

The Sky Above and the Mud Below

Lessons from Nature Preschools
and Forest Kindergartens



DAVID SOBEL

The Sky Above and the Mud Below

Other books by David Sobel

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Play-Based Education: Connecting Classrooms and Communities



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This book is dedicated to all the hearty and courageous
early childhood educators who are forging new paths
into the natural world with young children.

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Ellen Doris, the cocreator of the [Nature-based Early Childhood program at Antioch University New England](#). She has a fine ear for the *mot juste* and a fine eye for good teachers and good curriculum. I have enjoyed crafting a vision with her of what early childhood education could be.

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PREFACE

Why *The Sky Above and the Mud Below*?

The sunlight slinks through the pine branches above, and snippets of blue, blue sky peek through. Or perhaps the drizzle slithers off the maple leaves, and the snippets of sky are a mottled gray. Up ahead, the drizzle and trail soil have conspired to create a beckoning mud puddle. Clad in rainsuits and wellies, the children squeal with delight as they tromp into the ankle-high depths. Let the wild puddle rumpus begin! The fluorescent lights, letter posters, and worksheets are forgotten. The classroom, at least for the next few hours, is a distant memory. The children and teachers submit to the thrall of puddle whumping with just the sky above their heads and the mud below their feet.

Most of the readers of this book won't recognize the origins of the book title, so a bit of explanation is called for. *The Sky Above, the Mud Below* was a 1961 French film that won the Academy Award for Best Documentary that year. The film documented a seven-month, thousand-mile Franco-Dutch expedition into the previously unexplored territories of what was then Netherlands New Guinea, where the explorers encounter the local indigenous peoples. There are exciting accounts of arduous bridge-buildings and crossings of dangerous streams, along with difficult climbs up rain-washed mountains. The native people in that part of the world live much of their lives in the elements with the sky above their heads and their feet in the mud.

Nature-based early childhood programs are similarly foreign to many explorers from the outside world. (Think well-dressed, sensible-shoed evaluators from the Child and Family Services department who have come to see whether your program meets state early childhood licensure guidelines.) "These children have no roof over their heads most of the morning, and you're letting them stomp wantonly in the mud? And some of them have their faces painted with squished raspberries! Is this safe? And what about this strange ritual of every child alone in the woods in a special place—are they praying?" They'll feel like they've entered a land almost as strange as the New Guinea jungles.

In a way, this book is an ethnography of nature-based early childhood programs. One of the goals is to explain why the sky above and the mud below are actually good for children. It helps to translate from the language of the woods and fields to the language of early childhood program approval guidelines. It describes outdoorsy curriculum that meets literacy, math, and science goals. It shows how tree climbing and fire building can be fun *and* safe *and* educationally valuable.

Like the French and Dutch explorers, nature-based early childhood pioneers are blazing new trails into the woods and fields of early care.

You're becoming experts in outdoor gear, peeing and pooping outside, plant identification, yellow-jacket-nest detecting, icy-slope negotiating, and communicating with parents about why their children come home every day with dirty clothes and a glint in their eyes. You're learning to articulate why counting with acorns and sticks is just as valuable, maybe more valuable, than counting with pennies. You're coaxing parents to join you out in the woods, away from the humming, overhead-lit school cafeterias, to explain how this playing in the woods will prepare children effectively for public school kindergarten or first grade. It's a tall order, but you can do it. Help is on the way from all the adventurous early childhood teachers who have contributed to this book. Follow them; they know the trails.

A NOTE ABOUT SOURCES

This book is a watershed, with trickles emerging from a wide array of sources and gradually converging into mountain brooks, then a few streams through fields, then a river with a slow but strong current. The many streams are early childhood educators who are working across the United States—from Santa Barbara, California, to Baltimore, Maryland; from New Orleans, Louisiana, to Montpelier, Vermont. All but one of them received a fellowship, funded by the [George B. Storer Foundation](#) as part of their participation in the [Nature-based Early Childhood Certificate program at Antioch University New England](#) in Keene, New Hampshire. The fellowship required them to document the naturalization of their early childhood programs. These ranged from programs for homeless and at-risk children, to independent schools, to public preschools and kindergartens, to university farm programs, to Head Start programs, to botanic gardens, to Waldorf schools.

