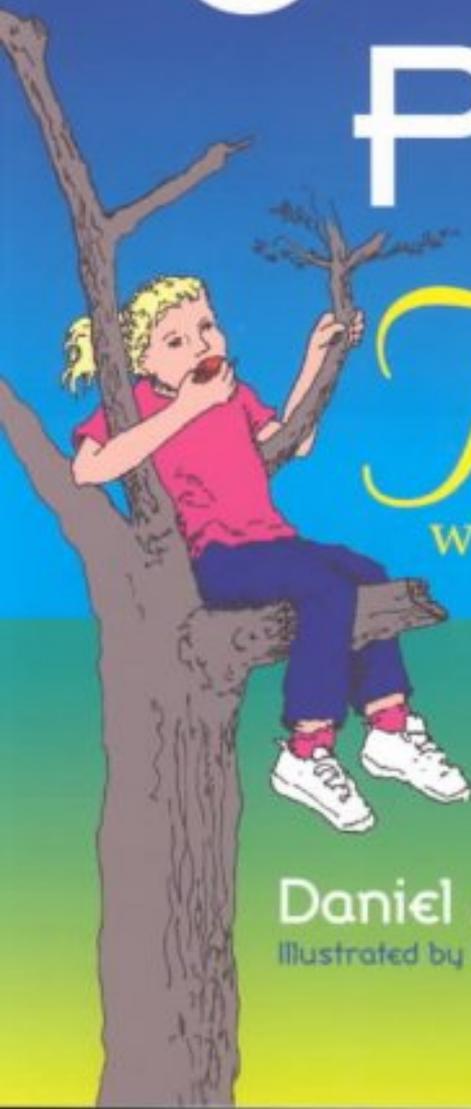


A SENSE of PLACE

Teaching
Children About
the Environment
with Picture Books

Daniel A. Kriesberg

Illustrated by Dorothy Frederick



A Sense of Place



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Dorothy Frederick

1999
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Preface

My third-grade teacher, Mrs. MacFarland, assigned research reports. I do not remember the exact assignment. I do remember cutting Ben Burt's weekly bird-watching column from the newspaper and setting up a bird feeder to watch birds. I was the one doing the research. That is where it all began. I am sure many people can look back and remember a pivotal event in their childhood and thank a teacher for it.

From there, all the elements were in place for me to develop a strong connection to the outdoors. My parents were thrilled that I had an interest. They took me on walks to watch birds. There were trips to a zoo any time we traveled. Just a block from my house was Hookway, a small patch of trees, fields, and a muddy stream. Fifty years ago it was a garbage dump. Then the city grew and the dump was closed. Nature has a way of reclaiming the land if given a chance—the trees returned, and it became my place. I knew the trails, kept a list of every bird I saw, and had names for all the landmarks. There were special places all over. I discovered myself in Hookway.

My adventures took me further as I got older. I backpacked all over the Northeast, southern Utah, and the Sierras. In college, I majored in Environmental Policy and Values. After graduating, I became a naturalist at the Greenkill Outdoor Environmental Education Center. Four years later, I moved on to classroom teaching.

Now I live on Long Island, the last place I thought I would ever live. It has a certain irony for someone so interested in being surrounded by nature. As I have yearned for other places with higher mountains, more trees, and fewer cars, I have also discovered how much nature is right in my own back yard, even in the suburbs. Of course, I still go hiking and backpacking whenever I get the chance. That is not enough. Finding my place here has become essential for my happiness.

These lessons have been developed over 10 years of teaching children at outdoor environmental education centers and in a classroom. As a naturalist, I learned very quickly how important it is for children to have fun and explore the outdoors. A hike was a success when I left with children who had never even been to a forest and returned with the 10 dirty, soaking-wet kids who had just slid down a mountain and played in a stream. I wanted them to fall in love with the woods. Later, we learned facts and figures. I saw it work over and over again, whether the children were from inner-city New York or wealthy Long Island suburbs.

As a classroom teacher, I was afraid I would not be able to teach outdoors. It has taken some time, but I have begun to realize the full potential of outdoor education in the classroom. Classroom teaching has allowed me to integrate environmental education into every subject. Having 10 months instead of a few days allows for a great deal of wonderful teaching opportunities—and a much greater opportunity to see the effects of my teaching.

