



The Outdoor Classroom Philosophy:

Providing Hands-on, Minds-On Conservation Education Opportunities

Alabama’s educators are some of the most creative, dedicated people anyone could ever meet. In addition to their roles as instructors, counselors and mentors, they spend countless hours researching the most innovative and effective teaching methods they can find to help provide the highest quality education possible for Alabama’s students. Although their students may change from year to year, teachers’ overall educational goals remain the same:

- ❖ Actively engage students in their education,
- ❖ Increase students’ enthusiasm for learning,
- ❖ Effectively teach all students regardless of any disabilities,
- ❖ Reduce behavioral and disciplinary problems,
- ❖ Improve student performance and achievement, and
- ❖ Help produce responsible citizens.

Luckily, for educators across Alabama, they need to look no further than the Alabama Outdoor Classroom (AOC) program. Numerous studies demonstrate that outdoor classrooms can be utilized as educational tools to help teachers achieve these goals and many more. The AOC program utilizes the “hands-on, minds-on” learning philosophy as a major component of the program, which has proven to be a very successful, engaging and exciting teaching strategy that reaches a diverse group of students, reduces disciplinary issues, improves student achievement, and instills in students a sense of responsibility.

Hands-on, Minds-on Learning

Hands-on, minds-on teaching methods involve the students in a total learning experience which enhances students’ ability to think critically. Since children are inherent observers and explorers, the most effective approach to learning should capitalize on these intrinsic abilities.

The following Chinese proverb illustrates the hands-on learning philosophy best:



Doyle Keasal

Students have the opportunity to observe wildlife in its natural environment like the black swallowtail caterpillar on its host plant (fennel) in this butterfly garden.

*I hear and I forget,
I see and I remember,
I do and I understand
-Chinese Proverb*

Students, like many of us, retain information longer and understand a concept better when they learn it through a practical, hands-on activity. For example, which of the following strategies would make the greatest impact on you? To read about the life cycle of a butterfly, or to witness first-hand the metamorphosis of a butterfly egg into a caterpillar and then the caterpillar into a beautiful butterfly? When a lesson, such as this one, is enhanced with a real-world experience, the concept being taught is more thought-provoking and more relevant to the students.

Teaching in an Outdoor Classroom

Outdoor classroom sites developed through the AOC program include a variety of learning stations and activities that help educators provide direct, tangible experiences for their students that make hands-on, minds-on learning possible. Many of the nature-based activities developed for the AOC program are designed around this strategy and can be used in conjunction



As plants grow, students can utilize their math skills to measure the plants' size (on left) and calculate their growth rates over time. Then, as plants die, the students can help collect the plants' seeds (on right) so that they can plant them again the following year.

with current Alabama State Department of Education programs including the Alabama Math, Science and Technology Initiative. Many of these activities are also correlated to the Alabama Course of Study Objectives, and can be easily found in the “OC Activities & Lesson Plans” section of the Alabama Wildlife Federation website. To help schools develop outdoor classroom sites that utilize this learning strategy and include these types of quality, hands-on activities, the AOC program partners provide a variety of educator workshops throughout the year including free, on-site in-service workshops for the whole faculty.

Actively Engage Students

By being engaged in real-world experiences in a living laboratory, students take part in in-depth investigations using objects, materials, experiences, skills and ideas to draw meaning from and develop a greater understanding for the topic they are studying. This means that the students are active participants in their own learning instead of passive learners who simply listen to lectures, read text books, and learn to regurgitate what they have memorized. The students quite literally “manipulate” the things in their environment that they are studying such as plants, rocks, insects, and water while using scientific instruments such as rulers, balances, test tubes, thermometers, nets, microscopes, and calculators to collect and interpret the data. This encourages higher-level thinking skills such as planning, deduction, and complex problem solving.