Essentially, most kinds of settings—urban to rural, traditional to cutting edge—are represented. These efforts at getting children learning and playing outside can, and should, happen anywhere. As Joan Almon says in the movie *The Best Day Ever: Forest Days in Vermont Kindergartens* (2017), “All children need more nature, that’s a given.” And so we hope that this book helps you give the children in your care more nature.

I’ve taken these diverse sources of good ideas and woven them together into chapters. The first half of the book is about policies and practices to help you organize your school and classroom for the different demands of being outside in all kinds of weather. The second half of the book is about curriculum—all the basic things like reading, writing, arithmetic, science, gardening—and how you can address most of the academic and social-emotional goals of the early childhood curriculum outdoors.

I’ve written an essay at the beginning of each chapter that connects the articles to some of the current educational issues, themes, and emergent research. At the end of many of the articles, you’ll find several state early childhood standards or [Next Generation Science Standards \(NGSS\)](#) and an indication in italics of how the activities in that article met those standards. We’re trying to show very specifically how these naturalized programs cover all the requisite bases in some new, and perhaps better, ways. I hope this combination of thematic essays and nitty-gritty articles are a good synthesis of big ideas and brass tacks.

My thanks and appreciation to all the contributors to this book who are bringing more nature into children’s lives. In many cases, they’ve moved on from these organizations, but they worked or interned at these early childhood programs when this book was being written:

Michel Anderson, [Waldorf School of Baltimore](#), Baltimore, MD

Maryfaith Decker, [Lime Hollow Nature Preschool](#), Cortland, NY

Audrey Fergason, [Forest Gnomes at Natick Community Organic Farm](#), Natick, MA

Matt Flower, [Urban Ecology Center](#), Milwaukee, WI

Melissa Frederick, [Magnolia Nature School](#), Nauvoo, AL

Wendy Garcia, [Cold Spring School](#), New Haven, CT

Megan Gessler, [Natural Beginnings at Kendall County Forest Preserve](#), Yorkville, IL

Harriet Hart, [Dandelion and Snail Preschool at Twinfield Union School](#), Plainfield, VT

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Katie Swick, [AllTogetherNow! Preschool](#), Montpelier, VT

To echo Arlo Guthrie, it looks like we've got ourselves a movement here.



Getting Organized

Part I

Getting Organized



CHAPTER 1

Before Taking Children Outside

Taking children outdoors is full of promise and laden with challenges, especially if they're used to school being indoors most of the time. Going outdoors means recess, and recess means outdoor voices, climbing on the monkey bars, and getting as far away from the teacher as possible. Going outside also potentially means the neighborhood dog will trundle in to nuzzle the children and disrupt your activity, the grounds crew will start mowing the grass right next to your outdoor classroom, the wind will blow the children's worksheets off the table into the poison ivy, and someone will have to pee as soon as you settle in under the big white pine. So much for just smelling the roses.

Whether you're starting a nature preschool from scratch or you're a kindergarten teacher who wants to get the children outside more, you'd be wise to focus on that old scouting mantra: be prepared. And being prepared means more than tucking your pant legs into your socks and bringing a first aid kit along. Here are the top ten things (roughly in order) you need to accomplish before you start to take children outdoors:

TEN THINGS TO DO BEFORE HEADING OUTSIDE

1. **Assess potential hazards in the environment.** Conduct a risk assessment of the outdoor spaces you'll be visiting. Are there yellow jacket nests, poison ivy, potential encounters with dangerous animals? (Later on, you'll learn about the big-animal drill they do in Victor, Idaho, where it's possible to encounter bears or moose!) You'll also want to look for broken limbs still hanging in trees, old barbed wire, and other potential hazards that children might not notice. Modest risks are good—they provide appropriate challenges that encourage learning for your children. It's your responsibility to allow for acceptable and appropriate risk (slippery, not-too-steep slopes). Hazards are things your children can't assess or manage on their own, and it's your responsibility to eliminate them or avoid them. Therefore, you have to spray the yellow jacket nest or not go in that section of the forest. Or, you can ask the maintenance staff to cut down the broken limb over your outdoor classroom meeting area. Use modest risks to your advantage; eliminate or avoid hazards.
2. **Differentiate between recess and outdoor learning.** Figure out how you will make it clear that outdoor time is different from recess. Yes, the children will have some free nature playtime, but there will also be circle time, story time, sit spots, and outdoor lessons. Outdoor learning time has the same kinds of expectations as indoor learning.
3. **Develop techniques for outdoor group management.** Developing a set of management techniques that will keep children both safe and engaged outside is important. Hannah Lindner-Finlay's guidelines in this chapter have got you covered here. Let me suggest an additional modestly stern but effective technique: The first time you take children outside, make it clear that you will walk in the front of the line, and no one will go ahead of you. Otherwise, everyone must come back inside. As soon as you pass through the door to the school yard, walk slowly and allow an energetic child or two to bolt past you into the inviting sunshine. Immediately use your whistle or teacher voice to call everyone back, and walk them

