



# EETAP *Resource Library*

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## **School Garden-Based Environmental Education: A case study**

Environmental education practitioners have strongly proposed a cross-disciplinary approach for bringing environmental education into the class room. The nature of teaching and learning materials, those currently established and those under review, enables educators to achieve this. However, one reservation for educators is the lack of time and resources. The following case study suggests some pointers through garden-based activities by using the school garden as a learning context and for highlighting environmental concerns and issues within the school boundaries.

### **Waynewood Elementary School, Virginia**

Mrs. Bowman's second grade class at Waynewood Elementary in Alexandria, Virginia, was an ethnically diverse group of 19 students representing eight different countries. As one of the Fairfax County schools that offered English as a second language to recent immigrants, children from around the world were placed in classes with children born and raised in the U.S. Through this total immersion approach to learning English the new children generally 'graduated' within three years at an excellent fully functional level. In this type of classroom Mrs. Bowman found a number of challenges above and beyond basic communication. Foremost, there was the question of how to teach a myriad of subjects in a way that all the students could relate and understand despite their divergent cultures and backgrounds.

The most substantial and engaging way in which Mrs. Bowman succeeded in reaching her second graders was by establishing a school garden. With the help of parent and community volunteers and other school staff, they created a school garden project modeled upon the 'garden in every school' initiative begun by Delaine Eastin, State Superintendent of Public Instruction in California. It was Ms. Eastin's desire to create opportunities for children to make healthier food choices, to participate in experiential learning, and to develop a deeper appreciation for the environment, the community, and each other through school gardens. A study by the California Children's *Five a Day - Power Play Campaign* suggested actively involving children in gardening to increase their fruit and vegetable consumption. At the same time, teachers could effectively use garden-based education to build bridges

between school and community, promote intergenerational knowledge transfer, develop environmental awareness in students by caring for a living environment, provide opportunities for cultural exchange, and build student life skills (California Department of Education, 1995).

Every subject that Mrs. Bowman needed to cover in her curriculum was integrated into the school garden project at Waynewood. Understanding the nature of soil, weather, interactions with other organisms, and the necessary ingredients for successful growing of plants was a critical part of establishing the garden. Students were introduced to the scientific methods of investigation by becoming vegetable detectives: researching the world origin of their vegetable, observing the life cycles of their plants, analyzing which nutrients were found in their vegetable and how those nutrients are used in human bodies, and describing the parts of their plant that are edible. Mathematics was essential for the design of the garden

and subsequent measurement of plant growth. The history and cultural significance of each garden plant were considered. Stories about gardens and the world outside the classroom were regularly read by teacher and students. Art class consisted of drawing the plants and other living creatures found in the garden. The end of the school year culminated in a festival held in the school cafeteria. All of Mrs. Bowman's students were not only able to proudly share the garden bounty with the other students and staff of the school; they were also able to communicate the particulars of each fruit or vegetable being eaten and the environmental factors associated with them.

### **Outcomes**

This case study presents a methodology where the teacher successfully provided a learning environment to students who not only were able to experience real life issues but also gained insights by being involved. Teaching environmental education using cross-disciplinary approach and simultaneously teaching hard core subjects such as Maths, Science and Geography appears to be way ahead as suggested by environmental educators.

### **Need more resources?**

Many resources are available to help educators

and others use environmental education as a tool to accomplish the goals of learning and teaching. There are a number of other resources available to help educators use environmental education to help create a comprehensive curricula. Some are available on the databases of Educational Resources Information Center (ERIC) and Eisenhower National Clearinghouse (ENC). On line, these resources can be accessed by typing <http://www.eelink.net>

Page down to CLASS-RESOURCES DIRECTORIES, to EE-RELATED EDUCATION SITES that will lead you to ERIC or ENC. You will then be able to search ERIC and ENC databases by following the appropriate pointers. Some resources from the two databases are identified below.

#### **From ERIC**

Demas, S., School Gardens and Environmental Education *In Nature Study*; v32 n3 p3-5 1979 (EJ200262).

This article discusses the use of garden projects to teach environmental concepts. Also described are several youth garden programs and home/school programs in existence throughout the country.

Monk, S. K., Integrated Curriculum in a Tiny Texas Garden *In Dimensions of Early Childhood*; v23 n4 p8-9 Summer 1995. (EJ510569)

This paper describes how a first-grade class in East Texas learned to garden in a project that encourages children to plant seeds and watch their plants mature while developing skills in mathematics, science, reading and writing, and interpreting a calendar.

Greenhalgh, L., An Infant School Project *In Environmental Education*; v50 p11 autumn 1995 (EJ546447)

This article describes a wildlife garden developed on school grounds which converted a large, derelict quadrangle into an outdoor classroom used by the staff across the curriculum. The area was divided into various habitats including ponds, mini-woodlands, and herb garden.

Hanscom, J. T., Leipzig, F., The Panther Patch: A Far North K to 6 Gardening Project *In Green Teacher*; n38 p10-13 April-May 1994 (EJ496877)

This article outlines the development of an urban elementary school gardening where children learn science and responsibility for the environment.

Moore, R. C., Children Gardening: First Steps Towards a Sustainable Future *In Children's Environments*; v12 n2 p222-32 June 1995 (EJ509046)

Children's gardening is introduced within the broader frame of reference of sustainable development, regenerative design, and biodesign. Gardening in the primary grades is proposed as one of the most feasible

pedagogical approaches for ensuring a daily learning experience that provides contact with nature.

#### **From ENC**

Life Lab Garden Log (1993). Developed by Life Lab Science Program, Inc. Santa Cruz, CA: Lets Get Growing! (ENC-003373)

Life Lab is an interdisciplinary program of life, earth, and physical science in which students learn science concepts by building tools, testing ideas, and watching changes in the world around them. A class garden and hands on activities form the core of the program, encouraging students to cooperatively investigate life cycles, weather, animals, habitats, and more.

GrowLab: activities for growing mind,. (1990) Developed by the National Gardening Association. Burlington, VT: National Gardening Association (ENC-001518)

This program, developed for grades K to 8, provides a context in which students can use their own questions and ideas to inspire hands-on investigations of the natural world, explore key plant science and environmental concepts, and gain confidence in their ability to do science.

Jurenka, N. A. and Blass, R. J., Cultivating a Child's Imagination Through Gardening (1996). Englewood, CO: Teachers Ideas Press (ENC-008702)

This book, written for grades K to 6, is organized around a theme of gardening and uses childrens' literature to introduce students to multi-cultural literature, ecology, and the impact of plants on the environment, world economics, and politics.

Waliczek, T. (1997). KinderGarden [Internet resource] College Station: Texas A&M University. (ENC-011163)

This World Wide Web (WWW) site, designed for students in grades K to 6, presents materials about gardening in schools. A step by step guide to starting a school garden is featured along with a list of garden themes, an herb garden or a fiber garden.

Raymond, D., (1991). Down to Earth Gardening Know-how for the 90's: vegetables and herbs. Pownal, VT: Storey communications, Inc. (ENC-003367)

This gardening manual incorporates the lifestyle changes of the 1990s into the author's forty years of gardening experience. Also included is information planning, fertilizing, cultivating, and harvesting a garden.

This information sheet was prepared by Mark A. Miller, Joe E. Heimlich and Sabiha S. Daudi of EETAP Resource Library at Ohio State University Extension.

EETAP Resource Library is a project of Environmental Education and Training Partnership effort. The goal of the Resource Library is to increase educators' access to and use of databases such as ENC and ERIC. This information sheet may be freely reproduced for educational purposes.