These multi-disciplinary activities can also engage students by enhancing their understanding of how “it all fits together.” Students are equipped with the necessary tools (math and language skills), the knowledge (social studies and sciences), and the ingenuity (creativity and higher-thinking skills) to understand how the different subjects they are studying are related, and how to apply their knowledge and skills to solve real-world problems. This makes learning much more meaningful.

For example, let's look at the learning opportunities when students participate in an interdisciplinary activity as simple as vegetable gardening in an outdoor classroom setting. Students can:

- ❖ Research what crops were grown by Native Americans and what crops are grown by Alabama farmers today;
- ❖ Analyze the acidity of the soil in their gardens to determine if any “enhancements” need to be made to the soil;
- ❖ Calculate how many seeds are needed for the allotted space in their garden and the growth rate of their seeds as they grow into plants and vegetables;
- ❖ Build a scarecrow for the garden using their creativity, artistic skills and teamwork;
- ❖ Study what types of local wildlife might utilize the vegetables in the garden as a food source;
- ❖ Discuss the impact pollination has on our food sources,

and research the native bees and other pollinators found in Alabama;

- ❖ Research how to utilize environmentally-friendly pest management techniques to increase the crop production;
- ❖ Discuss their sensory observations including the different colors, smells, textures, sounds and tastes produced by the vegetable garden;
- ❖ Study the different parts of plants and how different vegetables have different root systems;
- ❖ Keep a journal of the growth and development of their vegetables, including a growth rate chart to estimate when the vegetables would be ready to eat;
- ❖ Research the health benefits associated with eating the different types of vegetables;
- ❖ Harvest and eat the vegetables they have grown, thus learning where vegetables come from instead of assuming that the food they eat “magically” appears in the grocery store; and
- ❖ Donate some of the vegetables to a local food bank as a service learning project.

These hands-on, outdoor activities are just a few examples of how creative teachers can utilize a vegetable garden as an educational tool, and this list does not include the numerous other activities that can be conducted in conjunction with other outdoor classroom “learning stations” such as a butterfly garden, aquatic study area, or song bird sanctuary.

Increase Students’ Enthusiasm

Teaching strategies based on the natural world also appeal to

children’s innate curiosity in nature and the outdoors. Students become excited about lessons when they have the opportunity to go outside and explore their environment. Furthermore, when students believe that the information they are studying is relevant to their lives and their community, and when they gain a greater appreciation for the interconnectedness between what they are learning and their natural environment, they often strive to learn more about the topic. How better to draw these connections and excite students than in their very own schoolyard wildlife habitat and outdoor classroom area that they helped to develop?

Jennifer Whitman



Students enjoy getting their hands dirty when given the opportunity as they work in their garden.

When third grade students at Eclectic Elementary in Elmore County, Alabama, were questioned about their feelings regarding the school’s outdoor classroom, the students’ responses supported the “hands-on, minds-on” learning philosophy and demonstrated students’ enthusiasm for being outdoors:

I like to go outside to watch the birds and animals. I remember more of what I do and not much of what I read. We watch the animals and plants in their habitats. We plant seeds to help the soil. I like to observe bugs. – Joseph Ammons

An outdoor classroom is good because you can learn to love nature. I like to just sit in the sun, alone, and watch the birds and listen to the wind. I like to create things for animals to use. My class likes to plant flowers so that we know the bees and butterflies will come. Going outside to observe is much better than being trapped inside. – Kayson Wallace

I like to do experiments like digging in the dirt and growing plants. It’s hard to do that in our inside classroom. I learn more outside. – Matt Bice

Reaching ALL Students

The AOC program advocates the use of the outdoor classroom and related “learning stations” for **all** of the school’s students in **all** grade levels. All students are encouraged to participate in the school’s outdoor classroom from the very beginning stages of development on through the use and maintenance of the outdoor classroom site, even if the students have physical limitations, learning disabilities, or behavioral problems.