back inside. Then sit them in a circle and remind them about the rule that the teacher walks in front of the line. Tell them if they can't follow this one rule, then you won't be able to do outdoor learning. Ask them if they can follow this one rule. If they agree, try going outside again. If the children are successful, praise them and then engage them in an activity. If some children rush ahead, take them back inside again and say you'll try again tomorrow. Mean what you say—it works like a charm!

4. **Create risk-management plans for potential risky behaviors.** In addition to removing hazards, decide ahead of time what kinds of risky behavior should be encouraged or avoided. If there are small climbable trees, what will you do when children want to climb them? Do you allow the children to hop across the little stream? How will you visually create boundaries in the woods so children know where they're not allowed to go? Maryfaith Decker's protocols in chapter 3 on tree climbing, playing near water, and cold- and hot-weather guidelines are components of a risk-management plan.
5. **Identify the affordances of the environment that support play and learning.** Affordances are opportunities for engagement. Look for them while conducting your risk assessment of the landscape. A tree trunk on the ground, at just the right height, affords comfortable sitting. A pine-needled forest floor with no vegetation under a grandmother white pine affords a perfect circle gathering spot. Lots of dead branches on the ground afford fort building. The slippery slope affords problem solving: "How can we be sure that everyone can get up this slope safely? Can you help your friend?"
6. **Align outdoor activities with your curriculum standards.** Teachers at a public school nature kindergarten program in the Sooke, British Columbia School District were initially concerned about whether the children's academic progress would be compromised. The plan was to have the children outside in the morning and inside

in the afternoon—inside in the afternoon so they could make sure they had enough time to address the academic aspects of the curriculum. But after the first three months, the teachers found that academic skills were just as easily developed outside as inside.

When I visited one of these classrooms, teachers introduced the letter *S* inside, and then everyone went outside. The children walked *S*'s in the dewy grass in the field. Once in the woods, they made *S*'s on the ground with sticks and pinecones. During circle time, they named things they'd seen that morning that started with *S*—sunshine, spruce, salmonberry, sand. Later chapters articulate clearly how such outdoor play activities—both teacher-led and children-initiated—meet the local early childhood curriculum standards.

7. **Learn phenology—the science of what's happening now in the woods and fields around you.** Nature-based early childhood teachers need to be knowledgeable about both child development and natural history. One without the other is not sufficient. It's why we have a Natural History for Early Childhood course in our program at Antioch New England. You should know some of the mushrooms that emerge in the fall and where you're likely to find them. You should know the difference between goldenrod and aster, and which berries are edible and which are toxic. Pokeberries (toxic) look a whole lot like blueberries (edible) to children. Can you tell the difference?

In the winter, learn how to tell whether a raccoon or skunk has been visiting the compost pile. Which birds overwinter in your area and are likely to come to your feeders? When do snow fleas start to appear, and how can you find them? When and where will the first wildflowers emerge in spring? What are vernal pools, what will we find there, and why are they important? And which birches are best for bending? (Don't know about this lost New England pastime? Read Robert Frost's "Birches.") Have a collection of natural history guides

for your area in your indoor space so both you and the children can browse them.

8. Know the personalities and dispositions of the children in your group.

Are any of the children in your care “runners” (children who are prone to taking off and not stopping)? You’ll want to know the answer to this question before you head out into the field with no clear boundaries. Familiarize yourself with the children’s fears and dispositions in more bounded settings before moving into more unbounded settings. Again, Hannah’s guidelines later in this chapter nicely articulate moving children from indoors to a nearby outdoor space on the play yard and practicing rule behavior before moving farther afield. This will allow you to understand which children are afraid of worms, which children need to be close to an adult, which children might have trouble keeping their hands to themselves, and so on.