Becoming a parent has also taught me a great deal about how children learn in the outdoors. How does my three-year-old, Zack, learn so much? By taking risks, exploring everything, getting dirty, and using all his senses. He doesn't always take no for an answer. He can spend 15 minutes playing with a single plant. This intensive study turns the commonplace into a magical source of wonder. There is something new each time we go out. If it works for him, it can work for us.

"Exaltation takes practice."
John Hay

"The first law of environmental education: An experience is worth 10,000 pictures."
Noel McInnis

"In the end, we conserve only what we love. We love only what we understand. We understand only what we are taught."
Babr Dioum Dioum, Senegalese Poet

Acknowledgments

Any project of this kind is not the work of one person. I have been fortunate to work with many wonderful educators over the years. With their help, along with the help of my friends and family, this book was possible. I begin my thanks with my wife, Karen, who has put up with late nights and long rambles as I figured out what to write. My parents, Louis and Lois, and my brother, Joe, have been instrumental as editors, critics, and supporters. I would never have found all these picture books without the help of my school librarian, Chris Well. The librarians at the Bayville Public Library sent in at least 250 interlibrary loan cards so that I could read every book included here, plus all the ones I didn't put in. Vicki Steiner, Lynn Pena, and Stacey Eno, three wonderful teachers, helped with much of the proofreading. I couldn't have developed a program like this without the support of administrators, like Edward Tronolone, Leatrice Green, and JoAnn Grim, who gave me the freedom and the support to go outside and try something new. Thanks go to Nancy and Scott Reichert and everyone else at the Greenkill Outdoor Environmental Education Center, who have shared their ideas with me over the years. I learned many of the activities in this book and more about how to teach at Greenkill than anywhere else.

My thanks also go out to the parents of the students I have worked with for understanding that learning is not limited to the world inside four walls. My oldest friend and backpacking partner, Steve, shared his ecology and editing expertise. Joseph Bruchac took time out of his busy schedule to review the activities related to Native Americans. Jennifer Sahn from the Orion Society helped with the introduction. David Sobel's writing and support provided an important inspiration. Suzanne Barchers at Fulcrum Publishing was instrumental in the development of this idea and in sending it along to Teacher Ideas Press. Thanks also go to Stacey Ennis Chisholm, Susan C. Zernial, and Felicity Tucker, my editors at Teacher Ideas Press. Over the years, I have worked with many children. They taught me that education is more than a one-way street. Finally, I would like to thank my sons, Zack and Scott Walden—they have taught me more about having a sense of place than I ever imagined. This is just the first step in a grand adventure.

Becoming a parent has also taught me a great deal about how children learn in the outdoors. How does my three-year-old, Zack, learn so much? By taking risks, exploring everything, getting dirty, and using all his senses. He doesn't always take no for an answer. He can spend 15 minutes playing with a single plant. This intensive study turns the commonplace into a magical source of wonder. There is something new each time we go out. If it works for him, it can work for us.

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Introduction



Another idea I had for a title of this book was *Creating a Sense of Place with a Sense of Wonder*. To put it simply, a sense of place is the goal, and a sense of wonder is the method. *Sense* is defined in a variety of ways by *The American Heritage College Dictionary*, two of which fit well: "a capacity to appreciate and understand" and "the ability to think or reason soundly." The most useful definition of *place* is "a bounded area." In the *Journal of Environmental Education*, Matt Sanger defines a sense of place as an "experientially-based intimacy with the natural processes, community, and history of one's place." To all this, I add my definition: A sense of place is knowing the stories of the land where you live and feeling a part of those stories. For too many people, this sense is undeveloped; they do not have this relationship with the place where they live.

A Sense of Place

The place is more than simply a name of a location. It is the people who live there; it is the land, the plants and animals, the water, the air, and the soil. It is the history and the stories that connect everything together. The goal of this book is to increase children's knowledge of natural and human history in their community and also to develop an appreciation for their surroundings. This knowledge and appreciation will lead to a connection and a sense of place. Environmental education is best taught in the place where a child lives. The children's own experiences can be a part of their education.

There is a restlessness and a feeling of disconnectedness running through our society. Children want to belong—they yearn to belong, they want to make a difference—but they feel powerless. They want to be part of the story. Children need, want, and can have a sense of place. We can help them, and at the same time, we can help ourselves find our own sense of place. Edith Cobb, author of *The Ecology of Imagination in Childhood*, has described a child's first place as "a place in which to discover a self."