Studies have found that students with these types of limitations often benefit the most from hands-on activities that engage all of their senses; however, in the past, it was difficult to find activities that met the needs of a diverse group of students with varying disabilities. Thankfully, the National Wildlife Federation (NWF) created *Access Nature*, a conservation education activity guide

(available through the NWF website) that provides a bounty of engaging, exciting activities that can be used with students who have a wide variety of challenges including hearing, cognitive, motor and visual disabilities. Thus, each activity can be used with most, if not all, students regardless of their mental or

physical capabilities, and nearly all of the activities can be used in conjunction with an outdoor classroom site.

Reduce Disciplinary Problems

Outdoor classrooms also expand the traditional classroom beyond the typical 30 desks, 30 chairs, and 30 books environment into an alternative classroom setting that is fun and exciting. Students who appear bored and/or disruptive in an indoor classroom often will thrive when taken outdoors. They are more eager to learn and more motivated to actively participate in activities because their curiosity is heightened and their desire to explore takes over.

Most outdoor classroom areas offer a beautiful, serene learning environment that contrasts to the hustle and bustle of students' chaotic everyday lives and allows them a greater opportunity for reflection, contemplation, observation and inspiration. This can be therapeutic for all students but especially at-risk students with behavioral problems, thus helping teachers and administrators reach out to these students in a tranquil, non-threatening environment. Students with emotional problems also respond well to the types of hands-on sensory activities that can be conducted in the outdoors.

Furthermore, studies suggest that students who participate in a greater amount of physical activities tend to have fewer behavioral problems. An outdoor classroom can provide a great amount of fun, physical activity through the use of gardening, outdoor games, maintenance activities, and simply being active

in the outdoors. This increased physical activity can also reduce attention deficits, heighten beneficial hormones, and help reduce childhood obesity while increasing a student's self-esteem.

Improve Student Achievement

In addition to reducing disciplinary problems, multiple studies have highlighted the benefits of utilizing hands-on, outdoor activities to promote cross-curricular learning, student motivation, critical thinking skills and information retention. For instance, a study conducted by a panel of experts including Cynthia Klemmer, Director of Education and Development at the National Gardening Association; T.M. Waliczek, Associate Professor at Texas State University; and J.M. Zajicek, Professor of Horticultural Sciences at Texas A&M University, found that a group of third, fourth and fifth grade students involved in a gardening program scored significantly higher on a science achievement test than another group of students who were not involved in the program and were taught only through the use of traditional teaching methods.

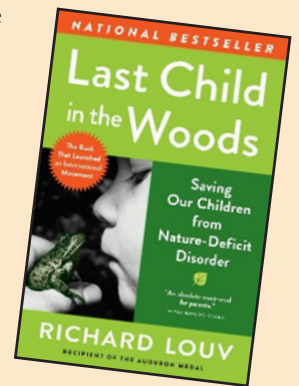
Another study performed by Julie Athman Ernst and Martha Monroe reviewed the effect of environment-based education (compared to the traditional classroom setting) on ninth and twelfth grade students' critical thinking skills. The study found that students participating in the environmental education programs had significantly raised scores on the Cornell Critical Thinking Test at both grade levels. When reviewing the results, teachers explained that utilizing the "environment as an integrating context" increased the students' test scores by

Restore Children's Connection to the Outdoors & Nature

While trying to create a productive, outdoor learning environment for their students, many educators have realized that a vast majority of their students have become disconnected from the outdoors and nature. These observations are echoed by Richard Louv, in his latest book titled *Last Child in the Woods*. Louv explores the growing trend that many of us see on a daily basis: Our children are choosing computer games and televisions over the outdoor adventures that we enjoyed while we were growing up. He refers to this disconnection as "nature-deficit disorder," and includes numerous examples from the thousands of children, parents and educators he interviewed during his research. One quote from a fourth-grader he encountered demonstrates this trend poignantly, "I like to play indoors better, 'cause that's where all the electrical outlets are."

