

Where the Wild Things Are

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Using Nature to Build Living & Learning Skills

The man in the red cap with a quilted largemouth bass poking through it is explaining the rules for learning in the outdoors. “Stay behind me when we’re walking,” Mr. Bass tells the third-graders from a South Arlington school. “When we stop, I’ll roll this out”—he produces a purple grosgrain ribbon—“and I want you to stand behind it.”

Snap! Nine-year-old Darrius Hawkins breaks a skinny hickory branch with his hands. Snap! again. Magically, two sticks become four. While Mr. Bass, (aka Neil Heinekamp), acting director of Arlington’s Outdoor Lab, continues to talk, Darrius’s eyes drift to a nearby stream where spotted salamanders have laid hundreds of eggs and tiny brown tadpoles have turned into frogs.

The roughness of tree bark, the gelatinous mass of amphibian eggs, even the tickle of a frog’s legs as it hops across a palm...for most of human history, natural experiences such as these have been as much a part of childhood as food and shelter and scolding parents.

But over the last generation, opportunities for exploration of the natural world—particularly unstructured, playful exploration—have shrunk for many children even as a small but growing body of research shows such contact is important for healthy development. More and more, kids are playing indoors, leaving some experts to wonder whether this may help explain the dips in achievement, conduct disorders, signs of stress and acts of violence increasingly reported among U.S. children.

“Physical experiences are a significant part of brain development,” says Laura Thurman, an early childhood education instructor at the University of Missouri’s Child Development Center. “If we deny children these experiences we should not wonder why they’re struggling in so many other areas.”

One reason nature is such a successful laboratory for learning, social scientists say, is that it virtually begs young children to use their imagination and their hands, to take things apart and put them back together in new ways.

Psychologists call this “complex play” because of the multiple skills it uses, and they distinguish it from structured, rule-based games that require less original thinking.

Free play outdoors involves “almost every competency one can imagine - observing, inventing, problem-solving, decision-making,” says Susan Miller, professor of early childhood education at Kutztown (Pa.) University. It also gives a child endless ways “to try something, fail, and try again.”

Just being outdoors is not enough, however; grass and trees and small creatures are important too. William Sullivan, professor of environmental design at the University of Illinois, sent observers into a large housing development in inner-city Chicago to watch more than 200 children outside. According to his preliminary findings, kids on the blacktop or barren ground tended to stand around and talk, but on plots of ground with grass and trees they played.

For more than a decade educators have said that children learn best when they not only see a concept and hear it explained but also connect it to something with which they can experiment, something that allows them to touch, smell or taste.

Recent studies on the brain explain why this is so: The brain develops first through sensory experiences; later, words and other symbols also become important. “Smells and sights and sounds all become encoded as part of one experience,” says Cosby Rogers, professor of child development at Virginia Tech University.

The more often a young child uses all the senses, the more neurons are fired in his or her brain. Specific knowledge is retained longer when multiple senses are used, according to University of Oregon education professor Robert Sylwester, and the brain’s circuitry becomes increasingly sophisticated and ready to learn more.

Several studies have suggested that nature also has a capacity to help children pay attention. Autistic children, for example, have been shown to become more focused if encouraged to interact with dogs, cats, turtles and other animals. In another

study, the attentiveness of young students in Swedish schools that offered easy access to nature was compared to the attentiveness of students in schools that did not provide such access. The former students had fewer attention problems, according to Stephen Kaplan, professor of psychology at the University of Michigan.

The third-graders from Arlington's Glencarlyn Elementary squat around a battered beige pickup, supposedly watching Mr. Bass demonstrate how a screw works by jacking up the truck's right rear tire. Simple machines are the main lesson this day at the "lab," 200 acres of Fauquier County forest. At this moment, however, Stephanie Miranda is more interested in convincing a twig to stand upright in the hard red clay. A nearby boy hands her a stick that is pointed at one end and she succeeds in planting it. She places an oak leaf banner on top, and nudges her friend. They exchange grins.

In class, old rules about competition and achievement apply. So do divisions along gender lines. Outside, the barriers break down. In their book "The Geography of Childhood: Why Children Need Wild Places," naturalists Gary Paul Nabhan and Stephen Trimble cite a study by Robin Moore, a planner who helped redesign an elementary school playground in Berkeley, Calif. An asphalt playground was modified to include a half-acre of fishing ponds, streams, woods and meadows. Moore then spent time observing how the boys and girls played on both concrete and grass.

Boys and girls were more likely to play together in the natural areas, he reported; the asphalt "generated more conflict and stress, particularly between the sexes." According to Susan Miller, similar observations were made by teachers at an ethnically diverse school in South Texas. The school enlarged its outdoor play area, adding a sand pit and water tables and planting vegetables and flowers. Children were given more time to play outside. "The teachers were surprised at how well the children cooperated," she says.

