these deficiencies have a host of negative impacts on children and teens, including:

- Developmental delays
- Bone fractures
- Slow growth
- Muscle pain
- Irritability
- Rickets

Sitting Contributes to Obesity

Rates of childhood obesity are increasing in the U.S., affecting about 14.7 million children and adolescents, [according to the CDC](#). As a response, pediatricians are [turning to Mother Nature](#) to combat widespread obesity, chronic illness, depression, and behavioral problems among children and young adults.

Often dubbed as “the new smoking,” sitting for long periods of time has been shown to have [many negative effects](#), including increased risks for:

- Diabetes
- Obesity
- Heart disease
- Liver disease
- Metabolic syndrome
- Premature death

While much of the research on sitting for long intervals has been conducted on adults, more recent studies looked at the impact it also has on children. [A 2015 study](#) focused on girls between the ages of 9 and 12 (a group that is particularly prone to being sedentary) showed that not only were those



Sitting for hours a day can constrict the arteries of children and increase the risks of cardiovascular disease. Children should get up once every hour to maintain a healthy heart.

who sat for long periods throughout the day more likely to be obese, they also experience a profound reduction in vascular function. The study showed that their arteries had actually constricted by as much as 33 percent. This is a major concern for heart health because a simple one percent decline in vascular function has been shown to increase cardiovascular disease risk by up to 13 percent.

Movement is the answer to this issue. Researchers in the study found that, after getting up and moving around, the arteries of the participating children bounced back and returned to normal function and dilation.

The conclusion: moving the classroom outdoors can enable educators to create lesson plans that incorporate movement. Encouraging students to get up and move at least once an hour is a crucial way to maintain the heart health of children and young adults.

Getting up and Getting Out

The Benefits of Outdoor Learning and Nature in Schools

A [study that focused on 255 sixth-grade students](#) from four elementary schools showed that those who attended outdoor educational programs showed significantly higher gains in cooperation and conflict resolution skills, had larger gains in self-esteem and motivation to learn, and significantly improved their science scores by 27 percent.

This is only the tip of the iceberg when it comes to research conducted in the field of outdoor education.

[Comprehensive reviews of publications have also revealed](#) that school subjects taught in natural environments increase everything from student engagement to ownership of their learning, academic development, social and collaborative skills, and other socio-emotional benefits.

The research conducted in this area focuses on three major beneficial outcomes of outdoor education for students:



1. Physical health



2. Mental wellbeing



3. Academic Performance

Improving Physical Health with Outdoor Learning Spaces

Experiences in nature have long been linked to positive outcomes regarding Health-Related Quality of Life (HRQoL) in youths, which is a multidimensional concept that includes domains related to physical, mental, emotional, and social functioning. [Research has shown](#) that spending time in parks, greenspaces, and other natural settings during the day can promote physical, emotional, and mental health.



A moving child is a learning child.

Movement is one of the four design elements Ghent recommends when designing a classroom space. See how movement helps children learn better and stay healthier by reading another one of our white papers.

[Learn More →](#)

A [qualitative analysis of over 20 research papers](#) regarding outdoor learning schools also found positive outcomes in physical health in students. These positive outcomes included:

- [Decreases in sedentary behavior](#)
- [Increases in daily steps](#)
- [Increased physical activity](#)
- [Better physical motor skills](#)
- [Improvements in fine motor coordination, balance, and muscle strength](#)

Other studies found that outdoor learning had positive outcomes that include:

- [A reduction in the chance for developing myopia \(nearsightedness\)](#)
- [Better infection control and mitigation \(of viruses\)](#)

When compared to the common risk factors involved in solely learning indoors, outdoor learning is primed to combat some of the most widespread ailments impacting many U.S. children today.

Improving Mental Wellbeing with Outdoor Learning Spaces



Health-Related Quality of Life also extends to mental wellbeing. A large number of studies have demonstrated that outdoor learning spaces can have significant positive impact on children—psychological wellbeing and social development are improved by simply being outside throughout the day.

Simply being outside throughout the day is enough to boost the happiness and health of students. [According to Research Conducted at Claremont Graduate University, those who spent ≥120 mins](#) in nature had consistently higher levels of both health and wellbeing than those who reported no exposure. These findings were consistent across most age groups and showed no variance based on how long the exposure was achieved (for example, one long outdoor session vs. several shorter sessions per week).

Outdoor education, specifically, has been linked to many mental health benefits across students of all ages, including:

- [Better management of mental health](#)
- [Reduced symptoms of ADHD](#)
- [Reduced stress](#)

Being outside and experiencing nature has been shown to improve:

1. Positive emotions (awe, happiness, joy, etc.)
2. Mental health
3. Prosocial behavior (how people behave toward others)
4. Stress levels
5. Heart rates
6. Mood
7. Anxiety
8. Diastolic blood pressure
9. Risk of preterm births
10. Type II diabetes
11. Risks associated with stroke, hypertension, dyslipidemia, asthma, and coronary heart disease

Improving Academic Performance with Outdoor Learning Spaces

When students are happier and healthier, they are more engaged in class, more productive, and perform better than those who spend all their educational time inside. The research in this field has matured, revealing the cause-and-effect relationship between nature and learning. There are hundreds of studies tackling this topic, with both independent observers and participants reporting shifts in perseverance, problem solving, critical thinking, leadership, teamwork, and resilience, as well as improvements in attention, levels of stress, self-discipline, and interest/enjoyment in learning.



