Think Outside the Classroom!

When one thinks of all the different “outdoor classrooms” seen through the years, one can certainly say that no two are alike. They are spaces around a school or community that range in size, scope, maintenance, creativity, color, texture and planning. They can be as varied as a garden for wildlife like butterflies, a wigwam construction area, a fish pond or an outdoor art gallery. Others consist simply of a tree outside a schoolroom window, an un-mowed area on the edge of a soccer field, a circle of stumps under a big oak tree, or a patch of grass in front of a school. In an outdoor classroom, nature provides the furniture, the artwork and the inspiration.

Whatever an outdoor classroom space looks like, what matters most is how it is used by both teachers and students. For teachers, an outdoor classroom may be a tool that provides opportunities to develop skills, concepts, objectives and outcomes introduced in textbooks. For students, an outdoor classroom may be a space that provides opportunities to gain a deeper understanding of their local community, both natural and built, their interconnectedness with it, and the responsibility they have as a part of that community.

Developing an Outdoor Classroom to Provide Education Naturally (University of Tennessee Extension), sums it up well: “Outside every school building exists a blossoming world of ‘natural studies’ with all types of structures that can do a better job of teaching than video tapes and computers, as children often learn best by ‘doing’.”

Growing Plants and Harvesting Knowledge: The Conant School Garden

By Ruth Smith

In recent years, school gardens have received renewed attention. There is good reason for that, since gardens can be a wonderful tool for teaching children about where their food comes from, what it takes to grow it and how different fresh food tastes from the processed, packaged and promoted food that is a major component of the American diet. Beyond the obvious connections to food and health, gardens provide a way for children to be outside and can be a wonderful way to integrate any curriculum topic, including math, science, ecology, language arts, history and more.

One place where that is happening is at Conant Elementary School in Concord, N.H. The Concord

CONANT SCHOOL continued on page 2

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Young gardeners at Conant School plant corn seeds.
Cooperative Market, with support from the school's Parent Teacher Organization, has launched an ambitious school garden project there. As the Co-op's Outreach Coordinator, I facilitated the project and guided them through the process. Before the project began, I was determined to address the seasonal challenges of school gardens – how to maintain the garden during summer vacation and provide follow-through from planting to harvesting with different grade levels.

The Conant School fourth-grade curriculum examines plants in the spring. Fifth graders study Native Americans in the fall. To bridge these themes, a “Three Sisters” garden was designed. This technique of companion planting is based on an ancient Native American tradition of growing corn, beans and squash in the same area. These three plants benefit from each other. The corn provides a structure for the beans to climb on; the beans enhance soil fertility; and the squash vines shade the soil to maintain soil moisture and reduce weed competition. Plant varieties with longer growing seasons were chosen, so they could be harvested in the fall when the students returned to school.

Last spring, I met weekly with the fourth-grade students. They learned about various aspects of gardening, plant growth and the importance of caring for the environment as the source of our food. The students explored the history of corn and cultivation, seed characteristics and development, compost and soil structure, pollination and plant needs. The children enjoyed many hands-on activities and loved being outside. The fourth grade teachers appreciated that their students could apply new math skills to measure the garden beds and determine the area and distance for their plots and plants. Each lesson called for cooperation and teamwork, as the students treated the plants, the earth and each other with respect. Students and parent volunteers also gained gardening skills, including the proper use of tools, planting, tending and insect identification.

During the summer, students, their parents and other community members volunteered as “garden tenders.” They plucked weeds, removed insect pests, watered and nurtured the plants through a challenging growing season. A local Master Gardener shared a great deal of expertise, time and effort, which enhanced the educational and vegetative aspects of the garden.

When last year’s fourth graders returned as proud fifth graders, they were eager to harvest the garden. Each class picked and dried the vegetables and learned about historic food preservation. The corn was ground into flour with traditional methods. All of the produce was used to make food for an annual Native American Pow-wow celebration at the end of their unit. Throughout the seasons, the children saw food grow from seed to sustenance.

Several parents reported that after working on the school garden, their children came home eager to plant a garden at home. “Gardening activities are fun,” said one student. “It’s not just dull, dirty and boring!” The garden project helped plant seeds of knowledge and enthusiasm among the students. That’s certainly a harvest worth celebrating.

Ruth Smith can be reached at: ruthnaturally@myfairpoint.net.

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**Activities Related to Articles in this Issue**

**Project WILD suggests:**
Students have the opportunity to practice their observation skills, both indoors and outdoors, in *Learning to Look, Looking to See.*

In *Thicket Game,* students simulate being predator and prey outdoors in a thicket or other vegetated area.