Without a sense of place, we can not only lose ourselves; we can destroy the place. Other animals aside from human beings have a sense of place. They know how to live where they live. They adapt to the place. Too often, people try to adapt the place to themselves. This practice is destructive and wasteful. It is better to know the place and to live with it. Does it make sense to use scarce water to grow green lawns at the Phoenix Airport instead of celebrating the desert? Where I live, in Bayville, New York, houses are built even closer to the Long Island Sound less than a year after a flood covered half the town.

How do we help children find their sense of place when many of us do not feel connected to where we live? Learning together and rediscovering a sense of wonder is the first and most important step in the process.

A Sense of Wonder

Watch any toddler if you want to see a sense of wonder in action. I have learned more about wonder from my son Zack than from anyone else. Watching him on a hike through the woods is a constant reminder of just what a miracle everything is. He is excited to see the same thing over and over again; he is amazed that it is there each time. We have thrown countless stones into streams—each one has a unique splash. We have checked under logs everywhere, and each worm is worth a look. Zack doesn't mind going to the same place twice because he never knows what he is going to see. He asks questions, he uses all his senses, he wants to be lifted up for closer looks, or he squats down to peer intently. His imagination transforms the same stick into a shovel, a dolphin, a fishing pole, and a tail, all within 10 minutes. To have a sense of wonder, one must come to expect wonder. I expect wonder and I am rarely disappointed. Learning to expect wonder makes exploring exciting.

Even when we realize that there are patterns and some predictability, our sense of wonder does not have to die. In his book *Apology for Wonder*, Sam Keen reminds us that "a mature sense of wonder does not need the constant titillation of the sensational to keep it alive. It is most often called forth by a confrontation with the mysterious depth of meaning at the heart of the familiar."

Wonder has two important aspects that make it essential for gaining a sense of place. Wonder leads to a desire to know more, to gain knowledge and understanding. Second, if we wonder about something, we begin to care about it. Empathy can translate into action. These two factors, knowledge and love, inspire connections to place. Edith Cobb describes one more advantage: "The ability of an adult to look upon the world with wonder is thus a technique and an essential instrument in the work of the poet, the artist, or the creative thinker."

What happens to that toddler with a natural sense of place and wonder? Why does Zack ask me a hundred questions a day? A young child keeps asking and looking because he or she is not sure the same thing will happen twice. As we get older, we think we know it all. Gaining a sense of wonder is admitting to not knowing. As the Zen parable goes, we learn better when we have an empty cup. We need to open our minds as well as our senses and let wonder back in. In her book *The Having of Wonderful Ideas*, Eleanor Duckworth puts it this way: "Knowing the right answer requires no decisions, carries no risks, and makes no demands. It is automatic. It is thoughtless." Too often children want the quick, easy answer. They learn one fact and believe they know it all. There is power in not knowing. It leads to a willingness to learn, to wonder.

Rachel Carson wrote a beautiful book entitled *A Sense of Wonder*. In it, she explains just why this sense is so valuable: "Those who dwell, as scientists or laymen, among the beauties and mysteries of the earth are never alone or weary of life. Whatever the vexations or concerns of their personal lives, their thoughts can find paths that lead to inner contentment and to renewed excitement in living. Those who contemplate the beauty of the earth find reserves of strength that will endure as long as life lasts."

Her wish is my wish: "If I had influence with the good fairy who is supposed to preside over the christening of all children I should ask that her gift to each child in the world be a sense of wonder so indestructible that it would last throughout life, as an unfailing antidote against the boredom and disenchantments of later years."

Contact with Nature

To make Rachel Carson's wish come true, children need direct contact with nature. They need to be outside. They need to explore, get dirty, find stuff—they need to have fun. They need to catch animals and let them go. Sometimes they may even cause a bit of environmental damage. When I worked at Greenkill, I used to take children straight down the Ridge. It was a loose shale slope, and each time down we caused our share of erosion. Yet the kids loved the adventure of sliding and climbing up and

down a mountain. The Ridge gave more than a memory, and if anything happened to the Ridge, they would care. I am not advocating cruelty to animals or purposeful environmental destruction, but children need to experience nature hands-on. In his memoir *Thunder Tree: Lessons from an Urban Wild-land*, Robert Michael Pyle puts it this way: "There needs to be places that are not kid-proofed." Children need to be able to hold nature in their hands whether it is a rock, flower, or salamander.