9. Know the previous outdoor learning experiences of the group.

This is a corollary to the previous guideline. It’s important to know if the children have prior experience learning outdoors. Did last year’s teacher conduct a day in the woods? Do children already know about appropriate clothing?

Acclimated children need very different treatment than a group that is not outdoors savvy.

10. Dress for success. That means both you and the children. Being outside for hours in the winter in northern climates requires lots of preparation. Everyone is going to need really warm boots, rain or snow pants and jackets that shed water, and lots of layers of fleece and wool. No cotton or denim! Children also need backup clothes to change into when they come back inside. All of this clothing necessitates a really good clothes storage system inside. Audrey Fergason’s guidelines in this chapter provide a good starting point for northern winters. On the other hand, being outside in Arizona in the spring means sun protection, scorpion avoidance, and lots of hydration. (Someone needs to create the Arizona version of Fergason’s guidelines.) And get familiar with which brands actually perform—for example, which mittens children can actually get on when their hands are damp and cold. You’ll need to tell parents what to look for at the secondhand shop or at the outdoor clothing store. One suggestion—investigate Polarn O. Pyret, a manufacturer of high-performing children’s outerwear.

The articles in this chapter will get you started in your preparation. Hannah Lindner-Finlay gets down to brass tacks in terms of rules and guidelines. Audrey Fergason provides sage wardrobe advice. Wendy Robins explains the logistics necessary to ensure a good lesson in the garden. And follow Jennifer Newberry’s very explicit guidelines for making your outdoor apron and what goes in it.

Strategies for Safe, Fun, and Focused Nature Explorations

by Hannah Lindner-Finlay

When I first considered incorporating nature-based learning and play into my own curriculum, there were three big questions in my mind: How can I ensure that the children are safe? How can I encourage focused learning in nature? How can I maintain control in the “wild” outdoors? Through conversations, readings, and direct experience, I have learned simple strategies for establishing nature as another classroom. I am sharing them in the hope that they might make your work with children in nature easier and more fun.

BRING FAMILIAR ROUTINES OUTSIDE

- If you use a bell, chime, or call-and-response in the classroom to get children’s attention, take that management tool outside. Practice using the tool and having children freeze or circle up on the playground. When children become adept at responding to the tool on the playground, take it with you to other nature spaces and practice using it there.
- Establish a meeting area in each nature space you visit. If your children sit in a circle during inside meeting times, then do the same outside. You might want to provide structure for your circle using logs, rocks, or poly spots.
- If you do morning greetings in your classroom, you can transfer this routine outdoors (even if it isn’t morning). Children who have practiced passing a question around the circle inside will be able to focus while doing so outside as well.





DEVELOP NATURE-SPECIFIC RULES AND ROUTINES

- Consider how you want students to transition into each nature space. You may want different routines for different spaces. When I take children to visit the garden, we start with a nature concert. Each child gives me a “ticket” and then they sit in a circle, counting on their fingers all the sounds they can hear. When we go to the woods, children first go to their own “sit spot” where they can sit or build quietly while observing any changes since their last visit. Sit spots are followed by a circle time where students each share one change that they noticed.
- Visit each nature space before bringing children there, and try to anticipate important safety rules that children should know. For

example, you might want children to ask permission before climbing trees or swinging on vines. You also might want to make sure that you have a stick safety policy approved by your school administrators. Make sure you can explain the purpose of these safety rules to the children so that they are meaningful.

ESTABLISH BOUNDARIES

- Before taking your children to a new nature space, identify important boundaries that you want them to know about. For the first several visits to the nature space, bring cones to mark “stop spots” that children should not go beyond. After the first visit, have children work together to put the cones in place. When you invite other children to visit the nature space, have your students teach the boundaries. As children develop ownership over

the boundaries, they become more likely to remember and adhere to them.

- Consider how you want children to travel to the nature space. Will the children be allowed to run, walk, or crawl? Will you be playing a group game, moving in a clump, or walking in a line? It may be helpful to identify stopping and waiting points, assuming that children will be moving at different paces.