In *Water Canaries* (WILD Aquatic), students use a variety of sampling equipment to collect macro-invertebrates in a stream or pond; they identify and draw specimens before making conclusions about water quality.

**Project WET suggests:**
From WOW! The Wonders of Wetlands:
In *Wet ‘n’ Wild,* students collect and observe wetland animals and create a field guide to describe the living and nonliving components of wetland habitats.

In *Tracking Plants and Keeping Track,* students identify wetland plants using quadrants and transects to inventory a local wetland site. They also prepare herbarium specimens for later comparisons.

In *Helping Wetland Habitats,* students choose from a variety of projects, including wetland plantings, creating a pond and enhancing habitat for birds and wildlife.

**Project Learning Tree suggests:**
There are many PLT activities that lend themselves to exploring and taking advantage of the schoolyard. These are just a few:

In *Schoolyard Safari,* students practice their observation skills as they explore their schoolyard for signs of animal life and discover ways their school environment provides suitable habitat for animals.

In *Poet Tree,* students use their schoolyard for inspiration as they express their thoughts, values and beliefs about the environment in creative ways.

Adopt a Tree provides students the opportunity to follow a tree in their schoolyard through the seasons, investigating different aspects of the tree and developing an appreciation for the relationship between the tree and its environment.
Spotlight on...

Bicentennial Elementary School’s Outdoor Classroom

It’s hard to believe that the outdoor classroom at Bicentennial Elementary School in Nashua, N.H., has been in existence for just over a year. Now in the process of becoming an integral part of the school, this outdoor learning space is the creation of a group of dedicated teachers, parents and community members and an enthusiastic group of young learners.

The project was conceived after interested PTO members asked school staff if there was a need for an outdoor classroom to help improve student learning at the school. They were especially interested in enhancing science teaching, which soon would be the focus of statewide testing. A staff member attended a Project Learning Tree (PLT) workshop, and her enthusiasm spread to the school’s administration. After inquiries into how PLT could become a part of the curriculum, the school applied and was accepted as a partner in the Connecting Schools to People and Place (CS2P) program. CS2P is designed as a partnership with a single school to provide sustained professional development for teachers in order to improve their skills and knowledge in environmental education and to build the study of the environment into the core subjects for learning, both in and out of the classroom. A top priority on the list of possible projects was establishing an outdoor classroom.

Bicentennial’s outdoor classroom was designed to be used by teachers and students of all disciplines. Plants were chosen to attract wildlife, and small spaces were designed and created for specific purposes. The classroom includes a pergola, or arbor, with trellised vines for screens. There is also a butterfly garden, a bird viewing area and a reading garden. A water feature is currently under construction.

After a very busy spring, the outdoor classroom was dedicated at a ceremony on a beautiful June day in 2008. Among the invited guests sitting beneath the newly built pergola were New Hampshire Governor John Lynch and Nashua Mayor Donnalee Lozeau, several Nashua City Aldermen, N.H. State Representatives, the Superintendent of Schools and representatives of the Nashua School Board. The strong recognition and support by the adult community helped give students a sense of accomplishment and pride in their project. Guests were treated to songs, poetry and tours by the enthusiastic students who had contributed their ideas and artwork and had gotten their hands dirty building the outdoor classroom. As the PTO co-chair at the time, Sue Murphy, noted, “There is not one student in this school who has not been thoroughly immersed in this project.”

Today, groups of students from each grade level are often found in the gardens exploring the pathways, documenting their observations, weeding and investigating, all the while surrounded by the sounds, smells and sights of nature. Art classes spend time outside for inspiration and to explore shapes, textures and colors. After school, students are often seen proudly taking their parents for tours of the area.

With an outdoor classroom in their own schoolyard, teachers at the Bicentennial Elementary School have ready access to an outdoor space to help them reach their educational goals.

Above: Third grade students at Bicentennial Elementary School water their plantings as they help build their new outdoor classroom in May 2008.

Right: Governor Lynch congratulates Bicentennial students for a job well done.

A staff member attended a Project Learning Tree (PLT) workshop, and her enthusiasm spread to the school’s administration.

