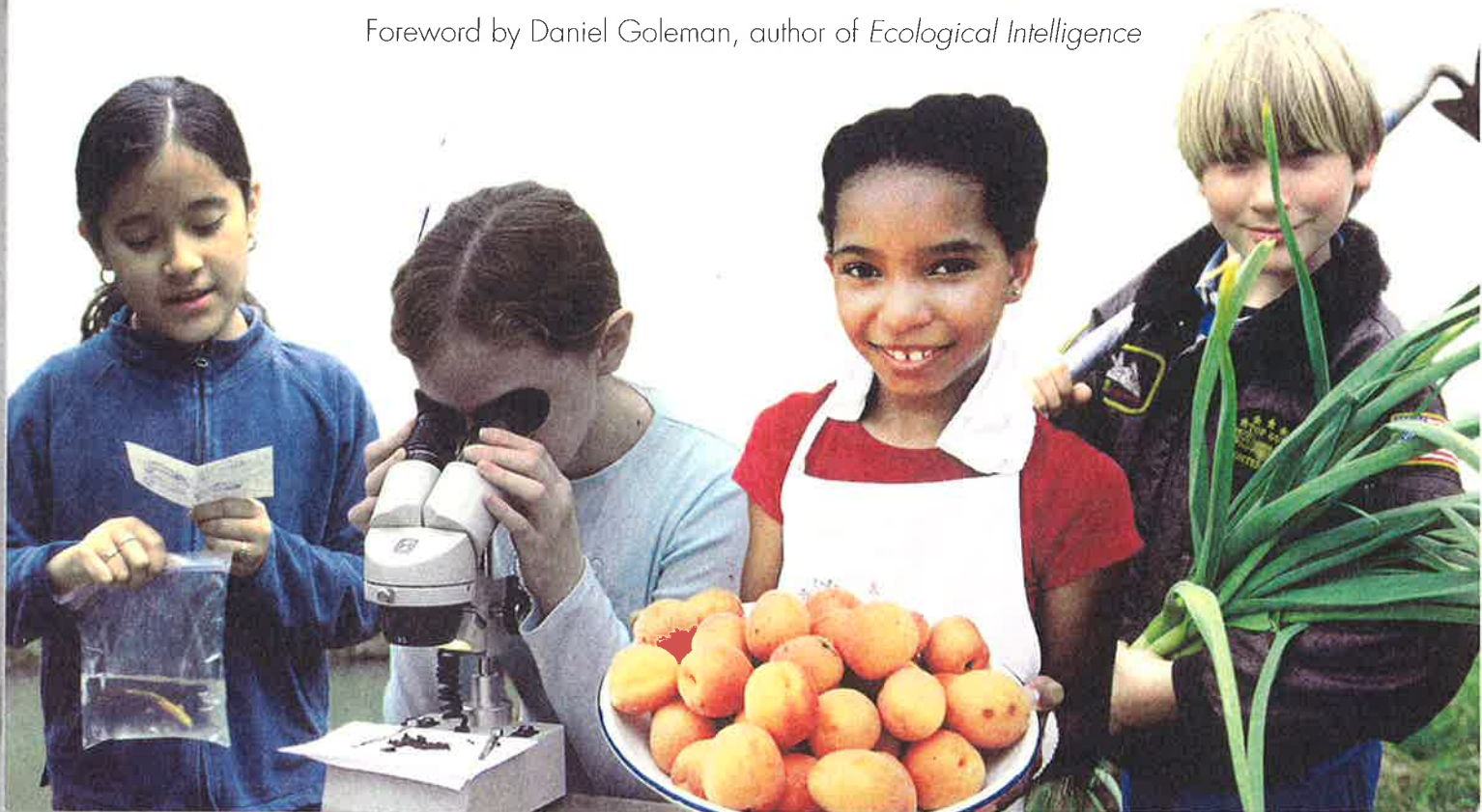


# SMART BY NATURE

**SCHOOLING FOR SUSTAINABILITY**

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Foreword by Daniel Goleman, author of *Emotional Intelligence*



# HOW TO BECOME THE COOL SCHOOL

- What:** Sustainable Schools Project
- Where:** Shelburne Farms and Burlington School District, Burlington, Vermont
- Initiators:** Educational nonprofit and schools
- Key Strategies:** Whole school collaboration to integrate curriculum  
Education for civic engagement  
Outside organization makes community connections on behalf of time-pressed teachers  
Students identify quality-of-life indicators and issue neighborhood report cards



**B**arnes Elementary School had a horrendous reputation, says its former principal Paula Bowen. "It's in the inner city, with high poverty. It's where refugees are first resettled. Anybody who had the wherewithal to get their kids into some other school typically did. Now Barnes is the groovy school, the cool school. Test scores are up. Parents are asking for variances to get *into* Barnes."

The spark behind the turnaround at the Burlington, Vermont, school, says Bowen, was the Sustainable Schools Project (SSP), a collaboration with nearby Shelburne Farms (see sidebar). SSP combines place-based learning, school-wide curriculum planning, partnerships with organizations in the surrounding community, and hands-on civic engagement in which students learn that they can make a difference.