INTRODUCE NEW MATERIALS AND NEW IDEAS INSIDE

- If you plan to have children use bug boxes, penlights, magnifying glasses, or nature journals outside, teach them how to use these tools inside where there are not so many distractions. Model how to use these tools and have children practice themselves. When you bring the tools outside to a new environment, the children will be comfortable and confident using them.
- Nature is a wonderful, sensory-rich environment. If you want to cultivate focus, try to introduce one new thing at a time. It can be helpful to identify and explore essential concepts inside before taking them outside for focused learning. This makes it so that children are applying a familiar concept in a new environment.

PREVIEW AND MODEL NATURALIST BEHAVIORS

- Practice observation in the classroom and on the playground before taking children to nature spaces. Observe by describing, counting,

categorizing, collecting, and drawing a variety of natural objects. Explore nature with all five senses—touch, taste, smell, sight, and sound. Developing a culture of observation will make your nature explorations rich with the kind of attention that inspires further inquiry.

- Model kind and respectful ways to interact with creatures in nature. Hide toy slugs, snails, insects, salamanders, and worms under rocks and logs in the classroom. Have children practice lifting up the rocks and logs, handling the small creatures, and returning them to their homes. Explain that creatures' homes should always be put back as they were found. You may want to set this up as a station in your sensory area so that children can continue to practice these skills.

PROVIDE OPPORTUNITIES FOR STUDENT REFLECTION

- Take photos and videos of children's work and play outdoors. Children may not always be ready to reflect in a meaningful way outside, but if you share documentation with them later on, they often have thoughtful insights to share about their learning.
- Before going outside, ask children to remember their last visit to nature. You may want to provide photos or other memory prompts from the last visit. This will help children to build on their previous learning and prime them for noticing patterns and changes in nature and in their own play.

The GORDON SCHOOL is a racially diverse nursery-through-eighth-grade coeducational independent school in East Providence, Rhode Island. In 2016 The Gordon School opened an Early Childhood STEAM Lab. Every three weeks, the students explore a new scientific domain through explorations that integrate science with technology, engineering, art, and math.

Providing Appropriate Clothing for Nature Preschool Programs



Forest Gnomes Waldkindergarten
Natick, Massachusetts

by Audrey Ferguson



“Can I take my jacket off?” Dakota asks.

It’s the middle of a rainstorm, but Dakota has already decided he likes playing unencumbered by his rain jacket, a thick plastic coat that doesn’t breathe well in the 70-degree weather. Dakota is allowed to play without his jacket now on this warm September morning, but if it were colder, he would have had to keep it on.

Dakota’s parents, like all the Forest Gnome parents, were given an extensive gear list before enrolling in the outdoor preschool program. The gear list was developed by the program’s founders after three years of running the program; it is very brand-specific due to the differing quality between brands, with a focus on durability, warmth, and mobility.



FALL/SPRING CLOTHING GUIDE

WHAT TO WEAR

- Long-sleeved shirt
- Long pants
- Fleece or wool sweater
- Sun hat
- Sturdy walking shoes
- Waterproof rain gear (mud pants or puddle pants)
- Lined rubber boots if it has rained in the last three days

BACKPACK

- Water bottle

PLEASE PACK IN LABELED ZIP-TOP BAGS

- 1 extra underwear
- 2 extra socks
- 2 extra long-sleeved shirts
- 1 extra long pants
- Rain gear

About 80 percent of the parents comply and buy everything on the list, which includes items such as backpacks (retailing at approximately forty dollars) to puddle pants (approximately sixty dollars). To outfit one student in the Forest Gnomes program in wholly new items might cost a family close to four hundred dollars.

Cheaper options are provided, when possible, and the list includes local resale boutiques. But in the end, the price tag for the required gear might scare off parents who otherwise would be willing to enroll their child in an outdoor preschool.

Proper gear that fits well is imperative to enable a child to explore their outdoor world comfortably. Puddle pants and L.L.Bean rain jackets are expensive but also necessary to keep the children warm and willing to stay outside even in the middle of driving rain. Winter coats, wool layers, and socks are equally expensive but vital in our New England winters. It is difficult to observe frogs if you don't have puddle pants and almost impossible to explore the creek without watertight boots.