Lozeau, several Nashua City Aldermen, N.H. State Representatives, the Superintendent of Schools and representatives of the Nashua School Board. The strong recognition and support by the adult community helped give students a sense of accomplish-
Scott Semmens, a science teacher at Hopkinton High School, knows that it is an important part of his job as an educator to instill both a sense of awe and responsibility for the natural world in his students. With some thoughtful planning and creativity, Scott is doing just that as he uses the natural areas in town as an integral part of his science curriculum. Those areas are literally his outdoor classroom.

Semmens teaches two field-based courses at Hopkinton, including Environmental Studies, and GIS & Natural Resources Management. Students in these classes spend the majority of their class periods throughout the year outdoors at one of the many public natural areas in Hopkinton and Contoocook. The students begin their year by honing their observation skills. As they become more practiced observers in the outdoors, they experience first-hand the diversity of habitats within a few miles of their homes. Through their study of forestry, wetlands, vernal pools, wildlife ecology and birds, students come to a deeper understanding of their environment that reaches far beyond what they could find on the pages of a book.

Through the years, Semmens has observed that there are fewer and fewer kids with experience in the outdoors. Some of his students have a wide range of experiences in the outdoors; others have next to none. Semmens addresses that challenge by offering his students in-depth opportunities to connect to their local natural areas while developing lifelong skills and gaining a deeper appreciation for the world outside the classroom walls.

Semmens is realistic about the challenges and constraints faced by educators who aspire to bring students into the outdoors for learning. He limits the size of his outdoor-oriented classes to sixteen to ensure students will have safe and meaningful experiences. He is fortunate to have access to a small school bus owned by the school that helps keep travel costs to a minimum. He is also fortunate to have support from the administration, as well as members of the community who believe in the value of students practicing science in the field.

Once transportation and safety factors are covered, costs of learning outdoors can be kept to a minimum. While some basic gear such as digital cameras, GPS units and a variety of tape measures are important, most of the supplies needed for the classes are low cost. Semmens has his students keep journals, as well as digital records of their field work.

Documentation skills are important when collecting scientific data. Students compile the data in a way that can be built upon in subsequent years. Ultimately, the data collected by students is combined with state GIS data to create maps using GIS software. Students are creating a natural resource inventory that can be analyzed and that leaves room for further research and inquiry with future classes. Some students are working on building a map server online at the school to enable them to make data and maps available to the public.

The outdoor experiences are not just limited to elective science courses at Hopkinton High. Each year for the past seven years, Semmens and his colleague Rick Welch have taken groups of students and provide opportunities to develop a multitude of skills.

NH Children in Nature Coalition Is Building Nature-Based Communities

In October, 150 people gathered in Northwood to learn, play and plan for reconnecting children, youth and families with nature. Workshops provided ideas and tools teachers can use, from school gardens to nature quests, playground design to land trust partnerships, Natural Leaders for teens to Growing Up WILD for preschoolers. Lively conversations in regional break-out sessions generated lists of actions to further this initiative. Missed the conference? You can still connect with people in your community to learn from their experiences and share in this grassroots network. Visit: www.NHChildrenInNature.org.
For nine years, New Hampshire students involved in the Kids for Karners Program have worked to enhance habitat of the Concord Pine Barrens for the federally endangered Karner blue butterfly by planting wild blue lupine. Students, primarily from the Concord School District, raise the lupine from seeds in their classrooms and transplant it each spring on the U.S. Fish and Wildlife Service (USFWS) Karner Blue Butterfly Conservation Easement adjacent to the airport in Concord. Wild blue lupine leaves are the sole food of Karner blue butterfly larvae.

The Kids for Karners Program, initiated in 2001 by the National Wildlife Federation, is now a partnership that includes the USFWS, N.H. Fish and Game and the Concord School District’s Project S.E.E. The program focus is a classroom and conservation project designed to increase available host plants for the butterflies on the easement, while engaging students in learning about and helping to restore an endangered species in their home town. As lupine seeds grow through the spring in the classroom, students learn about butterfly ecology and life cycles, the important relationship between Karner blues and their host plants, the ecology of the Concord Pine Barrens and the concepts of endangered species, habitat and conservation.

The project, which began with just four classrooms, has grown steadily each year to involving thirty classrooms. Hundreds of students in grades K-7 and high school have cared for their own wild blue lupine plants and transplanted more than 1,000 seedlings onto the easement. On designated planting days each spring, staff from the organizing partners, along with local volunteers, assist students with the on-site planting, which gives students an opportunity to apply what they have learned in the classroom to a real-life situation in their own community. Planting day is a time for the students to feel good about their contribution to conserving the natural areas where they live. The students’ actions have helped Fish and Game implement a key component of their habitat management plan for Karner blue butterflies, inspired the local community, generated positive local press and raised awareness about Karner blue butterflies in the Concord area.

