



Photographs by Karan Wood

The Field of Dreams (and Other Outdoor Classroom Myths)

It takes more than benches and butterfly bushes to create a well-used outdoor classroom. Here's how one school is succeeding through creative ideas that give teachers the training, tools, and confidence to take learning outdoors.

by **Karan Wood**

MYTH #1: If you build it, they will come.

Like the line from the old baseball movie *Field of Dreams*, many people assume that if outdoor classrooms are built, teachers will flock to them. But when volunteers from Frey Elementary School in Acworth, Georgia, toured schools to get ideas for an outdoor education program, they noticed a disturbing pattern. Many of the facilities seemed neglected and abandoned. Trails were overgrown, gazebos dilapidated, and raised beds choked with weeds. Most importantly, students were nowhere in sight. Determined to find out if outdoor classrooms were wanted or needed before investing the time and energy to build them, they distributed an opinion survey to the faculty at Frey. The results were somewhat surprising.

Although several teachers expressed an interest in walking trails, there was not much enthusiasm for teaching *al fresco*. A few respondents indicated that activities such as hunting for tadpoles and journal-writing outdoors were part of their routine, but most teachers thought of the school grounds as a place for aimless walks and nature crafts — extra-curricular activities for which they had no time. Many expressed serious reservations about teaching outside,

ranging from concerns about lack of relevance to worries about poison ivy, bees and yellow jackets, ticks, bears, rabid animals, and uncontrollable children. Almost all who answered the survey agreed that there was a need for better access to the school's undeveloped nature area, which was isolated on the far side of a creek. The most popular requests were for bridges, trails, and learning stations. But teachers warned that they would need training, support, and teaching materials before they could make use of such facilities.

Armed with the survey results, the Environmental Committee of the Frey Parent Teacher Student Association (PTSA) set out to convert each request or perceived problem to a goal, prioritize goals according to the responses, and create an effective outdoor education program. Local experts, including a forester and an environmental educator, walked the property and helped create a master plan based on the top survey requests.

To make this master plan manageable, volunteers divided it into “bite-sized” chunks. Each chunk consisted of a project that had a clear beginning and end, could be completed by unskilled volunteers, and would produce a tangible result in a short time. The idea was to create irresistible opportunities for volunteers to work on projects that would be visible and lasting. The wide variety of projects included assembling a windmill weather station, building convertible bench-tables



A favorite style of bench in the outdoor classroom has a back that flips up to become a tabletop.

for an outdoor classroom, planting native trees for wildlife, constructing a bridge over a creek, installing a kiosk and signs, and blazing trails. Project descriptions were published in a “wish list” sent to community service organizations, in the hope that those groups would volunteer to help.

A core group of parents and teachers soon began to tackle projects on the list, but it proved more challenging to involve the community — until the local newspaper printed a photo of an Eagle Scout happily hammering on a trail kiosk. Boy Scouts began appearing at the school doorstep looking for service projects, and by the following year seven Eagle Scout projects were underway simultaneously. A local home improvement store, bank, and discount department store also requested projects, for which they contributed materials, equipment, and employee-volunteers. Grant awards soon leveraged funds that were raised by parents for the purchase of project materials.

The new bridges and trails made it easier for students to walk in the woods and also eliminated many of teachers’ worries about encountering insects and wild animals, or getting lost. Classes began venturing outdoors to explore more often. But most teachers still felt “out of their element” in the woods. The solution was to offer teacher-training courses — Project Learning Tree, Project WILD, and Project WET — in the school’s nature area. These courses, provided throughout North America by volunteers who charge only for the lesson book that participants receive, expand teachers’ repertoires of educational activities and carry a unit of professional development credit. They feature learning activities that are interactive, engaging, and differentiated for Grades K–12. Frey’s principal arranged in-service training days so that every teacher became certified in one or more of these environmental education courses.