The problem is children do not have these opportunities. Kids today average four hours a day in front of the television. Seven out of 10 children say that television is their number one source of information about the environment. About half of these children feel they learn "only a little/practically nothing" in school about the environment. Unless they watch the local news often, they are not learning about the place where they live. Children don't need National Parks; they need empty lots, forgotten woods, patches of trees, and back-yards where they can explore and find special places. The problem is that small bits of wild places where kids can explore are disappearing quickly. Houses are squeezed into empty lots. Fences are put up, and malls are built. Every time I see a for sale sign on a patch of woods, my heart breaks. The places are harder to find, and fewer adults are interested or have the desire and knowledge to take children to the wild places and let them dive in. Time is another issue. Children today have much less time. A child's schedule can be packed with this lesson and that lesson. Even playtime is organized. Children do not have a chance to play on their own. Robert Michael Pyle calls this the "extinction of experience," the loss of contact with nature in nature. As the wild places and the time to go visit them become rarer and rarer, children lose experiences that are rightfully theirs. I would add to Rachel Carson's wish one extra thought: All children should have a wild place they can get to on their own. Habitat loss and loss of time are the major causes of the "extinction of experience." When these neighborhood wild areas disappear, an extinction of childhood follows. What can teachers do? We can reintroduce children to their home ground. Two-thirds of the children surveyed reported that they would be interested in working with others to benefit the environment. When these children were presented with a list of 15 activities that might increase interest in environmental issues, the most popular activity by far was "going camping or hiking, or spending time closer to nature." I'll bet your own experience working with children would support these findings. The children are ready for us.

Begin by celebrating the local area. It is close by. It has meaning. The kids already know something about it, and there is much to do and learn nearby. The place where we grow up has a permanent impression on us, both consciously and unconsciously. It is the benchmark that we use to compare to everywhere else, the place that holds memories. It is "native ground," as Scott Russell Sanders calls it. As teachers, we can help; we can give children a gift. The gift we can give is a connection to a place. It is truly a gift worth giving and receiving.

Giving children this chance is simple. The goal of this book is to combine the idea of giving children total freedom to explore the wild with the demands of the curriculum. We need to "re-mystify the city," as Randy Haluza-DeLay wrote in *Green Teacher Magazine*. Nature is not something that exists only out there, someplace else. There is plenty to see and do in any outdoor setting. In order to care about the natural world, we must learn that it is everywhere. The best time to do this is during the elementary school years.

Research has shown that the human brain develops in such a way that there are a variety of skills best learned at certain stages of development. Miss that stage, and it gets much more difficult to learn the skills. Learning a foreign language is a classic example. A young child can learn a second language much easier than an adolescent can. Of course, in most schools, we wait until they are adolescents to teach foreign languages. We are making the same mistake when it comes to environmental education.

The years between seven and 12 are the wonder years for children. These are the years to bond with the environment. Think back; for many of us, those were years of first friendships and a time to play and to develop interests and passions. These years are a window of opportunity when children move out of the family circle and bond with the Earth, before adolescence and all the distractions kick in. Paul Shepard says it beautifully: "A decade, from the beginning of speech to the onset of puberty, is all we have to load the ark." A friend put it another way when referring to his sixth-grade daughter: "I have only a few more months to teach her everything."

Children in the middle grades are old enough to have the skills needed to explore their world and are young enough to have a joy for learning and an enthusiasm for the process. Fantasy is still a powerful teaching tool. It is at this age that a child's "way of knowing is by becoming," to borrow a phrase from Edith Cobb. Or, as Walt Whitman wrote, "A child went forth every day. And the first object he look'd upon, that object he became." Just as children this age have strengths that lend themselves to developing a sense of place, they have limits on their abilities that force us to reconsider how and what we teach.

Remember Jean Piaget and all those educational psychologists we studied as undergraduates? It is worth reminding ourselves of the difficulty children have with abstract thinking. They need to experience more of what they learn. When we move beyond the neighborhood, the learning can become too abstract. Learning must begin with the concrete and then move to the abstract. We cut children off from the most important place in their lives and devalue it by emphasizing other places. They need to build their learning on what they know. We can't teach children about rain forests before they know about oak trees. We can't teach them about holes in the ozone layer before they understand the carbon cycle. This approach does not mean "dumbing down" the content. It means putting the content in a local context before going out further. This does not mean children in the middle grades are not thinkers. A reading of Robert Coles's *The Spiritual Life of Children* will give a glimpse into the serious thought children of all backgrounds give to their spiritual life, nature, and their role in the world.

