

Outdoor Classrooms —Planning Makes Perfect

By Sarah Haines



*Tips for creating a
schoolyard habitat
that will enhance your
science curriculum for
years to come*



Schoolyard wildlife habitats aren't just for beauty and fun—they are outdoor classrooms where real science learning takes place. Schoolyard habitat projects involve conservation and restoration of wildlife habitat; however, the learning doesn't have to stop there—outdoor classrooms can foster many kinds of active learning across the curriculum and provide a creative outlet for meeting national and state standards in several disciplines.

Big or small, urban, suburban, or rural, you can build an exciting outdoor classroom that is appropriate for your school. Read on for suggestions on how to create a memorable outdoor learning space for your students. With any luck, you'll be bringing the outdoors into the curriculum in no time.

Choosing a Project

The first step in a schoolyard habitat project is identifying areas on the school grounds where projects can be done. Habitats should contain food, water, shelter, and places for animals to raise young. Does the site have these features? How much of each feature is present? As you tour the school grounds, consider the following:

- Are there unused areas that can be converted to woodlands, meadows, or gardens?
- Can we expand an area that already exists or connect existing areas with a habitat project?

Next, assess the quality of the existing habitat for wildlife (I recommend using the National Wildlife Federation Schoolyard Habitat Assessment—see Internet Resources). Are there enough food sources? Water sources? Shelter? What is lacking? For example, if food sources are lacking, a good project could be a winter habitat garden filled with native plants that provide food for animals during the winter months. If water is lacking, the project could involve a wetland area or pond. If shelter is lacking, a “No Mow” area could provide tall grasses for animals to hide in.

Of course, habitat projects need not be just for rural or suburban schoolyards with lots of space. Effective habitat projects are possible even with little or no land at all. Planter boxes can be built and hung from windows; bird feeders, bird baths, etc. can be easily hung or placed onto an unused section of the school property; asphalt can be removed and replaced with plants; and rooftops can be converted into school gardens. Even a small amount of green space can be transformed into valuable habitat for both plants and animals.

Outdoor classrooms don't have to be created on school grounds, either. Sometimes suitable habitat is community property. With proper coordination, students can complete various habitat projects at different locations in the community, and the whole community can benefit. For example, students at Tongue River High School in Dayton, Wyoming, created a riverside nature walk in their community, posting signs along the trail that describe its features (Schmaus 2001). Now, anyone who visits the nature walk can now learn more about the ecological components of the park. Similarly, students at Riverside Military Academy in Gainesville, Georgia, became active members of an Adopt-a-Stream program, cleaning

and studying a small creek that runs through their community (Scheman, Frankel, and Davis 2001).

Once the site analyses are finished, you will have a clearer picture of the project that will best meet your needs (for specific project ideas, see *Habitat Projects*, page XX), so go ahead and choose one. Then, spread the word about your choice. Get approval from the school administration, faculty, parents, and other parties, including the school maintenance staff. (Be sure to ask about any construction projects planned for the school in the near future—you wouldn't want to plan your habitat for an area that will be earmarked for an addition!) Hold meetings to explain your project and its academic merit. If there is sufficient support for the project, move ahead to the next step and identify sources of funding or donations in the community.

Finding Funding

Funding isn't usually *too* difficult to find if you know where to look. Many local and national organizations and businesses are willing to contribute dollars and time to these endeavors. And, the project doesn't have to mean a lot of money. You can create a moderately sized butterfly garden or native plant garden with just a few hundred dollars. I

worked with a small private school that created a relatively large habitat area with a native plant garden, native tree plantings, and a 500-ft. nature trail for about \$1,500.

Here are some suggestions for finding funding for your project:

- Ask local nurseries and landscaping companies if they will donate items or sell them at a discount for your project.
- Check your local area for a native plant organization. Often, they will donate money or expertise to assist you.
- See if your school's PTO/PTA will donate supplies or money toward the project.
- Ask parents for help. Do any of your students' parents own a landscaping company? Nursery? Construction company (if you are going to be doing major digging)? If so, they may be willing to donate plants, mulch, or the use of equipment for the project.
- Have students bring in gardening equipment from home to use on your planting day instead of buying equipment to use.
- There are many corporations that want to maintain a "green" image or address issues in the community and may be willing to donate resources or money for your project. For example, with a simple phone call I secured 500 lbs of rocks from a local concrete company to use on a nature trail. In the Baltimore area, Constellation Energy, a power company, has also been very generous in funding environmental projects for schools.
- Seek funding from environmental organizations or community foundations in your area (see Internet Resources for information about environmental education grants).

Maintenance and Safety

Other important factors in a schoolyard habitat project are site maintenance and safety concerns. All too often, a fabulous habitat project disintegrates after one year

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Habitat Projects

The type of outdoor habitat you build depends upon the space available. A large space is not a necessity—habitats can be created to accommodate even a small space. Other criteria for selecting the type of outdoor classroom to build are the needs of the students and the level of commitment school staff and students have to create and maintain the habitat area.

If you can commit to a heavier maintenance load over time (remulching, pulling weeds that sprout up in the path, maintaining signage, keeping undergrowth to a minimum, and so on), a project such as a schoolyard nature trail might be appropriate. If not, projects that require less maintenance, such as small butterfly gardens or native plant gardens, may be more suitable. For those with minimal maintenance time and space, a simple suggestion might be to establish a “No Mow” zone on the school grounds, in which a designated area is left to return to its natural state. This can be a terrific way to demonstrate ecological succession to your students!