In his writings, Louv links nature-deficit disorder to disturbing childhood trends such as rises in obesity and attention deficit disorders. However, he further explains how experiences in nature can be therapeutic for these childhood maladies. He writes, "As one scientist puts it, we can now assume that just as children need good nutrition and adequate sleep, they may very well need contact with nature." He demonstrates how direct exposure to nature is essential for healthy childhood development as it engages children's senses, providing solace and peace while at the same time a "wildness" that piques children's curiosity. More specifically, he explains how utilizing our very own backyards for "environment-based" educational opportunities can dramatically improve students' learning potential and decrease behavioral problems.

Through the Alabama Outdoor Classroom Program, we strive to convert empty schoolyards into biologically-rich natural environments where students can explore the outdoors and connect with nature, which will improve the quality of life for Alabama's children and create a new generation of concerned citizens who have the passion for wildlife and the outdoors and the knowledge to help conserve it.





Students can become scientists as they analyze flora and fauna specimens found in the schoolyard wildlife habitat and outdoor classroom.

incorporating the following:

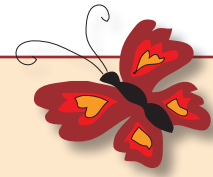
- ❖ multi-disciplinary activities that were tied together using the environment as a common theme;
- ❖ projects that required students to state a hypothesis, conduct research, and investigate environmental issues;
- ❖ learning opportunities where students took on the responsibility of selecting their own projects, goals and action plans; and
- ❖ opportunities for students to utilize critical thinking skills as they participate in locally-relevant activities that are connected to their communities.

Produce Responsible Citizens

Just as importantly, an outdoor classroom also provides opportunities for students to work as a team, and see what can be accomplished with teamwork and community support. The community involvement, parental participation, and local business support for the school's outdoor classroom can create an infectious atmosphere that builds excitement throughout the school from the students all the way up to the administration.

Outdoor classroom projects can also provide opportunities for students to give something back to their community, providing numerous service-learning projects for students whether they harvest vegetables for the hungry, put together vases of flowers for local nursing homes, or clean up litter around a local watershed. The AOC philosophy emphasizes the importance of having the students involved in ALL aspects of the outdoor classroom development, use and maintenance, to teach the students responsibility for their community, and to help students develop a sense of ownership for their "backyard."

As human populations continue to grow and expand, we place increasing demands on Alabama's natural resources while losing vital habitat for wildlife. An outdoor classroom, however,



Proven Benefits of Teaching Outdoors

According to the American Institutes for Research's 2005 study "Effects of Outdoor Education Programs for Children in California," children who participated in science activities in outdoor classrooms:

- ❖ Raised their science scores by 27 percent;
- ❖ Retained information for six to ten weeks after the activities occurred; and
- ❖ Demonstrated significantly larger gains than the control group in self-esteem, conflict resolution, relationship with peers, problem solving, motivation to learn, and behavior in class.

According to Stephen R. Kellert's "Building for Life: Designing and Understanding the Human-Nature Connection," outdoor education supports the emotional, behavioral and intellectual development of children.

The Centers for Disease Control and Prevention (CDC) recommends for children to participate in healthy outdoor activities in nature because nature has the potential to improve one's physical, mental, and social health.

can help students reverse that trend. Your outdoor classroom site can enhance the aesthetics and wildlife habitat around the school's campus and throughout the community as a whole, while also helping youth to understand their link to the natural environment and the need to conserve and manage these resources and habitat.

Start Today!

Through the AOC program, students will have the opportunity to experience nature first-hand as they help develop and maintain your school's outdoor classroom, and as teachers utilize the site for hands-on, minds-on learning opportunities. Educators will not only have a sustainable and effective outdoor learning laboratory but they will also have the resources and activities to integrate environmental education into their curriculum, making the best use of their outdoor classroom. We look forward to working with you to help provide more hands-on, outdoor learning opportunities for your students, so they become more excited about learning, gain a greater understanding of complex concepts, learn how to apply that knowledge to real-world situations, develop a sense of responsibility, and become informed, productive citizens with a strong conservation ethic.