Teaching About Environmental Issues

Environmental issues are complex. If there were simple answers, there wouldn't be as many problems. There are shades of gray, not black and white. Young children can't be expected to grasp all of the many sides of the argument. It takes a while in everyone's moral development to be able to put oneself in another's shoes and to make decisions based on society interest, not self-interest, and on some other basis of reality.

Focusing on environmental tragedies can scare children, giving them a sense of powerlessness and cutting them off from the natural world. The response to overwhelming problems often is to ask oneself, Why bother doing anything? rather than dedicating efforts to solve the problem. We care for something by learning to love it, not by fearing it. *Beyond Ecophobia: Reclaiming the Heart of Nature Education*, David Sobel writes, "no tragedies until fourth grade." Even then, keep the focus on what Lucy Sprague Mitchell calls "the here and now." There are plenty of local issues on which to work.

Childhood experiences with nature matter. Edith Cobb studied the lives of 300 geniuses to find common patterns in their lives. Their genius began in "the little-understood prepubertal halcyon, middle age of childhood, approximately from five or six to eleven or twelve . . . when the natural world is experienced in some highly evocative way, producing in the child a sense of some profound continuity with natural processes." In his book *Ecological Identity*, Mitchell Thomashow finds a similar pattern among the environmental activists he has interviewed all over the world. They all remember special childhood places where they were able to bond with the land as key influences in their work as adults.

In a review of the research on environmental sensitivity between 1980 and 1995, Leesa Sward and Tom Marcinkowski found that childhood experiences do lead to environmentally responsible citizens. They also report that environmental education efforts should focus on local areas and impacts. This doesn't mean everyone will or should become an activist. Being connected to the place can translate into many roles. Some of the experience of developing environmental sensitivity may be outside the scope of a school, but there are ways schools can have an influence by providing knowledge, experience, and exposure to role models.

As teachers, we still have an influence on children of this age. Research supports the fact that children learn from role models with whom they have a warm relationship and who have power in their lives. When there is the perception that the role model gains from the behavior they are trying to instill,

there is more of an effect on children. Your pleasure and enthusiasm for learning about the place rubs off. When you get excited about a discovery, the children get excited. When you learn from a mistake, the children learn an important lesson as well. When you respond to a question with "I don't know" and then go and find the answer, they learn more than the fact you dug up. I am asked at least one question per hike that I can't answer.

We are role models whether we like it or not. I ride my bike to school every day. Once I forgot my helmet. At least five students saw me and commented. They pay better attention than we think. Our actions model to children our values. We must practice what we preach.

Participating yourself shows them that you're willing to learn and that learning never stops. It is a powerful statement when children see adults consider the work so important that they do it themselves. It makes the work relevant, real, and practical. You don't have to be an expert naturalist. Identifying every bird and plant is not the goal. You don't even have to love bugs. You do have to be willing to take risks, try something new, and learn together with your students. There is absolutely no problem with saying "I don't know."

Environmental educators are beginning to recognize the power of place in a child's environmental education. In their thought-provoking collection of essays, *The Geography of Childhood: Why Children Need Wild Places*, Gary Paul Nabhan and Stephen Trimble suggest three principles of a place-based program: "Intimate involvement with plants and animals, direct exposure to a variety of wild animals carrying out their routine behaviors in natural habitats, and teaching by community elders (indigenous or otherwise) about their knowledge of local biota."

I would also add Mitchell Thomashow's three principles from his book *Ecological Identity*: highlight the importance of the learner's experience; establish open, cooperative learning spaces; and provide a conceptual vision to a well-rounded, integrated program. These guidelines can help you design a program for your children where you teach.

The problem is that a great deal of the environmental education being done in our schools is not helping children connect to the place where they live. In fact, some of it may be doing more harm than good. Survey your own school. Are children spending more time studying the rain forest and other faraway places? It is easier to study rain forests; there are plenty of prepackaged lesson plans, and no one has to go outside and get dirty. Children can study rain forests at their desks.

Too much of the environmental education in elementary school is spent on learning about the problems in the environment. Although these issues are important, we can't teach them first. Are children learning more about pollution and other environmental issues before they even care about the place where they live? If nature is seen as a place full of problems, poisons, and garbage, why would you want to go out and enjoy it?

