Dreaming of Being Outside

BY KATHRYN L. HICKERSON

During class, Joseph* can be found looking longingly toward the window. How can Ms. Gomez* motivate him or other students who disengage during discussions, or do as little work as possible? Conscientious teachers apply the latest research about learning styles, making every attempt to reach each student for eternity and to offer practical applications that will enable them to understand the curriculum and to achieve success. But recess arrives, and the students scamper outside—delighted to be free. What's so interesting outside the classroom? Can teachers use students' fascination with the out of doors to teach valuable academic and spiritual lessons?

The outdoor learning environment encourages spontaneity, awe, and a sense of hope. The expanse of blue heavens, puffy white clouds, and green grass beckon discovery and provide sensory feedback. The Master Teacher realized this when He created a garden as the first learning environment (Genesis 2:15). Much of Jesus' ministry on this Earth took place in the open air. "In the growth and development of nature were revealed the principles of His kingdom."[1]

For some teachers, "learning outdoors" means providing a lesson outside the school building or scheduling a field trip to a park or museum. Others try to integrate biblical applications throughout the curriculum to connect students to their Maker. All of these options are worthwhile. But a more comprehensive approach, known as a schoolyard habitat, will achieve more measurable and lasting results.

What is a schoolyard habitat? It requires setting aside part of the school property (or obtaining permission to use a nearby empty lot) where students can explore, discover, search, investigate, examine, problem solve, and seek for answers to curriculum-related questions. "School grounds are the primary environments that provide children a chance to be connected to an outdoor environment on a regular basis. They are unlike any other outside public space because the school environment is totally dedicated to children's use."[2]

Wouldn't you and your students love to have a lush garden classroom? Imagine dirt, sand, logs, water areas, flowers, vegetables, herbs, bushes, and trees that provide a new lesson each day. In addition, the birds, insects, mammals, fungi, reptiles, amphibians, lichens, liverworts, mosses, algae, and worms will provide a wonderful incentive for students to observe and learn. Outside in nature, students will gain new insights, develop their perceptions, begin to wonder, and develop stewardship ideals as they explore God's second book.

A great deal has been published within the past 10 years about schoolyard habitats[3] — and how to create a learning environment that is problem-based, inquiry-based, or project-based and yet includes student-directed learning.[4] One such study spanning several decades was a result of the 1970s busing controversy within Boston's public school districts. Schoolyards had deteriorated, causing the study to compare an upgraded schoolyard habitat with lack of renovations. The comparison study indicated that math scores of 4th grade students improved where the schoolyard habitat was im-

proved. The only caveat was the removal of racial bias.

Other studies have shown that with schoolyard habitats, learning outcomes are improved,[5] and morale is boosted—not only for students, but teachers as well. Allowing the students to participate throughout the planning and implementation of the project will increase their experiential learning. Research and data collection will be realistic and relevant to the math and science curriculum. The Washington School project[6] testifies to the excitement generated when students are part of the planning.

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Seventh-day Adventists have statements from over a hundred years ago that support the effectiveness of using nature for educational purposes. "Children should be encouraged to search out in nature the objects that illustrate Bible teachings, and to trace in the Bible the similitude drawn from nature. They should search out, both in nature and in Holy Writ, every object representing Christ, and those also that He employed in illustrating truth. Thus may they learn to see Him in tree and vine, in lily and rose, in sun and star. They may learn to hear His voice in the song of birds, in the sighing of the trees, in the rolling thunder, and in the music of the sea. And every object in nature will repeat to them His precious lessons."[7]

Planning and Fundraising

Teachers, administrators, and school board members should work together to identify the goals and benefits of a schoolyard habitat. Their active support and funding are necessary to establish and maintain the program. Planned steps for implementation should include teacher training and support, recruiting of volunteers, and creating a timeline that provides a natural progression for development and an overview of the project.

Before the school year begins, raise funds and contact people who can help. Invite landscaping professionals, nursery owners, environmental educators, and community volunteers to donate materials and share their expertise with your class. An Internet search for grants can reveal additional funding sources. College departments of agriculture and governmental agencies can provide contacts and additional resource ideas. Look for regional conferences, workshops, or in-service opportunities when you can network with professionals and other teachers nearby.