Here are a few project ideas to get you started:

- Butterfly or hummingbird gardens
- Bird-feeding stations or nesting boxes
- Rock gardens (great for areas where plants are difficult to grow; such as deserts—the rocks provide shelter for small animals)
- Bat boxes
- Ponds and wetland areas
- Nature trails

because not enough thought was put into maintaining the area over time. Whatever the type and scope of your project, you must have a plan from the beginning that outlines how the area will be cared for and maintained. Most funding agencies will require a description of a maintenance plan in your application.

Here are some things to consider as you develop the plan:

- Who will care for the plants until they are established?
- Who will water plants during the summer?
- Does the custodial staff know not to mow your plants over?
- Who will weed, remulch, rake, clean bird feeders and bird houses, and so on?

Regarding site safety, seek input from all parties (faculty, parents, district officials, community leaders, and so on) about common concerns and resolve them *before* proceeding with the project. Ask,

- How will the site be used?
- What, if any, permits are necessary to build this site?
- If you are creating wetland habitat or including a water feature in your habitat, how will you address concerns about mosquitoes and insect-borne diseases?

The best way to address these issues is by educating the group—and yourself—about the project. Bring in experts

to share their knowledge. Research local mandates regarding building permits. Get advice from other educators who have done similar projects at their schools. If possible, take field trips to other sites to see firsthand how *they* handled these issues. Addressing potential concerns before the project moves forward will save you worry later.

Involving Students

Whatever the chosen parameters of your project, involving students in it from the start is essential. The more involved students are in the planning process, the more ownership they will take of the area when it is completed. They will take pride in having helped construct something so useful and will be more motivated to learn while there.

Involve students in the project as it evolves. For example, have students figure the area of the project site in math class or have them draw a scale diagram of the planting site. You can also make a nice math connection when you begin to formulate the budget.

With regard to site design, students can make a planting design and choose the plants and the locations to plant them. If the project involves erecting bird or bat boxes, have students determine the best locations for them. Students can research information for the project from seed catalogs, local nurseries, and the internet. Or, invite guest speakers to the class who are plant or animal experts.

When their planning is done, have students write a persuasive letter to the principal, PTA, teachers, groundskeepers, or organizations from which you are

seeking funding that convinces the audience that their plan is a good one. In this way, you will be promoting a sense of environmental stewardship among students and incorporating language arts!

Success Breeds Success

It will likely take months—or more—of planning for the project to come to fruition, but eventually the schoolyard habitat will be built. Now you can get around to why you created the habitat in the first place—to enhance students' science learning!

The following two examples describe outdoor successful habitat projects in which I have been involved. Morrell Park Elementary/Middle School is located in Baltimore, Maryland. For the past few years, the school has worked very closely with the Chesapeake Bay Foundation to implement a cross-curricular environmental program. The teachers and faculty decided to create an outdoor classroom using many parts of the school grounds. Each grade in the school was responsible for planning a section of the schoolyard habitat. Throughout each school year, students engaged in a number of activities in which they learned about plant and animal species that would be best suited for the habitat, where to place the plants, which plants to use to attract various wildlife species, and how their work would ultimately improve the environment.

Each year in April, the school held a "Habitat Restoration Day" in which the students created or added on to their outdoor classroom area. In this way the school created a nature trail with an accompanying guidebook and restored a wetland habitat (a section of the schoolyard that was once mowed now contains native wetland plants and a mulch pathway—and an observation deck will soon follow). Students also planted butterfly gardens and placed plants near storm drains to prevent runoff. Over time, the

school has built a superb habitat area for children and teachers to use year-round.

Another school, Hampton Elementary School, located a few miles outside Baltimore, Maryland, also had success with an outdoor habitat. Some years ago, a parent initially suggested planting a butterfly garden in front of the school, with the intent it be a project that her child's grade participated in. However, students and teachers in other grades soon expressed interest, and on the day of the planting, students from each grade helped plant the butterfly garden in a daylong effort.

The project was such a success that now the school is planning to expand their program and create a nature trail on the school grounds as well. Both the butterfly garden and the nature trail will be used by students in all grade levels.

As my experience attests, outdoor classrooms can be a true learning ground for scientists, and I encourage you to build one with your students. ■

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Resources

- National Environmental Education and Training Foundation (NEETF). 2000. *Environment-based education: Creating high performance schools and students*. Washington, DC: Author.
- National Research Council (NRC). 1996. *National science education standards*. Washington, DC: National Academy Press.
- Schmaus, M. 2001. River walk: A community-oriented nature project. *The Science Teacher* 68(5): 36–37.
- Scheman, N., A. Frankel, and B. Davis. 2001. Grassroots environmentalism: Promoting inquiry-based learning through an outdoor education program. *The Science Teacher* 68(5): 38–39.

Internet

- Bat Conservation International
www.batcon.org
- Classroom Feeder Watch
<http://birds.cornell.edu/cfw>
- Environmental Education Grant Information
www.lamotte.com/pages/edu/grants.html
- Kids Gardening
www.kidsgardening.com
- Project Wild: Wild School Sites
www.projectwild.org/index.htm
- The National Wildlife Federation: Schoolyard Habitats Program
www.nwf.org/backyardwildlifehabitat/create_maintain.cfm

Connecting to the Standards

This article relates to the following *National Science Education Standards* (NRC 1996):

Teaching Standards

Standard A:

Teachers of science plan an inquiry-based science program for their students

Standard B:

Teachers of science guide and facilitate learning

Standard D:

Teachers of science design and manage learning environments that provide students with the time, space, and resources needed for learning science