This isn't the only problem. Most of the information children learn about the environment comes from television. They are not learning from their teachers or other adults, and they're not learning for themselves from direct contact. I am not saying all television is bad. I credit Mutual of Omaha's *Wild Kingdom* with Marlin Perkins as a major influence on my love for animals. According to a survey by the National Environmental Education and Training Foundation titled "Environmental Attitudes and Behaviors of American Youth," when 71 percent of the children say television is their major source of information, we have to change things.

Science textbooks are written for the mass market. They are general in focus and are geared to the widest possible audience. At the age of the students we are teaching, environmental education should be local in order to be meaningful. Materials should help children connect to their own unique place. Even the photographs in these texts emphasize animals that most children are unlikely to see. Thomas Nelson, in his article "Paradigms and Paradox: Belief Structures in Environmental Education," cites a

study by K. S. Wade that reports that professional development in environmental education is dominated by activity-based, nationally produced curricula, which is primarily science-oriented rather than interdisciplinary and is concerned with environmental content rather than educational context.

When it is taught, environmental education is separated from everything else. It is done by specialists on field trips, in special places, or maybe it consists of a few lessons for Earth Day in the spring. This approach sends children a message: Environmental education is only for a chosen few with some sort of special, mysterious talent, when in fact it is for everyone; it must be for everyone.

The other issue is the teachers. Of course, there are many wonderful teachers who are not teaching very much environmental education. Just because a teacher doesn't take children outdoors doesn't make him or her a poor teacher. There are many barriers that prevent teachers from integrating environmental education into their curriculum. They don't have the expertise, they feel there is no place to teach it, there is no time, or they simply do not know what to do. All these barriers are legitimate.

Despite all this, children need to go outdoors to learn about the place where they live. How can one teach children about flowers or insects without going out and looking at some? A teacher in one of my recent environmental education courses told me that she started taking her second graders out each day for a few minutes to write in their weather journals. She had been teaching weather for years and had never taken the children out before. I wondered how many other children learn about weather in school without even being told to look out the window.

This book addresses these concerns and, I hope, will provide some answers. No one has ever said to me, "Dan, take this out of your curriculum." I have only been told to add more of this or more of that. I am not suggesting that place-based environmental education be another subject to squeeze in right after math and before current events. Instead, I suggest place-based environmental education as a way of teaching other subjects. It can be a theme that runs throughout the school year, whether it is reading, writing, science, math, or social studies.

John Elder was only half joking when he suggested that environmental education should be called simply education, "in contrast to the disciplinary compartmentalization and abstraction that often characterize conventional curricula." He goes on to compare interdisciplinary environmental education with an ecotone. An *ecotone* is the ecologist's word for a place where two habitats meet. Because of the diversity of habitat, the diversity of species increases. The connection between two or more subjects will increase the diversity of learning.

Integrating Environmental Education Throughout the Curriculum

By integrating subjects, children see that learning cannot be classified into neat 45-minute packages of math, science, social studies, or writing. By integrating environmental education into the entire curriculum, you can find the time to teach these activities. It is not another subject; it is another way of teaching each subject. Children will see that learning one subject will help them do better in another. A year-long study teaches children that learning takes time. Patience and hard work are required. Once children are excited about learning, it will carry over to other areas. A nonreader who wants to learn more about pond life will want to read.

Integration not only provides the time; it means the curriculum can have greater depth rather than breadth. To borrow a metaphor from Eleanor Duckworth: When building towers, we do not just put one block on top of another; a tower with a wider base can go higher. Children need time to develop a clear understanding of what they are being taught. Too often, children are exposed to a rapid succession of topics in a race to get through the curriculum. Duckworth explains further, "Exploring ideas can only be good, even if it takes time. Wrong ideas, moreover, can be productive. A lesson learned from a mistake is stronger than the lesson learned without the mistake." A simple example makes the reason for depth clear. If we measure the temperature of two glasses of water that are 100 degrees each

and mix them together, the temperature should be 200 degrees if we base our answer on other measuring experiences. Children often make this mistake. They know how to measure but do not know why, when, or whether. The same is true about many other experiences.

David Orr suggests that one cause of our environmental problems is the problem of specialization in one subject. The engineer may be expert enough to solve the engineering problems but does not know enough to understand the consequences of the solution on the environment. We need to begin early so that children see the world as an interrelated web of cause and effect. It can be a little upsetting to learn of the consequences of our action, but it is the only way to eventually solve problems.