Some schools are blessed with acreage they can use for a schoolyard habitat; however, others are located in the inner city, so their outdoor options are limited. But even these schools may be able to find a nearby vacant lot that could be used with permission.

Exhaustive surveys[8] are available for analyzing and enhancing the schoolyard's natural habitat, including wildlife native to the area, available water sources, existing landscape elements such as flowers, trees—rotting or alive—and shrubs. Ideally, the habitat should include seeds, berries, nuts, nectar, and insects, as well as protection from the elements (sun, wind, and rain).

You don't have to wait until all of this is in place, however. Start simple. Ask your students for ideas. Watch their excitement as they think of ways they could learn outside. Add a bird feeder, wildlife and plants native to the region, and a water source. For children who have never observed a bird up close, this could be nothing short of a miracle. It could trigger their desire to learn outdoors. Recording the different varieties of birds, comparing the number of large birds versus small birds, tracing migratory patterns, differences of population, lifestyle, and habitat, experimenting with types of feeders and types of seeds will help students learn the principles of scientific research. Placing the feeder where the students can observe birds from the classroom will add intrigue throughout the day and compensate for times when students can't be outside.

Adding plants to the window area will provide a barrier that reduces the possibility of frightening the birds, while allowing a view of what is happening outside. As a bonus, the plants provide oxygen and absorb carbon dioxide from the air.

Integrating the Schoolyard Habitat Into the Curriculum

An Internet search will provide a wealth of information.

Packaged guides and materials are available, but must be used judiciously. A major proponent of schoolyard habitat, the U.S. Fish and Wildlife Service, suggests beginning with simple strategies, like the addition of logs, water, nesting boxes, and/or feeders just outside the classroom door. Another great resource can be found at http://www.fws.gov/chesapeakebay/school/SYhabit.htm. Projects such as The Edible Schoolyard, and Two Angry Moms[9] were spawned from creativity and integrating curriculum. Discussion forums such as http://www.evergreen.ca and http://www.garden.org/home provide additional resources. Another remarkable resource is the National Wildlife Federation, which emphasizes ecology and recycling, and supports habitat conservation and the use of the outdoors as a teaching tool. Immersion in the local ecology helps students learn about their moral obligation to the planet.

As you plan daily assignments, look for opportunity for students to work and explore outside. "Devise plans to keep them outdoors, where they will become acquainted with God through nature. As they take exercise in the open air, restoration will begin in body, mind, and soul."[10]

The schoolyard habitat lends itself well to individualizing instruction. Children's different learning, social, and movement styles can be accommodated in an environment that has been designed with opportunities for open-ended exploration and hands-on learning.[11] To unlock all of your students' senses and inspire a love for learning, all you need is an outdoor location with a log to sit on, a corner with bubbling water where they can watch flowers or mushrooms grow, butterfly metamorphosis, insect or bird behavior, and death and decay, where they can take reading or research resources, drawing supplies, and journaling materials. Suddenly that child who is dreaming of being outside is inspired to learn.

"Without continuous hands-on experience, it is impossible for children to acquire a deep intuitive understanding of the natural world that is the foundation of sustainable development. . . .A critical aspect of the present-day crisis in education is that children are becoming separated from daily experience of the natural world." [12]

Developing and Expanding Your Schoolyard Habitat

Outside learning spaces can be simple or elaborate. A simple log will encourage exploration and socialization. It is a great spot to sit, as well as a habitat for insects, gastropods, and worms. Thin slices of stump can be used to create a area with "tree cookie flooring," or an innovative walkway. Pathways can become avenues for hiding and chasing games, or for students to walk and discover at their own pace. Tires can be recycled for walkways, climbing structures, edging for play equipment, or a planter bed and gardens.

As you develop your habitat, add water, nesting boxes or birdhouses, and native flowers near the classroom window or elsewhere on the schoolyard to provide hands-on experiences with small animals and insects. Add another feeder a little distance from the building and playground and a bench in a quiet location where students can take notes and reflect on what they have observed.