In 2000, Shelburne Farms helped organize several months of forums around the state to ask, "If we want to prepare students for the twenty-first century, what are the gaps in our state education standards?" The forums resulted in Vermont's becoming the first state to incorporate sustainability and understanding place into its standards:

***Sustainability:*** *Students make decisions that demonstrate understanding of natural and human communities; the ecological, economic, political, or social systems within them; and awareness of how their personal and collective actions affect the sustainability of these interrelated systems.*

***Understanding Place:*** *Students demonstrate understanding of the relationship between their local environment and community heritage and how each shapes their lives.<sup>14</sup>*





**The mural at Barnes School includes a quote from Matthew Fox: "Sustainability is another word for justice, for what is just is sustainable, and what is unjust is not."**

In response to educators requesting assistance in teaching the new standards, Shelburne Farms designed a series of professional development workshops and contributed the bulk of the writing of the "Vermont Guide to Education for Sustainability," still one of the best introductions to the topic.<sup>15</sup> The state standards had intentionally left the definition of "sustainability" broad, out of a belief that communities should create their own definitions based on their needs and visions. The for-

mulation that Shelburne Farms chose, "Improving the quality of life for all—socially, economically, and environmentally—now and for future generations," partly reflects the work of the Burlington Legacy Project, a citywide effort to envision a sustainable Burlington.<sup>16</sup>

For Shelburne Farms, civic engagement, defined as hands-on involvement to address issues identified as important by the community, links



# SHELBURNE FARMS

Shelburne Farms, located seven miles south of Burlington on the shores of Lake Champlain, is a 1,400-acre working farm, a National Historic Landmark, and a national leader in schooling for sustainability.<sup>17</sup> Founded in 1886 as a model estate to demonstrate innovation in agriculture, the farm is managed today as an example of sustainable farming and forestry. Income from farm operations, catalog sales, and an inn and restaurant in historic buildings on the site is cycled back into education programs, which are more powerful for being rooted "in the reality of grazing cows, crafting cheese, tapping maples, sawing lumber, and planting seeds."<sup>18</sup>



**Shelburne Farms, a working farm, model of sustainable agriculture, and leader in schooling for sustainability.**

The farm's dozens of onsite and outreach programs include numerous publications, ecology and agriculture classes and camps, consultation and professional development for educators and community organizations, and workshops and resources to help farmers offer agricultural education on their farms. Shelburne Farms, the collaborator par excellence, has founded and participated in a dizzying array of national and regional partnerships, including the Burlington School Food Project, Vermont Education for Sustainability,<sup>19</sup> Vermont FEED,<sup>20</sup> A Forest for Every Classroom,<sup>21</sup> Place-based Landscape Analysis and Community Education,<sup>22</sup> the Conservation Study Institute,<sup>23</sup> the Place-based Education Evaluation Collaborative,<sup>24</sup> and the Foundation for Our Future.<sup>25</sup>

sustainability and schooling. "Students must not get lost in the complexity of the world," writes former Sustainable Schools Project coordinator Erica Zimmerman, "nor become simply rooted in compassion for it. They must have some measure of control and power within themselves to effect the changes they now understand are needed."<sup>26</sup>

Zimmerman identifies three elements essential to making education based on civic engagement successful:

- 1. Understanding connections.** Learning gains meaning and depth and students begin to comprehend how human and natural systems work when they see the networks of interconnection within their community.
- 2. Connecting to place.** Students need to know their own place before they can make the leap to thinking globally. Writes Zimmerman, "They become literate in their local place. They gain names and stories for the world around them—the source of their water, the long-ago business owner who built the big brick house, the name of the bird that sounds their wake-up call. With such knowledge, they have more reason to care for this world and become stewards of it."<sup>27</sup>
- 3. Making a difference.** In order to become motivated and engaged citizens, students need to know that they can make a difference. Therefore, schooling for sustainability depends on hands-on projects that are meaningful, have academic integrity, are developmentally appropriate, and can be completed by students with the time and resources available to them.

## Big Ideas and Essential Questions: The Birth of the Sustainable Schools Project

Colleen Cowell, a dynamic fourth- and fifth-grade teacher at Champlain Elementary School on Burlington's suburban fringe, attended one of Shelburne's workshops on teaching sustainability. She thought that the emphasis on community was very important. Taking that a step further, she questioned the impact of individual teachers putting the ideas of sustainability in practice, one by one. What if a whole school worked together? In 2001, with Cowell's enthusiasm, and strong support from principal Nancy Zahnhiser, Champlain launched the Sustainable Schools Project in collaboration with Shelburne Farms. Three years later, the project migrated to inner-city Lawrence Barnes Elementary School.

Teachers at the schools, working with Shelburne Farms consultants, identified nine "big ideas of sustainability" as a framework for integrating the curriculum: diversity, interdependence, cycles, limits, fairness and equity, connecting to place, ability to make a difference, long-term effects, and community. SSP staff assisted the faculty to create "curriculum maps" of the progression of these ideas from grade to grade and from the classroom to the schoolyard, to the neighborhood, and eventually to the wider community. They identified "essential questions" to tie the concepts of sustainability together while crossing subject-matter boundaries. For instance:

- What do all living things need in order to live a safe, healthy, and productive life?