Currently, my social studies textbook allows for two lessons on Native Americans, one lesson on the geology of Long Island, and nothing about its natural history in its rush to cover 15,000 years of history. No matter what we are going to teach, we have to select some content and leave out other areas of information. We may as well teach what we select in depth. We need to teach children a love for learning and to give them the skills to learn more in addition to the content. As teachers, it is important to raise questions and to push the limits. Only by going in depth can this be done.

This habit of learning a little bit about many things means that children do not have the experience of learning deeply about a certain topic. They do not have the chance to be experts, which is what we do as adults, or at least hope that we do. A habit of superficial learning leads to an attitude of false knowledge. Children who think they know all the answers have more trouble understanding than children who allow for the possibility that there is more to learn. Children can become knowledgeable; look at all those eight-year-old dinosaur experts.

Integration helps solve the ever-present time problem. A lesson on perimeter and area can be taught outdoors. Mapping the school yard is no longer an isolated lesson but part of a long-term project to learn about the place where students live. Writing can be done with a place-based focus. Even social studies has its place in the outdoors. Keep your eyes open; there are many ways to weave place-based environmental education into what you are already doing. Take a chance and make a change in your teaching practices.

Addressing Diverse Learning Styles and Needs

Much interesting work has been done on how people learn. As we learn more about learning, it is clear that environmental education has a great deal to offer. Many environmental education techniques can be applied to teaching other subjects. The Proster Theory, developed by Leslie Hart, proposes that the brain aggressively tries to make sense of the world. By making learning situations compatible with the brain, more can be learned. The following guidelines are suggested:

- More learning takes place in the absence of threat. In threatening situations, older brain functions take over that are not effective for learning.
- Encourage basic skills of communication such as oral and written.
- Learners need the freedom to manipulate materials in a hands-on manner.
- Expose students to reality.
- Assess learning through performance, not by answering questions.

Place-based environmental education cannot be integrated only through a curriculum; it also addresses the variety of students in any given population. Children learn in a variety of ways. Each child is unique. Bernice McCarthy's work describes four general types of learners:

- Those who learn best by relating to other people.
- Those who learn best by watching and listening.
- Those who learn best through intellectual understanding.
- Those who learn best by doing.

Another approach to the fact that children do not all learn in the same way is Howard Gardner's theory of multiple intelligences. He has defined intelligence as "the human ability to solve problems or to make something that is valued in one or more cultures." The ability must meet other criteria: Is there a particular representation in the brain for the ability? Are there populations that are especially good or especially impaired in an intelligence? Can an evolutionary history of the intelligence be seen in animals other than human beings? Originally, seven intelligences were defined: linguistic, logical-mathematic, spatial, kinesthetic, musical, interpersonal, and intrapersonal. Recently, an eighth intelligence was defined: naturalist. *Naturalist intelligence* refers to the ability to discriminate among living things as well as sensitivity to other features of the natural world. Personally, I'm glad to know that my strength is being recognized.

There is a genetic basis for intelligences, and different people have different strengths. The diversity of place-based education can help children use their strengths as well as develop new ones.

Not every activity covers every learning style or intelligence, but doing a variety of activities gives each learning style a chance and gives children a chance to strengthen other learning styles. The variety of activities in this book makes it possible to reach more students. Keeping that idea in mind will help you reach more of your students.

There are other advantages for our diverse populations. Children with learning issues have the chance to shine in new ways. Skills that are not always used in the traditional classroom setting take on a new importance when exploring the outdoors. There are new ways to achieve success. Reading and writing are not the sole areas of succeeding in class. Finding the coolest-looking insect can do surprising things for self-esteem. Information is not just gathered from reading or listening. In many of the activities, group work allows children with learning issues to contribute.

Sometimes, the achievement is something so subtle it is easy to miss. I once had a student who spent several hours a week with an occupational therapist, getting special help for body control. One day we took a trip to a nearby beach. I was taking groups of children out on a dock to catch glass shrimp. The tide was out, so the ramp angled down at a steep decline. We headed out. I turned to check on the student and saw him hesitate, almost call out for help, then go carefully, watching each step. He did this all by himself. He thought no one was watching. When he got on the dock, I saw a smile that made my day.