Planting small gardens with flowers of different colors and size, edible food plants producing above- and below-ground crops, as well as bushes and trees that produce edible fruits will provide students with the opportunity to watch, explore, touch, and experience nature firsthand. They can learn about horticulture in a textbook or encyclopedia, or even research plant growth on the computer—but few have watched the stages from a seed to the production of fruit. Even fewer have observed how weather and other variables affect plant growth.

Other ideas include creating a weather station, planting a wetland, measuring rainfall, and observing the position of the

the sun during school hours. The schoolyard habitat should be planned around the seasons and temperatures in your area. In colder climates, try experimenting with water and ice, measuring snowfall, watching cloud formations, exploring meteorology. Watching the impact of the temperature changes can create learning experiences that are very different from reading about these phenomena in a textbook.

Because seasonal challenges are different for various regions of the world, activities and maintenance needs must be considered when designing the schoolyard habitat. A helpful and easy template is found at: http://www.nwf.org/campusecology/.

Children love to explore and discover the outdoors through play. The schoolyard habitat can provide hands-on learning by incorporating a wooden discovery table with compartments for stones, pinecones, sand, peat moss, twigs, leaves, and shells. Students can sift, pour, mold, and shape the sand, and handle the various items on display. (For sanitary reasons, keep the discovery table covered when not in use.)

Every schoolyard habitat needs a water source. There are many ways to add water—a bird bath is attractive, quick, and easy to add. Placing a container of water in the schoolyard can draw interesting visitors for observation, in addition to the changes that can be observed within the container over time. However, the water should be refreshed at regular intervals to deter undesirable visitors and remove algae. An inexpensive bubbler or fountain with a recirculating pump can add a source of movement that is not only soothing to hear, but also captivating to wildlife. Imagine a student measuring the flow of water, while receiving the therapeutic benefit and the sensory experience. If the climate is suitable, add goldfish or Koi for

RESOURCES

Websites

"Creating and Sustaining Schoolyard Wildlife Habitats: A Student Action Plan"
http://web.stclair.k12.il.us/splashd/SchlHabUnit.pdf

NWF Guide to Schoolyard Habitats
http://www.nwf.org/schoolyard/

Wildlife Habitats on School Grounds
http://www.ecoschools.com/Wildlife/Wildlife_wSidebar.html

Habitat Gardening (Look down the page, the second section is about schools)
http://www.charmeck.org/Departments/LUESA/Solid+Waste/PLANT+Program/School+Habitat+Learning+Series.htm

Schoolyard Habitat Program
http://www.cbf.org/site/PageServer?pagename=edu_bra_sap_schoolyard

Creating Your Own Outdoor Classroom (From the National Arbor Day Foundation)
http://www.arborday.org/explore/classroom/customclassroom.cfm

The Connecticut Schoolyard Habitat Network
http://www.ctwoodlands.org/shn.html

Maryland Schoolyard Habitat site
http://www.maeoe.org/habitat/

Schoolyard habitat design
http://www.azgfd.gov/i_e/ee/resources/books/schoolyard_habitat.pdf

Green Teacher
http://greenteacher.com

Campus ecology
http://www.nwf.org/campusecology/

What is a schoolyard habitat, why, and funding options
http://www.bbg.org/gar2/topics/essays/2000wi_schoolyards.html

Gardening for kids
http://www.kidsgardening.org/kgn-current.html

Take a Child Outside Week
http://takeachildoutside.org

Books

Designing Outdoor Environments for Children: Landscaping School Yards, Gardens and Playgrounds by Lolly Tai, Mary Haque, Gina McLellan, and Erin Knight (McGraw-Hill, 2006).

Schoolyard Rhymes: Kids' Own Rhymes for Rope-Skipping, Hand Clapping, Ball Bouncing, and Just Plain Fun by Judy Sierra (Alfred A. Knopf Books for Young Readers, 2005).

School Zone: Learning Environments for Children by Anne P. Taylor/George Vlastos (Van Nostrand Reinhold Company, 1975).