Mindful of these costs, we created a gear lending library for the present and future Forest Gnome families. Each current Forest Gnome family has been asked to donate one gently used item, and preschool staff continually visit thrift stores and resale boutiques for good-quality gear for our use. As of October, we have amassed quite a collection of fall items and are just beginning to see a few winter jackets, base layers, and snow pants come in. Items that are donated but are not the right fit for an outdoor preschool program are given to Cradles to Crayons, an organization that provides clothing to poor and homeless children in the surrounding community. More donations come in every day. Our admission application

WINTER CLOTHING GUIDE

WHAT TO WEAR

- Insulated, waterproof boots
- Wool socks, silk/synthetic liners a plus
- Base layer: wool, silk, or polypropylene long underwear top and bottom (no cotton!)
- Mid layer: long-sleeve wool or fleece sweater and fleece pants
- Over layer: Insulated waterproof jacket with hood and insulated waterproof pants
- Gloves: waterproof, insulated liners a plus
- Fleece or wool hat

BACKPACK

- Water bottle

PLEASE PACK IN LABELED ZIP-TOP BAGS

- 1 extra underwear
- 2 extra wool socks
- 1 pair of long underwear
- 1 pair of fleece pants
- 1 extra fleece or wool hat
- 2 extra pairs of insulated gloves
- 1 set of lightweight waterproof rain gear





is being changed to draw attention to our gear lending library, and the parent handbook has been edited to encourage parents to ask for help outfitting their child.

After the rainstorm passed, the children took advantage of the wet weather and the abundance of water in our rain barrel. They took turns loading a wheelbarrow and using various kitchen implements borrowed from our “bakery” in the sandpit. Once the wheelbarrow was successfully full, one child directed our oldest gnome in the movement of the wheelbarrow and the perfect

placement for their “river.” While the younger gnomes delighted in the cascade of water as they dumped the wheelbarrow, others grabbed pieces of tree bark and sticks and tried to dam up the flow. Still others tried to float leaves in the temporary stream. Fortunately, it was warm and everyone was wearing good boots. Plans were made to construct a bridge the next time there was a rainstorm, and everyone agreed that water made everything more fun.

“Teacher, I hope it rains tomorrow,” were Dakota’s parting words.

NATICK COMMUNITY ORGANIC FARM’s Forest Gnomes Waldkindergarten (German for forest kindergarten) program was established in 2009. We are a nature program for preschool children in a classroom without walls, changing with the seasons. Our gnomes are outside in all weather, through the fall, winter, and spring. Grounded in the values of a traditional Waldkindergarten, our minimally structured program focuses on free play, where exploration and imagination guide our gnomes every day in our beautiful woods.

Best Practices in a School Garden

by Wendy Robins



Santa Barbara, California



Having twenty or more young children in a school garden can be challenging. There is a lot going on in addition to the day's lesson and activity. Weather (rain, wind, heat), animals (birds, rodents, insects), and things to pick up (dirt, sticks, leaves) can get the class off track very quickly. Establishing routines and having a plan and a backup plan are essential.

At my two schools, we almost always start our garden lessons at the picnic tables in front of a chalkboard: our outdoor classroom. I write and draw pictures of the day's objective. Many of the students are TK (traditional kindergarten) through first grade (ages four to six) and are beginning readers, so the first thing we do is sound out and then read what we will be learning about. We also take a moment to observe the weather (is it hot? windy? cloudy?) and acknowledge any other potential distractions (helicopters, hawks, another class walking by). It is important to be flexible and use these teachable moments.

Our first activity at the beginning of each year is a discussion to establish appropriate garden behavior. The children tell me their ideas of how to be safe and smart in the garden, and together we create our garden agreement, which is really just three rules, framed in a positive way.

GARDEN AGREEMENT

- Walk on paths. Watch where you walk.
- Respect everyone and everything. Keep us all safe.
- Ask before picking.

For the first half of the year, the garden agreement is reviewed before every garden activity. It gets repeated as necessary throughout the remainder of the year.

A typical lesson in the garden uses literature as a jumping-off point. I read aloud from either a fiction or nonfiction book related to the day's activity. Any supplies (clipboards, worksheets,

pencils, magnifying glasses) needed for the class are assembled ahead of time and ready to go in a separate area. After the book, there's a quick review of our objective and then we're off to the garden to sketch, observe, or count. If our main activity is art based, we come back to the picnic tables to color, paint, or use glue.

When a lesson involves working in the garden (planting, harvesting, or using tools), the class gets divided into three groups and we rotate everyone through. I often have a classroom teacher with me, so she stays with the groups at the tables and I take the “working” group. I have found that the magic number for a working group is six—however we frequently have more than that but never more than nine.