To make faculty members even more comfortable outdoors, the Environmental Committee lured teachers into the woods with festive faculty picnics in far-flung parts of the nature area. But the prospect of teaching classes outside was still daunting to teachers who feared losing control of students

or worried about being in the midst of an elaborate hands-on activity and having to pack it all in when a child needed to use the restroom. Many teachers did not have the time or money to put together materials for the activities they had learned through Projects WET, WILD, and Learning Tree. And they were intimidated by the logistics of hauling supplies for outdoor lessons, setting up in advance, and cleaning afterwards.

With a little ingenuity, solutions to these problems were relatively easy and inexpensive to arrange. Parents donated equipment for teachers to use outdoors, including cargo wagons to

haul supplies on trails, whistles to call students together, soccer cones to delineate activity boundaries, and fanny-pack first aid kits. Scout volunteers assembled a storage shed and installed a portable restroom in the woods.

Most importantly, at least one adult volunteer from each class was recruited to accompany teacher and students on forays into the nature area, assist with outdoor education activities (including setup and cleanup of experiments, gardening, etc.), and occasionally escort a child to a restroom. These invaluable volunteers, who received a half-day of training and were on call to help all year long, were known as “Earth Parents.” Their availability emboldened many more classes to venture outside for learning activities.

After completing most of the projects in the original master plan, the Environmental Committee conducted a new faculty survey. It was no surprise that more outdoor classrooms were the number one request; what was unexpected was teachers’ ideas of what an outdoor classroom should look like. Most envisioned a lecture hall in the woods, complete with rows of fixed benches, a raised podium at the front, and a flipchart on an easel. Yet when asked how they would use an outdoor classroom, teachers spoke of active simulation games that required open fields, experiments and observations for which tabletops would be needed, and student investigations in a variety of ecosystems.

Based on this feedback, the Environmental Committee eschewed covered pavilions, amphitheaters, and complicated structures in favor of simple learning stations. Most of the outdoor classrooms are clearings large enough to accommodate one or two classes, with seating on boulders or benches. (Teachers who were reluctant to take students outside said they found it less daunting to do so with another class). The most popular type of bench built by volunteers is one that ingeniously converts to a tabletop when flipped up and locked in place. Because it provides an ideal surface for student experiments and inquiry investigations, this convertible bench quickly became the mainstay of Frey’s outdoor classrooms.¹

Myth #2: Everything I ever needed to know about science is in the book

Few schools depend solely on books for teaching science these days, but who knew that even brand new textbooks fall far short of matching the curriculum in many schools? The completion of new outdoor classrooms, convergent with the county's purchase of new science textbooks, prompted big changes in teaching at Frey Elementary. Teachers discovered that the correlation between the state curriculum and new science textbooks was as low as 30 percent for one grade level and, at best, only 70 percent. This meant that any teacher who relied solely on the science textbook and activities it contained would fail to cover important required subjects and instead teach concepts that the state had assigned to other grade levels. Teachers needed hands-on science activities in order to teach the standards, since they could not rely on textbooks alone.

Field study kits were created to bridge the gap between textbooks and the curriculum, and to provide activities for outdoor classrooms. Each field study kit teaches one curriculum standard at one grade level and consists of a clear plastic backpack filled with laminated directions for a hands-on student investigation, all necessary supplies for a class of 32, and questions for de-briefing the lesson. Making the field study kits was a labor of love that lasted several years. Working backwards from the state science curriculum for every grade level, teachers identified each standard for which the textbook provides an exemplary hands-on lesson, and filled a corresponding backpack with directions and supplies. For the remaining standards, teachers nominated favorite inquiry investigations from their years of classroom experience and created kits based on those activities. Where gaps remained, the Environmental Committee scoured Projects WET, WILD and Learning Tree, and other sources, for engaging inquiry investigations that matched the standards. When necessary, they crafted original activities. Over a period of three years, they assembled a field study kit for virtually every science standard in Grades K–5. Inspired by the innovative school reform initiative that uses the environment as an “integrating context for learning,”²² Frey teachers also created field study kits for social studies, math, language arts, and interdisciplinary studies.