Author Trimble attributes this cooperative learning partly to the diversity nature presents. "Cone-nosed kissing bugs and star-nosed moles...sharks, fireflies and bats...The endless forms generated by evolution subconsciously reassure us of our own validity," he writes. "No matter that we differ from our peers: Difference is the norm. Understanding difference empowers us to grow and to care."

Natural settings reduce stress and boost mental and physical health among adults, many studies have shown, so it should

come as no surprise that young people experience the same benefits. Yet children's participation in the outdoors is declining, according to the Outdoor Recreation Coalition of America.

Some of the reasons are obvious. Low-income parents keep children inside because it's safer; middle-income parents, because it's safer or more convenient. Television and computers entertain and babysit. When children do venture out, it's often to an organized outdoor function such as soccer, or to an indoor fantasy world such as Discovery Zone, the plastic playground concept that has spread to more than 300 franchised stores in six years.

While growing numbers of elementary schools are encouraging more outdoor learning, too many still keep kids indoors except for 15-minute recess periods, says education professor Miller. That's partly because teachers are not trained in college how to teach outdoors, says Susan Johnson, director of environmental education for the National Wildlife Federation.

As naturalist Michael Link writes in his book "Outdoor Education," "A classroom without walls...creates a picture of unbridled behavior problems, students disappearing over the horizon in defiance and a general nightmare of unanswerable questions and uncatchable kids. The result is that most students receive formal education indoors and must then apply it to the outside world on their own."

Even children's knowledge about the outside world is learned largely indoors, according to Nabhan and Trimble. Nabhan cites a 1992 survey of fifth and sixth graders in which more than half of the children cited the media as their primary teacher about the environment. Roughly one out of three gave school the credit, and fewer than one out of 10 said they learned about the environment mostly at home or in the wild.

Nabhan and Trimble deplore this trend toward vicarious learning, saying children will not retain their knowledge of nor affection for the natural world in the same way that previous generations did.

Environmentalists look at the trend and wonder where future warriors in the environmental movement will come from. Most adults who feel an affinity for the environment developed that regard in childhood, they say. What happens to children who don't have the same outdoor opportunities as previous generations? "What is the extinction of the condor

to a child who has never seen a wren?” asks ecologist/author Robert Michael Pyle in the Nabhan-Trimble book.

Peter H. Kahn Jr., a psychologist, interviewed African-American children in inner-city Houston about their environmental views and found that although they were aware of environmental problems, few believed that Houston was polluted. “Houston is one of the most polluted cities in the county,” says Kahn, who teaches at Colby College in Maine. “How could children who live there and know about pollution not believe it’s there?”

To know that a place is polluted, a child needs to have seen unpolluted places, Kahn concluded. “It is imperative that we get kids out to experience nature, open areas, less polluted states,” he says.

Kahn’s study helps dispel the notion, left from the early days of environmental politics, that nature studies are of little interest to low-income minority groups. True, the Houston children had pressing concerns about having enough to eat and where they could play safely. But they also “showed amazing diversity in the ways they appreciated and were committed to environmental issues,” he says.

Environmentalists, child psychologists and others have advanced several ideas in recent years to increase outdoor opportunities for kids: schoolyard space transformed into natural habitats, parks built close to schools, public transportation provided to parks and park supervision increased.

But such efforts frequently get bogged down in adult debates over budgets and ideologies. School systems that attempt to weave outdoor education into their curricula, for example, sometimes find themselves caught between those who want to encourage kids both to think about the natural world and work on its behalf, and those who believe advocacy has no place in school.

Both camps do agree that children should be exposed to the natural world early and often, and that parents and grandparents are the best exposers/explainers. “It’s important children understand their backyard first and gradually work outward,” says Jo Kwong, an environmental research associate in Fairfax who is a critic of activism in the schools.

Naturalist Nabhan, a father of two, agrees: “We need not

pretend we are bosom buddies with aloof predators...Real attention given to a covey of quail, a swarm of termites, a litter of pack rats will do for most kids I know.”

A couple of days after their visit to the Outdoor Lab, Darrius and three friends sit around a table at school and talk about what they liked about the field trip.

The high points:

“When I touched the frog,” says Joel Velasquez.

“The three turtles,” says Victoria Marcana.

“Holding the snake,” says Daniela Zunita.

Darrius is quiet. He is remembering that moment, near the end of the morning session, when he got a bit rowdy and evoked a strong reprimand from his teacher, Scott Cleveland. At the time he stalked off, and sat on a hillside overlooking a pond.

“I felt sad, like my heart stopped beating,” he recalls later in school. But he says that as he sat there, he imagined swimming in the pond with swift, sure strokes. A few minutes later he was able to rise and join the group.

He remembers that moment too. “I felt happy,” he says, “like my heart was beating really fast.”