It is okay to spend a short time in the garden in the beginning of the year, fifteen to twenty minutes, and then go for longer periods of time as the children become accustomed to learning and working outdoors. Even with a quick lesson,

some children will finish early and ask what else they can do. Having a few extra tasks or activities available will keep everyone busy until it is time to clean up. Some of my favorite extra tasks include the following:

- Children can make a picture of themselves in the garden, their favorite flower or insect, and so on.
- Identify a type of weed and have the children collect them in a bucket.
- Clean tools.
- Look for or catch insects or lizards.
- Explore and have free time.

Being prepared will make your garden time successful. Having the lesson plan, materials, and extra activities ready to go are all essential. Be sure to be equipped for emergencies. Always have a first aid kit nearby as well as a list of children with allergies.

EXPLORE ECOLOGY is a nonprofit organization that oversees a garden-based education program in over twenty elementary schools in Santa Barbara County. I work at two schools, seeing children in grades TK–8 in the garden once each week for thirty to sixty minutes. Sometimes we have a structured lesson, sometimes we perform garden work, and always we explore our beautiful gardens.

Forest Teacher Tools



Marion Cross School
Norwich, Vermont

by Jennifer Newberry



TEACHER APRONS

One tool that saves time and keeps me efficient at taking anecdotal records is a teacher apron. I can record the important work that the children are doing in the forest. Parents love the stories of learning, especially when I can capture the exact words, pictures, or even video of their children in action.

With just a couple yards of fabric, you can customize your own teacher apron to fit your needs. I was fortunate to have my mom and her friend make six of these aprons. Each adult has one of these to wear on our forest days. One assistant wears her apron every day, even in the classroom. Here is a list of the contents of my apron:

- **Cell phone and/or camera.** We communicate with the school office through our cell phones. I take many pictures and capture video of learning.
- **Flip-book with quick games.** Attention can be redirected with a game. This has been helpful to have right at my fingertips.
- **Permanent marker and a 6½-by-4½-inch piece of cardboard with label paper attached with a binder clip.** This is used to take anecdotal records. I take the sticky label and attach it to students' files so that I can use it as a reference when writing report cards and communicating with parents.



- **Band-aids and antiseptic wipes tied together with hair ties.** Often I will notice that someone will need to have their hair tied back so they can see. Facial tissues are also a must-have.
- **Every adult has a list of our activities and the plan of the day.**



One fall afternoon in the forest, my students and I were transitioning from one core routine to another when I overheard the following conversation. Without my teacher tools, I wouldn't have been able to capture the beauty of it. This is evidence of the connections that these two students are making with the natural world.



“Sometimes trees just tell the truth.”

—Josie, age six

Sally, age five, and Josie, age six, were both alert and relaxed, observing a tree and conversing with each other about all the things that they noticed about the tree. They decided that the tree was just like Josie and her twin brother, Ben. It had started as one tree and grown into two. Josie explained that they were in their mom’s tummy together and were born just moments apart. Sally chimed in, “And now Josie is in our class and Ben is in Ms. Morse’s class. They were together

and now they are apart—just like that tree.” Josie noticed another tree close to it and said, “Maybe next year we will be like that tree and be in the same class.” This tree had started to grow with one trunk, then split off into two, and then joined into one trunk again. I congratulated them on noticing the similarities between Josie and Ben and the trees. Josie’s matter-of-fact response was “Sometimes trees just tell the truth.”

CONNECTIONS TO STANDARDS

COMMON CORE STATE STANDARDS

CCSS.MATH.CONTENT.K.MD.A.2

Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. Describe and compare measurable attributes. (*Sally and Josie compared the trees with the twins.*)

CCSS.MATH.CONTENT.K.MD.A.1

Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

MARION CROSS SCHOOL is a nurturing kindergarten-through-sixth-grade public school located in Norwich, Vermont. There are currently two full-day kindergarten classes that go out into the forest for most of the day on Fridays. The Milton Frye Nature Preserve has much to offer, including natural streams to explore the properties of water, trails with a wide variety of trees that change with the seasons, and wildlife that depend upon both. These resources give children tangible ways of working with and in nature to increase their intimate connection to it. Some investigations might take the whole school year as we explore the changes that occur in nature over time.