Fish and Game wildlife educator and Kids for Karners co-coordinator Marilyn Wyzga has been actively involved in the program since its beginning. From presenting teacher training workshops and coordinating on-site plantings in the schools to coordinating planting days, Wyzga is amazed at the enthusiasm of the students. “It’s such a powerful tool for them,” she said. “The program started out as an educational experience; but long term, the kids have been really making a difference for the butterflies.” Thanks to the students’ efforts, there are probably now enough lupine plants on the easement to maintain a sustainable population. Since the program’s inception, students have seen the Karner blue population on the easement grow from zero to 3,000.
If you want to incorporate pond ecosystem studies into your curriculum or study water with your students, but don't have a local water body within safe walking distance, you may want to consider creating a water feature in your schoolyard.

Water features, such as ponds and waterfalls, can be a great way to get your students to learn outdoors. Most children are naturally drawn to water. It is calming, and you never know what can be seen within its depths!

Ponds, waterfalls and bird baths are all terrific locations for studying science, math, reading, writing, social studies and art. Water has inspired the world’s poets and artists for millennia. Now, many scientists focus their studies on water – after all, three-fourths of the earth is covered with water and it is called the “Water Planet.”

Where do you start? Your school’s water feature can be large or small, with running water or standing water. It can be a haven for wildlife or simply a place to sit and reflect. The choice is yours.

One option is to participate in the North American Water Garden Society’s “Ponds for Kids” program, sponsored in New Hampshire by Chester Hollow Water Gardens. Based in Chester, N.H., and run by Charlie and Wendy Holland, the company offers free labor to schools in the program by calling on local landscapers for help. Schools either raise funds for the materials or get materials donated. Chester Hollow Water Gardens has already installed two schoolyard ponds, one in Chester, and one in Londonderry, and is preparing to install a pond-less waterfall at Bicentennial School in Nashua.

In May 2009, the South Elementary School in Londonderry constructed a pond in the school’s courtyard. Third-grade students carried stones to help the volunteer landscapers complete the project. The Hollands found seven other landscaping companies to help construct the pond. It was truly a community effort! The students are now all invested in the pond and look forward to using it in their classes.

A major focus of the Ponds for Kids program is involving students in the design and construction of a water feature at their school. The thought is that kids will have greater respect for the their water body, and others, if they participate in building it.

If there is concern that a pond on school grounds would be a safety hazard, note that there are ways to minimize the danger of having an open-water feature:
• Locate it in an area that is not easily accessible to students, such as a locked courtyard.
• Install an underwater mesh net to serve as a safety net.
• Install large rocks to make the water shallower. (Addition of rocks will also provide habitat for aquatic organisms.)
• Place signs around the pond to warn about hazards and teach students about water safety.
• Install a pond-less waterfall!

The Bicentennial School staff in Nashua was hoping to create an outdoor classroom with a water feature, but the risk management team prohibited adding open water to the site. Instead, school staff is working with Chester Hollow Water Gardens staff to build a pond-less waterfall, which will be the first one installed through the Ponds for Kids program in New Hampshire.

To find out more about the Ponds for Kids program, contact Wendy Holland at (603) 887-7874 or visit the North American Water Garden Society’s website at www.nawgs.org/educate/ponds_for_kids/index.php.

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**Fall 2009 WEB Resources**

- National Gardening Association: www.kidsgardening.com
- NWF Schoolyard Habitats Certification Program: www.nwf.org/schoolyard
- Boston Schoolyard Initiative Handbook: www.schoolyards.org
- Milton Schools (Mass.) Outdoor Classroom www.miltonoutdoorclassrooms.com
- Learning by the Yard, Schoolyard Consultants: www.learningbytheyard.com
- Master Gardener Program, UNH Cooperative Extension: http://extension.unh.edu/agric/agmastgd.htm
- Outdoor classroom online: www.in.gov/dnr/files/OutdoorLabRevised0604.pdf
Just a year ago, the back schoolyard at Peter Woodbury School in Bedford resembled a vast desert: an open expanse of dirt with a single tree, uninviting to children or wildlife, encircled by a chain link fence that squeezed out the surrounding woodland. Now all of that has changed, thanks to a community effort overseen by a dynamic school team, working to create a Community School Yard that encourages natural and creative play, enhances imagination and generates real-life learning experiences through natural exploration and curriculum connections.