The next challenge was organizing these field study kits into a coherent system that was easy to use. Although the school was crowded and storage space tight, teachers made room for carpenters to install hooks on walls. The kits now hang in see-through backpacks, arranged and labeled in



Each field study kit teaches one curriculum standard at one grade level and contains laminated directions for a hands-on student investigation, all necessary supplies for a class of 32, and questions for de-briefing the lesson.

order of the numbered curriculum standards for each grade level. A reservation system tracks the kits, which teachers evaluate each time they are used. Earth Parents inspect returned kits, replace supplies, and attach tags to show that they are ready to use again.

A dynamic science education professor from Kennesaw State University taught Frey teachers how to guide hands-on investigations. At his workshops, teachers also tried out the field study kits for their grade levels. Whether teachers had explored a kit in advance proved to be the most significant factor in determining whether they introduced the hands-on investigation to their students.

As teachers gained experience using field study kits, they began to realize something that is key to the inquiry process and yet somewhat counter-intuitive: that to explain a concept fully before student investigation takes place, or to demonstrate what is supposed to happen before allowing students to experiment for themselves, takes away the intellectual benefits and excitement of the discovery process. For this reason, the field study kits were designed so that student activities are conducted first and debriefing sessions follow. This is also why the kits contain enough supplies to engage every student in a hands-on activity and ensure that no child is a bystander.

Equally important, field study kits feature authentic investigations instead of crafts. The difference is not easily distinguishable at first, as both can be considered “hands-on activities.” But, for example, gluing pasta on a paper plate to represent components of the water cycle (or any other process) is a craft based on prior knowledge. To attempt to make it rain inside a clear plastic box, using water, ice, and a heat source, is an authentic inquiry investigation. Other investigations that students conduct using the science field study kits range from chlorophyll extraction, water quality testing, and animal track casting, to building simple machines and searching for fossils. Children whose previous

outdoor experience was limited to making pinecone bird feeders now use stream tables to create and manage erosion, catch insects to record life processes, set up vast scale models of the solar system, reconstruct owl food webs by dissecting regurgitated pellets, and blast off rockets

to observe chemical reactions. Using interdisciplinary field study kits, students calculate the height of trees, make and eat hardtack just as Civil War soldiers once did on school grounds, play lacrosse to learn about Cherokee life, map the nature area, and write poetry. If Frey teachers once thought of outdoor education as extra-curricular fluff, they no longer had that concern after field study kits were created and outdoor classrooms in place.

Myth #3: Once in motion, an outdoor education program tends to stay in motion

It may seem that after painstakingly researching, funding, and creating an outdoor education program, it would be a breeze to maintain it. However, keeping an educational initiative going can be even more challenging than getting it started. Anyone who has developed an innovative program and later applied for funding to support it has had to contend with the question: "How will your program be sustained?" They might as well ask, "How will you keep your perpetual motion machine running?"

Teachers and volunteers at Frey soon realized that nothing lasts forever. Even well-tended gardens grow weeds and trails disappear into blackberry brambles over the summer; field study kits get jumbled and disorganized with use; and key staff or volunteers leave, to be replaced by new folks who may not have an affinity for outdoor education.

Maintaining trails and outdoor classrooms is one of the biggest challenges every year. The school district grounds crew, although overworked and understaffed, graciously mows some outdoor classroom areas at Frey. And members of a volunteer force called F.R.O.G.S. (FRiends Of Green Spaces) weed-whack, mulch, and assist in caring for the school nature area. One of the most successful F.R.O.G.S. initiatives is the Adopt-a-Spot program through which families, classes, businesses, and volunteer groups care for one outdoor classroom or one segment of trail all year long on their own schedule. In return, adopters are recognized with a sign and photo, marking their spot.