Books for Students

(available from Amazon.com)
If I Were a Tree by Dar Hosta
Mother Earth and Her Children by Sibylle Von Olfers
The Runaway Garden by Jeffery L. Schatzer
Elizabite, Adventures of a Carnivorous Plant, by H. A. Rey, recently re-released in paperback by Houghton Mifflin Company.

color and interest. In colder climates, use containers that can be moved inside the classroom.

You may want to include a rain barrel in your schoolyard habitat. Collecting water to supplement gardening projects or providing a water source for wildlife will be a new experience for students in urban areas. Adding water plants, a fountain, and vibrant-colored fish will imbue even the smallest areas with discovery and intrigue, while adding a touch of nature at a relatively modest price. However, caution should be used if poisonous snakes are native to the area, or there are other small animals/insects that could be dangerous to children.

A container garden can supplement the learning environment and teach about recycling if you incorporate items such as boots, wagons, old tires, various sized pots, kettles, baskets, and jars creatively decorated during art class. From flowers to vegetables, wild grasses to trees and shrubs, innovation and student-directed learning will flourish.

Elaborate aquatic areas, covered pavilions or porches—the possibilities are limitless. In Sweden, teachers, students, a landscape architect, and an artist created a space containing "large-scale percussive instruments built on wooden frames—a pine marimba, a set of chimes, aluminum xylobars, and a set of gongs."[13] Thus, music became a source of enjoyment during recess, and classes could be held outside.

You can also arrange straw bales, logs, bricks, and other natural materials to create seating and gathering areas to facilitate both intimate discussions and group projects. If your school has ample parking space, consider building a tiered seating amphitheater that can serve as an outdoor classroom and performance arena. Students can create poetry outdoors and practice projecting their speaking voices. If the school has a paved area, students can use chalk to create artwork, journal about their day, and practice spelling words, handwriting, or math facts.

Dreaming of being outside can become a reality for students and teachers! But don't be discouraged if you can't accomplish all your goals immediately. It takes time to discover what is best for your habitat, your teaching style, your students' interests and ability, and the school budget. However, your students will benefit now—and throughout their lives.

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* Pseudonyms.

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NOTES AND REFERENCES

1. Ellen G. White, *Counsels on Health* (Mountain View, Calif.: Pacific Press Publ. Assn., 1951), p. 163.

2. Sharon Stine, *Landscapes for Learning* (New York: John Wiley & Sons, Inc., 1997), p. 193.

3. R. J. Marzano, *What Works in Schools: Translating Research Into Action* (Alexandria, Va.: Association for Supervision and Curriculum Development, 2003); Jonah Lehrer, "How the City Hurts Your Brain. . . And What You Can Do About It," *Boston Globe* (January 2, 2009): http://www.boston.com/bostonglobe/ideas/articles/2009/01/04/how_the_city_hurts_your_brain/.

4. "Learning in the Real World," *The Edible Schoolyard* (Berkeley, Calif.: 1999), p. 17.

5. See http://www.maeoe.org/resources/research/; *Schoolyard Learning: The Impact of School Grounds* (Newton, Mass.: Educational Development Center, 2000).

6. Robin C. Moore and Herb H. Wong, *Natural Learning, Creating Environments for Rediscovering Nature's Way of Teaching* (Berkeley, California, 1997).

7. Ellen G. White, *Child Guidance* (Nashville, Tenn.: Southern Publ. Assn., 1954), pp. 46, 47.

8. "Guide for Evaluating Your Schoolyard": http://www.fws.gov/chesapeakebay; Moore and Wong, *Natural Learning, Creating Environments for Rediscovering Nature's Way of Teaching*, op cit.; http://pdf/habitatguide.pdf.

9. http://www.angrymoms.org/index.html; accessed November 25, 2008.

10. Ellen G. White, *Medical Ministry* (Mountain View, Calif.: Pacific Press Publ. Assn., 1932), p. 232.

11. Thomas G. David and Benjamin D. Wright, *Learning Environments* (Chicago: The University of Chicago Press, 1974), p. 94.

12. Moore and Wong, *Natural Learning, Creating Environments for Rediscovering Nature's Way of Teaching*, op cit.

13. Cheryl Wagner, *Planning School Grounds for Outdoor Learning* (National Clearinghouse for Educational Facilities, May 2000).