Enrichment is another challenge. Place-based environmental education offers a variety of ways to help challenge children in new areas. Opportunities for more in-depth research crop up all the time. An in-depth project is particularly good for high-achieving students who are used to running quickly through their work. They will realize that they do not know it all and that the more one learns, the more there is to learn. Many of the activities can be extended easily into new areas, or motivated children can find their own projects. Many of the projects are open-ended, giving children a chance to go much further if they can.

Because gender issues are less distracting during the middle years, this is an opportunity to expose children to experiences that help break down some of the traditional beliefs about girls and boys. Place-based environmental education appeals to girls who may not always be encouraged to show an interest in science. This approach is an opportunity to encourage girls to get involved in science and bring their perspectives to the experiences. Boys see girls interested in enjoying science. Boys and girls see each other in a fresh light and can be put in groups easily when the activity overshadows the fact that two boys and two girls may actually be in the same group. Indoors, it is easy to rely on the old rules; going outside changes things. It is easy to assume all girls hate bugs until a boy sees a girl pick one out of pond muck. Other girls learn that it is acceptable to be interested. An important note: Girls mature faster; all too quickly their bodies and thoughts change. The window of opportunity for bonding is smaller and needs to be addressed.

Feeling part of the place and being part of something builds self-esteem in a natural and honest way. "One of our first relationships and one of the most sustaining, can be a relationship with the earth one built on trust and understanding, learning to comfort," writes Stephen Trimble.

Becoming an expert, overcoming challenges, learning new skills—these experiences build self-esteem much more than many of the cookie-cutter self-esteem activities ready-made for teachers. The elementary school setting lends itself to place-based environmental education because of its naturally nurturing climate. In a self-contained classroom, teachers have the opportunity for more flexibility and innovation. We are not limited by 45-minute blocks of time, although sometimes we self-impose these limits. For the first time this year, I set up my schedule to have a weekly, two-and-a-half-hour block of science instead of three 45-minute classes. I did the same for social studies. Clean-up time was cut down, transitions were easier, and we spent less time reviewing. We went from one activity to another so easily that I spent much more time on each task. I couldn't believe it took so long to make the change in scheduling. Lessons that are working can go longer; lessons that are not can be ended.

"Our children are losing the land. It doesn't go to work on them anymore. They don't know the stories about what happened at these places. That is why some get into trouble" (said by Ronnis Lupe, 42 White Mountain Apache Tribe). The previous quote could be applied to many groups, not just to the Apaches. What she means is that in the Apache culture and in other indigenous cultures, stories play a key role in educating the child. This comes from Keith H. Basso's work with the Apaches in the village of Cibecue on the Fort Apache Indian Reservation in east-central Arizona. One of his observations was that place-names were very common in the stories. Each name was a sentence unto itself. These place-names were an important part of the stories. Locations all through the reservation are reminders of stories that happened there. These stories teach important lessons, and every time a child passes the spot, it serves as a reminder of the lesson learned. The land reminds children of the stories, and the stories are guides on how to behave. Perhaps we can learn something from these ideas. Instead of storytellers, we have picture books.

Using Children's Books

Picture books are like bringing a storyteller to the class to act as a guide for the experience. Stories have always been the most powerful way to teach children about the natural and human history of the place where they live. For thousands of years, the knowledge of the place was continued orally, through stories. The best teachers were the best storytellers. There are stories that have the power to teach and to connect children to their place.

These books give a voice to the land. We can use them to put into words what we have trouble expressing. Oftentimes, it is easier to read someone else's words than our own when discussing an emotional topic. I am always amazed at the power of reading out loud—at the attention children give to a good story and the way they notice the smallest details in the illustrations.

Many times it is enough to simply read the book and say nothing. I like to trust the book to be strong enough on its own and trust the children to get the point. A great hike would encompass picking five or six books, taking a walk, and simply stopping to read each one and never say another word.

Picture books are powerful at any age because of the themes with which many of them deal. Issues and concepts raised by these books apply to children of all ages. Different children will gain different things from the stories. Even the simplest picture book can have meaning for a sixth grader or even an adult. There is no age limit for picture books. The stories are powerful for adults as well. Many of these books have been published only recently; older children may have missed them the first time around.

These books are too good to miss. The writing can serve as a model for the children's own writing. The best way to learn to write in a certain genre is to read books in that genre. Picture books allow children to read a wider selection, thereby exposing them to more possibilities for that particular genre.