Arranging a special event on school grounds also provides motivation for getting the area in good shape. In fall of 2005 Frey Elementary was honored to host the statewide Outdoor Classroom Symposium sponsored by the Environmental Education Alliance of Georgia. More than 250 teachers, non-formal educators, and volunteers visited the school to attend workshops in Frey's outdoor classrooms, trails, and gardens. To prepare for the big event, Frey faculty and volunteers spent weeks scrubbing benches, resurfacing trails, nailing boards, and spiffing up the nature area. The result was not only a campus ready to greet the world, but — more importantly — one in prime condition for student use. Fortunately, it doesn't take a special event of this magnitude

The process is messy, flawed, and challenging. But to build outdoor classrooms and provide field study kits without asking teachers for ideas or input would almost guarantee that they are never used.

to motivate volunteers. Simpler annual affairs can have the same effect. For example, every spring the third grade teachers at Frey stage Simply Science Day, when children rotate through outdoor learning stations to review science concepts learned during the year. Setting up these learn-

ing stations forces teachers and volunteers to make sure the outdoor classrooms and field study kits are in good order.

Documenting how things work (and why) also provides continuity for volunteers and contributes to sustainability. The Frey *Adopt a Spot Handbook* provides history, photos, and instructions on caring for each outdoor classroom, garden, trail, and corner of the nature area. Binders with directions for "How to Stage 'Simply Science Day,'" "How to Conduct a 'Rivers Alive' Stream Clean-Up," and "How to Coordinate a Work Day in the Nature Area" help volunteers avoid reinventing the wheel each year.

Thanks to a supportive school administration, it has been possible to bring new teachers up to speed and keep veteran teachers in the loop with an outdoor education orientation each year before school starts. PTSA and grant funds have made it possible to send teachers to environmental education conferences and professional development workshops. Major changes in the state curriculum recently made some of the field study kits obsolete, but at the same time provided an opportunity to involve more teachers in the process of adapting, reusing, reinventing, and creating new field study kits.

More than 50 schools have contacted Frey for assistance in building outdoor classrooms and replicating the field study kits. Most have hoped they could construct identical outdoor classrooms, copy each field study kit exactly, and have similar results. What they do not count on is that the program is not as portable as the process is. And the process is messy, flawed, and challenging. But to build outdoor classrooms and provide field study kits as a *fait accompli*, without asking teachers for ideas or input, would almost guarantee that they are never used. Teachers are much more likely to buy into outdoor education if they are asked about their perceptions, needs, and priorities before a program is put into place. Also, it is more desirable for an outdoor education program to be site-specific and take into account all the assets and limitations of a specific location. For this reason, schools that would like to have an active outdoor education program may find inspiration from Frey, but would be better off to create their own program elements than to slavishly recreate all the same facilities or lessons.

After ten years, Frey Elementary's outdoor education program has still not "arrived." It is a work in progress, full of flaws and unfulfilled goals. High on this year's priority list is adapting field study kits to match newly adopted state science standards. There is an ongoing effort to create an assessment rubric for each kit and to develop incentives to reward those teachers who provide students the most opportunities for inquiry investigations. Volunteers hope to expand the school's outdoor education Web pages, capture the lessons from field study kits on disc so they can be more

easily used and shared, and produce an outdoor education newsletter for teachers. Activities are being developed for a newly created Discovery Lab. And every time teachers and volunteers attend an environmental education conference, they come back overflowing with new ideas.

These challenges and changes are not unwelcome: they are what keep outdoor education alive. So stop by Frey if you are ever in north Georgia: feel free to walk the trails, look through the field study kits, and glean ideas for starting an outdoor education program. Or, better yet, share your best ideas and tips with the folks at Frey. They are always willing to learn.

