

## GARDEN NOTEBOOK

### Learning ABC's And Sowing Seeds

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**T**HE current edition of Green Teacher, a magazine devoted to schoolyard gardening, suggests the following exercise: ask children to list their favorite brand names on a sheet of paper and draw the corresponding logos. Then ask them to list types of trees and draw their leaves.

You can imagine the results.

A century ago botany was taught in grade school alongside arithmetic and reading. In those days, plant hunting was high adventure, and botanists were stars. But their fame faded, along with plant science's standing in school curriculums. When I was in grade school in the early 1960's, my only exposure to horticulture was sowing one sunflower seed in an eggshell.

But as the environmentally conscious children of the 60's and 70's began to have children of their own, some schools started to rediscover the educational value of gardens and vegetable patches. "There has been an explosion in the last decade," said Marcia Eames-Sheavly, a horticulturist at Cornell University. "In my county, alone, which includes Ithaca, three-quarters of the schools have gardens. It brings the curriculum to life."

The Willow School, in Gladstone, N.J., is at the forefront of a small group of schools integrating natural surroundings into instruction. The 40 students there, from kindergarten through fourth grade, eat lunch outside whenever possible, and they routinely walk the paths to see wildlife or to play in the garden.

Last week the third graders considered the relative benefits of plain soil versus compost enriched soil, and next month they will sow seeds of winter wheat. "Children learn more in one day playing in the compost and garden than in a year in the classroom," said Dr. Richard Eldridge, the headmaster.

The Willow School was conceived in 2000, when Gretchen Johnson Biedron and her husband, Mark Biedron, were looking for a school for their eldest son, Loring. "We knew we wanted lots of daylight and fresh air," she said. "And we didn't want any toxic chemicals inside the building, but that was about it."

Finding such a place proved harder than they imagined. So the couple founded their own school, assembling a board of trustees and incorporating. The first year, classes were held in a church. Meanwhile the board purchased a 34-acre site with an old farmhouse, a barn and a

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few acres of lawn and scruffy woodland. (Tuition is slightly above average for private schools in the area. Kindergarten, for example, costs \$13,500.)

Mr. Biedron, who is the president of Solid Wood Construction, a company specializing in recycling old barns, acted as the general contractor for the \$5 million construction and landscaping project.



Drawing upon his know-how, a 15,000-square-foot main building went up with exterior walls of stone reclaimed from a demolished barn and window frames remilled from wooden pickle barrels. Bluestone pavers were salvaged from the Big Dig highway project in Boston and stone benches were fashioned from old bridge stanchions.

Nothing from the site is wasted. The hardwood trees that were cleared for construction were made into chairs and tables for the classrooms. Garden clippings are composted. Rainwater from the roof is channeled to a 54,000-gallon cistern underneath paved parking spaces. Aquatic plants remove impurities from the sewage water, which joins the cistern water to be pumped for flushing every toilet in the school. Even the outdoor lighting was designed so that the illumination hits the ground and doesn't escape to pollute the night sky.

Jeffery Charlesworth, the senior landscape architect with Back to Nature, a landscape design firm in Oldwick, N.J., created a modern entry garden to the school. A year after the initial landscaping, it makes a showy first impression. Inside the circular drive is an island with swathes of native panicum, or switch grass; Rudbeckia Goldsturm; and purple coneflower. In most cases this would be called curb-appeal. But the curbs have largely been replaced by swales so that rain runoff flows to planted depressions, mini floodplains with local trees like maple and oak, asters and spring phlox beneath them to take up the water. Lawn, which is dependent on fertilizer and water, has been kept to a minimum, and asphalt, which stops water from percolating into the soil, has given way to gravel.

Last week children were working in the garden, clearing the faded vegetable plants and digging compost. They started by working alone, but gradually formed groups and assigned one another tasks. Melissa Lisbao, a fourth grader, shouted, "Andrew's eating a worm."

Andrew Callahan shouted back: "I am not. I only tasted it."

I asked Melissa — who later discovered a beetle pupa in the compost, examined it and placed it back into the soil — how the Willow School compared to other schools. "Oh, it's definitely an improvement," she said.

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Virginia Angeletti, an 8-year-old third grader, chimed in, "Homework's not like paper, it's like a project."

Virginia may be the perfect example of what the school can offer. "Virginia is very bright and tested well," said her mother, Sara Angeletti, who works in the school's development office. "But she was having difficulty in math at her former, very structured school. She would go to the nurse to avoid that class."

At Willow the children learn to perform simple calculations by adding and subtracting twigs. Now, Ms. Angeletti said, Virginia has a growing appetite for math. But what Virginia likes most is the pond. "It's really beautiful," she said. "There's lots of flowers. If you crouch down, really low, it's a lovely place to hide."

The pond is what Mr. Charlesworth designed for the retention basin that is required by law. Instead of a rock-lined ditch, the wetland was planted to imitate the appearance of natural places. On a recent afternoon children could observe a wolf spider carrying her brood on her back as gold finches swooped across the sedges and rushes in the water to feast on black-eyed-Susan seeds.



In simulated wilderness, nature should not just be about aesthetics. These are places that call for strict botanical purity. Many plants have specific relationships with other flora and fauna, so planting exotic and potentially invasive species threatens the balance. The school teaches that every organism has a special place in the chain of life, and that no link should be broken.

Mr. Charlesworth said he was surprised to learn that some of the plants he had used, including *Iris pseudacorus*, were potentially invasive. But when I voiced my concern, he quickly suggested appropriate replacements already growing on the property. In this case, local *Iris versicolor*.

Of course youngsters do not innately know such things. With luck, they will learn. For now, what distinguishes the Willow School could be summed up by the observation of Hugh Thompson, who is 9: "There's more air."