A major [4-year initiative](#) involving 40,000 primary and secondary school pupils in England found that 92 percent of pupils involved said they enjoyed their lessons more when outdoors. Over 70 percent of teachers also reported positive impacts on their teaching practice and job satisfaction.

A [comprehensive analysis of research in this area](#) found multiple links between nature and learning, many of which were centered around six key areas:

1. [Nature has a direct effect on attentiveness](#)—students are more likely to learn when they are attentive.
2. [Nature has a rejuvenating effect on mental fatigue](#)—students in classrooms with views of greenery perform better on concentration tests.
3. [Nature boosts self-discipline](#)—those who view nature have better results on tests of impulse control.
4. [Nature improves intrinsic motivation and engagement](#)—students experience higher satisfaction of course curriculum, materials, and resources, and more interest in school in general when they learn outside.
5. [Nature provides a quieter, calmer, and safer learning environment](#)—students are less likely to exhibit problematic and disruptive behaviors when in outdoor classrooms.
6. [Nature increases cooperation and collaboration](#)—greener settings are linked with the development of meaningful and trusting friendships between peers, the bridging of both socio-cultural differences and interpersonal barriers, and provide a more level playing-field wherein the teacher is seen as a partner in learning.

Even simply having a view of nature from within a classroom is enough to [increase student performance](#). Bringing the classroom outside can be an effective way to improve student learning at any age and in any setting.

Designing Outdoor Spaces for Productive Learning

Taking students out of the classroom to an outdoor learning space fundamentally transforms how lessons are planned and how students learn. Outdoor learning spaces are materially different than indoor classrooms. Since they are not contained by any walls, they can be less structured and more focused on mobility and interaction with the environment. Although the material space is different, the major concepts for effective classroom design still apply.

Add Structure While Allowing for Flexibility

When designing an outdoor classroom, it's easy to become lost in a sea of endless space. Consider the macro and micro concepts of learning spaces. Macro spaces refer to the physical layout of the major structures of the space (buildings, major landmarks, trees, and the actual physical dimensions of the space you are working in). Micro spaces refer to the physical arrangements of objects and students within the macro space (layout of chairs, tables, walkways, and teaching aids).

Focus on designing a space that brings structure to the wide-open space while allowing flexibility in learning (for example: space for lectures, group collaboration, individual study).



Design for Accessibility and Comfort

When designing spaces, make them accessible and comfortable for students who may be unfamiliar with the concept of outdoor learning. Spaces should be organized for independence, easy use, and accessible learning for students of all backgrounds and abilities. The comfort of students is integral to how effectively they learn and are able to participate within the space.

Incorporate Learning Tools

Enhance the learning experience with tools that fit within and are conducive to the outdoor learning environment. The most effective tools facilitate interactive and collaborative learning experiences, allow for real-time feedback and engagement, and provide a central point for students to focus on during lessons. Collaboration tools like whiteboards make the perfect accompaniment to outdoor learning spaces because they bring structure, accessibility, ease of use, and familiarity to often unfamiliar learning spaces. They are a great way to bring a bit of the inside, outside.



Ghent Preserve

The Outdoor Collaboration Unit that Allows Educators to Think Outside the Walls

Preserve is a permanent outdoor architecture unit that creates an education space not confined by the four walls of a school. These high-quality outdoor systems transform underutilized outdoor spaces into safe and comfortable teaching spaces that allow students to connect and collaborate. Configurable as single or paired multiple units, these customizable products allow schools to maximize the use of their grounds and campuses by creating a “fourth space” outdoors.



Made of recycled plastic, composite decking slats are eco friendly. Individual slats can be replaced reducing the amount of materials and resources consumed.

From short demonstrations and classes to longer workshops and seminars, as well as the occasional student meeting place, Preserve creates an on-site retreat that is both desired and needed by students of all ages.



Fabric awnings from Sunbrella® are water-resistant and UV-rated. The angle of the awnings sit at 15 degrees which is optimal for providing shade during work hours.



Double-layered tempered safety glass with an EVA interlayer creates a thick, durable writing surface



The structural steel frame is made to withstand harsh weather conditions. Preserve holds PE stamp approvals for various states.

About Ghent

For more than 40 years, we've been crafting and serving our customers' needs with innovative and customizable products, exceptional customer service, and on-time, hassle-free delivery. As a premium supplier of visual communication tools, Ghent is your one-stop shop for blended solutions to enhance your office, conference room, workspace, or classroom.

Quality: with over 95 percent of our products made in the USA, we know what quality looks like. Our products feature durable materials and surfaces that are resistant to scratches, stains, ghosting, and wear. We outlast the competition and back our products with up to 50-year warranties.

Customization: every whiteboard, glassboard and bulletin board that leaves our dock is made to order by men and women who understand the importance of quality craftsmanship. We feature near endless customization options that include size, shape, color, materials, fonts, images, and so much more.

Easy to Use and Clean: our products are manufactured to make writing on them a breeze. They are also easily cleaned and disinfected. Surfaces and materials are specifically chosen to adhere to BIFMA's guidelines for performance as it relates to typical cleaners, disinfectants, and methods for cleaning and maintenance.

Secure Shipping: we ship our products on time and guarantee that they arrive damage free. We have taken the time to master all the complexities that go into shipping and have developed custom packaging specifically molded to protect our products, which is why we have the lowest damage rates in the industry.

Incredible Customer Service: as a team of passionate and qualified individuals, we work to follow through on our promises, from marketing and customer service to production to shipping. We are confident that you will find the perfect visual communication tool that is perfectly customized to meet your needs.

From our people to your people, you can count on us.



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