Beginnings

The seeds of change were planted at Peter Woodbury 15 years ago, when Leslie Fredette led an effort to enhance the school’s west side with a series of curriculum-enriching gardens, one for each grade level. Second grade teacher Connie Roberge, with help from Master Gardener Anne Southwell, initiated the Garden Club to engage students in tending and harvesting. Over time, interest exceeded available space. Shifts in teachers, student population and school needs directed attention around to the school’s east side, with its open parking lots, ball fields and outdated play structure. A “Natural-Scape” forms the foundation, incorporating large trees, a boulder wall and sandpit (where fourth graders now study erosion), a bridge, rotting log, labyrinth, bushes and flowers, and cozy nooks, all connected by a walking path. The Horticultural Gardens support the science frameworks, connected by a walking path. The Horticultural Gardens support the science frameworks, with themes ranging from a Lunch Box garden to indigenous New Hampshire species. Students cultivate, nurture and harvest, gaining an appreciation of where their food

The completed Community School Yard design weaves together 4 components. A “Natural-Scape” forms the foundation, incorporating large trees, a boulder wall and sandpit (where fourth graders now study erosion), a bridge, rotting log, labyrinth, bushes and flowers, and cozy nooks, all connected by a walking path. The Horticultural Gardens support the science frameworks, with themes ranging from a Lunch Box garden to indigenous New Hampshire species. Students cultivate, nurture and harvest, gaining an appreciation of where their food

students with natural, experiential learning. So, the team invested in a Project HOME “Homes for Wildlife” training, including inventory, mapping and planning. They helped other teachers embrace the outdoors as a learning space by making it relevant to their curriculum. Students built models and drafted a wish list.

The Bedford Education Foundation (their first donor) paid the way for Mindy, Anne and Connie to attend the 2008 Youth Garden Symposium. Of the many ideas that sparked their interest, one really ignited: to collaborate with a technical school for the design of their outdoor space. The team quickly partnered with the NH Technical Institute (NHTI) landscape design program. NHTI students surveyed the schoolyard and found that the school owned the woodland – including a 48-inch diameter white pine – beyond the chain link fence. They brought the wish list to life with their creative designs.

As the team set about to prepare the budget for their project, the notion of successful fundraising in this troubled economy seemed daunting. Generosity became the underlying theme: gifts of time, in-kind donations and physical labor, as well as financial contributions. Excitement brought together diverse people from around the community through fundraising, digging, building, grant-writing and all the other jobs necessary for a task of this size. The gathering energy and dollars multiplied. “Oh, how our school families have contributed; supporting our many school fundraisers; purchasing bricks, sweatshirts, cookbooks, and participating in our now famous Shrub-a-thon,” Mindy Beltramo said at the recent ribboncutting ceremony. “Our students have gathered pennies from the floor boards of their cars. They have donated lemonade stand proceeds and allowance money that has been saved all year. Some have even collected donations at their birthday parties rather than receive gifts.”

The team designed a logo using student artwork. They created a brochure to broadcast their mission and vision, and clearly outlined how people could contribute. “This project is about COMMUNITY!” the brochure heralds. “Investment in the Community School Yard is a chance to support an opportunity to revitalize the community park idea that has provided so many with outdoor exploration experiences and community connections.” And for extra measure, “Join the fun...there is MUCH work to be done!”

The Design

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comes from. They experience inter-generational learning, gardening with adult and teen community members. A post-and-beam Outdoor Classroom is planned, where the ceiling will be hung with vines and the walls will be open to the surrounding landscape. There, students may gather to recite their poetry during Poetry Month, read quietly, note observations in their journals, or meet with an Audubon docent. For now, the relocated gazebo provides a place to reflect and observe nature. The traditional Big Toy and Ball Fields round out the space, to promote physical and social play through a variety of structural and field activities.

The revitalized schoolyard provides a place for families to connect and reconnect, and for children to delight in the natural world around them. It cultivates authentic educational programming. While the primary pieces are in place, the life of this space has just begun. Red exploration backpacks, each a different natural history theme, can be checked out by students during recess.

Four weather stations will be added to the campus, thanks to the National Weather Association. A future portal through the chain link fence will allow access to the woodland.

According to Richard Louv, “Exposure to nature is essential for healthy childhood development and for the physical and emotional health of children and adults.” The whole Peter Woodbury School community – children, youth and families – now has that valuable opportunity.

The Storybook Cottage shed (shown from concept drawing to finished structure) overlooks the Horticultural Gardens.