

## The Academic Benefits of a Garden-Based Curriculum

### Part Two: Sustainability and Ecology

School gardens are enjoying a resurgence of popularity in the United States, and with good reason. School and community gardening programs foster ecological consciousness and allow students to participate directly in a sustainable system. In this, part two of our series of one-page briefs, we provide the foundation for the huge impact upon students' attitudes and behaviors regarding conservation ecology.

An emerging and critical issue, particularly emphasized in research at the primary school level, is conservation, ecology, and the sustainable use of natural resources. We maintain that an ideal way to incorporate these topics into a curriculum is through the use of school gardens. A garden-based curriculum allows students to grapple with important biological concepts in a hands-on environment, and additionally it encourages understanding.

- Two environmental education classes at Missouri Botanical Garden were evaluated<sup>1</sup> to determine their effects upon attitude and knowledge change in elementary school children. The lesson plan about the water cycle increased positive attitudes toward learning about plants and the environment. This lesson had a more in-depth hands-on component, which may account for the difference in results.
- A study<sup>2</sup> was conducted to determine whether a food systems-based approach to a middle school curriculum resulted in increased knowledge and concern about ecology and food systems. Control and intervention schools were compared. Significant improvements were found for the intervention school in overall eco-literacy assessment scores, garden subscale scores, and health.
- A primarily qualitative study presented in Australia showed that "school-based community gardens represent a significant opportunity to embed nutrition, physical activity and environmental sustainability into mainstream curricula."<sup>3</sup>
- Project GREEN, Garden Resources for Environmental Education Now, is a garden program designed to help teachers integrate environmental education into their classroom using a hands-on tool, "the garden." A Texas A&M study<sup>4</sup> showed that students participating in the Project GREEN garden program had more positive environmental attitude scores than those students who did not participate. Second grade students, in both the experimental and control groups, had more positive environmental attitudes than fourth grade students. In addition, this research found a significant correlation between the number of outdoor related activities students had experienced and their environmental attitudes.

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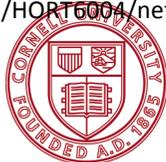
<sup>1</sup> Kahtz, A.W. (1995). Impact of environmental education classes at missouri botanical garden on attitude and knowledge change of elementary school children. *HortTechnology*, 5(4), 338-340.

<sup>2</sup> Murphy, Michael, & Schweers, Erin. (2003). Evaluation of a food systems-based approach to fostering ecological literacy. *Proceedings of the Final Report to Center for Ecoliteracy*, <http://www.ecoliteracy.org>

<sup>3</sup> Somerset, Shawn. (2005). School-based community gardens: re-establishing healthy relationships with food. . *Proceedings of the Paper presented at National Conference of Home Economics Institute of Australia, Hobart, Tasmania*.

<sup>4</sup> Skelly, Sonya. (1997). The effect of project green, an interdisciplinary garden program, on the environmental attitudes of students. Retrieved from

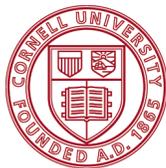
<http://www.hort.vt.edu/HORT6004/network/schoolgardens.html>



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The utility of school gardens for education about sustainability and ecology is indisputable. If you are interested in starting a school garden program, an excellent guide illustrating age-appropriate activities by grade is available from the [California Department of Education](#). Also visit the [Grow Your Program](#) resources within the [Cornell Garden-Based Learning Program](#) website.



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