- What does it mean to be a citizen in our community?

- What connections and cycles shape our Lake Champlain ecosystem?

- How do we take care of the world, and how does the world take care of us?

The big ideas and essential questions helped recapture portions of the curriculum that testing mandates, such as those of No Child Left Behind legislation, had squeezed out. Paula Bowen quotes one of her predecessors at Barnes: "We don't teach science and social studies; we only teach math and reading. That's boring for kids," says Bowen. "They need something to get their teeth into. Connecting science to social studies and literacy has been part of what Shelburne Farms has helped us to do."

"We hoped to demonstrate how using the big ideas of sustainability to enhance existing curriculum was engaging and something they were already doing—with a slight twist," says Shelburne Farms SSP staff member Tiffany Tillman.<sup>28</sup> "Instead of a unit on living organisms," explains Barnes third-grade teacher Anne Tewksbury-Frye, "you're looking at it as a unit on systems and how those systems interact and how you can address other systems in a more global fashion."

Teachers and students are learning to make other connections as well. Burlington serves as a resettlement site for Somali Bantu refugees. Bantu students just learning English often speak little in class. One day SSP staffer Angela McGregor brought a chicken from the farm for a first-grade study of animal life cycles. With the appearance of the chicken, the Bantu students came to life,



overflowing with stories about their experiences with chickens in Africa, demonstrating expertise, and gaining instant credibility with other students. The chicken life cycle lesson unexpectedly became a cross-cultural reminder of the power of learning that is grounded in children's experiences. Chickens now make regular visits to Barnes School classes.

SSP has helped schools discover the teaching potential of their own place. "Something I never did before SSP was to look at what resources we have on the school property," one first-grade teacher told a researcher. "Now that I have some knowledge about vernal pools, I know I can make use of them. Before it was just a big wet spot in the playground, and now I know it is teeming with life."<sup>29</sup> SSP educators have assisted Barnes teachers in acquainting students with nature in the city. They have discovered that children can learn more about nature from the squirrels they can observe every day than from animals they see only in books. They have made contacts that teachers

**The "campus" for sustainability study encompasses both city streets and natural open spaces.**



did not have time to make with local farmers, experts on the indigenous Abenaki people, artists, business people, and myriad others who have been happy to talk to students, lend resources, and contribute to student projects.

## **Healthy Neighborhoods/ Healthy Kids**

Place-based education, community connections, and civic engagement converge in Healthy Neighborhoods/Healthy Kids, a fourth- and fifth-grade project within SSP. Students brainstorm quality-of-life indicators in a neighborhood. Their lists have included green places with plants and flowers, habitat for animals, more trees for better air, access to healthy food, signage and speed bumps to calm traffic, murals instead of graffiti, safe and clean places for children to play, and spots for neighbors to meet.

The students create report cards, which they use to grade their communities. Neighborhood walks can be eye-openers. Champlain draws students from both low- and high-income areas; teachers often assign students to walk neighborhoods different from their own. Children from higher-income parts of the city discover that some of their classmates live without parks, tennis courts, stop signs, or other things they take for granted. But they also find features that are absent in their own neighborhoods, like community centers where kids can hang out.

The report cards become the starting point for civic engagement, leading to student-generated projects such as creating habitat for local birds, cleaning up streams, raising funds to build bike

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racks, or organizing block parties to bring neighbors together. Students also present their report cards to local government bodies. State Senator Tim Ashe, a former Burlington city council member, observed, "I think we grown-ups tend to take many things for granted, both good and bad, because we've learned to live with them. Kids are able to see for the first time a broken sidewalk, graffiti on a building wall, or a faltering street light and ask, with legitimate confusion, 'Does it have to be this way?'"<sup>30</sup>

### **The Case of the Missing Park**

The students have sometimes discovered that they know more about the city than the authorities responsible for it. On one occasion, Barnes students found a park that the city had forgotten. They contacted the Burlington Parks & Rec Department about this park, where they didn't feel safe at night, to suggest the installation of lights. "We don't have a park on South Champlain Street," said the Parks Department. "Yes, you do," students responded.

"There's a sign there that says 'Parks & Rec Department.' We want to tell you about it."

Another time, children from Barnes reported to the city council that the street in front of the school had no School Zone sign, making for dangerous traffic. The city council immediately drafted a resolution to put in a sign. The director of the public works department, a city council member, and the mayor came out to unveil the sign and praise the students' initiative. A small matter, perhaps, but the city's response and the media coverage it generated were important to a neighborhood more used to finding itself in news stories about crime and drugs.

After Barnes joined the Sustainable Schools Project, reading scores rose 22 percent and math scores 18 percent, parents became more involved, residents began to find reasons to take pride in the neighborhood and to see the school as a resource within it, *and* Barnes became the "cool school." In 2008, the school that parents once shunned was chosen to become an Academy for Sustainability for the whole district.