Karan Wood has worked with teachers, administrators, students, and volunteers at Frey Elementary School in Acworth, Georgia, to help create the school's outdoor education program. For more information about the program, contact Joyce Picket, Principal, Frey Elementary School, 2865 Mars Hill Road, Acworth, GA 30101, (770) 975-6655.

Notes

1. Kits and instructions for making the Flip Flop BenchTable using your own lumber are available at <www.2x4basics.com/Flip-Top-BenchTable.asp>.
2. Using the environment as the integrating context for learning, known as the EIC Model, was developed by the State Education and Environment Round Table. For further information, see <www.seer.org>.

Simple Outdoor Classrooms on a Shoestring Budget

Cable Spool Chic

Obtain six to eight free cable spools from your electric or phone company, to use as tables. Tip the spools onto a flat side and select ones that are the right height for children to work at while standing (or choose shorter spools and make seats from five-gallon buckets, often discarded at construction sites). Screw scrap pieces of pressure-treated lumber onto the bottom surfaces of the spools as feet, to keep the spools from rotting. Sand the top surface and paint the whole thing with "oops" paint — i.e., paint that was mixed wrong, often available discounted or free from home improvement stores. If the outdoor classroom is in an open, sunny area, purchase a colorful beach umbrella for each table and insert in the spool's center hole. Warehouse clubs carry tilt-top umbrellas for \$10–\$15 each. Total cost: less than \$100 (umbrellas and paint). Time to complete: less than one day.



Convertible Bench-Tables

Assemble six converting bench-tables, using your own two-by-four lumber (nine eight-foot lengths) with kits containing hardware and pre-fabricated legs (see, for example, the Flip Flop BenchTable at <www.2x4basics.com/Flip-Top-BenchTable.asp>). Arrange the benches in a semicircle for class discussions, or flip the bench backs up and lock in place as tabletops on which students can write or conduct experiments. Total cost: approximately \$50 per bench-table, or \$300–\$400 per outdoor classroom. Time to complete: less than one day.

Weather Station

Install two or three pre-fabricated, six-foot sections of picket fence (available from any home improvement store) in a straight line or 'U' shape, and anchor them in the ground with quick concrete, poured dry into the post holes. (Ground moisture will set the concrete). Attach large weather instruments such as a barometer, thermometer, and anemometer. Invite classes to make and add other instruments such as windsocks and pinwheels. Total cost: less than \$100. Time to complete: less than one day.

Portable "Anyplace" Outdoor Classrooms

Outdoor classrooms do not have to be structural. Consider the advantages of these simple approaches:

Rag Rug Retreat: Obtain washable rag rugs from any dollar or discount store (one per child) and carry them outside to create an instant outdoor classroom, wherever you please. Need writing surfaces? Have each student use a clipboard. Cost for rag rugs: \$1–\$2 per child; approximately \$30 total.

Bucket Brigade: Purchase or seek donations of five-gallon buckets with lids (often used in construction for paint or drywall compound), one per child. Remove the elastic cord from the underside of the lid, place a piece of foam on the top of the lid, cover the foam with a colorful bandanna, wrap the bandanna over the edges of the lid, and secure the fabric underneath by replacing the elastic cord in its groove. Voila! Each student now has a container for carrying supplies, which doubles as a comfortable seat. Cost for the Bucket Brigade: approximately \$6 per child, unless buckets are donated by home improvement stores or scavenged from construction sites.

Other Types of Outdoor Classrooms Worth Considering...

Gazebos: Large pre-fabricated gazebos with bench seating for an entire class can often be delivered to your school on a flatbed truck, slid from the bed, rolled atop PVC pipes to a desired location, and leveraged into place. A little like building the pyramids, this process is a veritable refresher course in simple machines! Cost: approximately \$3,000–\$6,000 for a 9-by-12-foot model.

Amphitheaters: Permanently mounted bench seating is the least flexible option for an outdoor classroom, but allows for large groups of children (perhaps a grade level or an entire school) to sit together for presentations.

— by *Karan Wood*