



## Environmental Education: Key Questions and Answers

*Q. What is environmental education?*

A. Environmental education is the study of the relationships and interactions between natural and human systems. It is interdisciplinary, combining aspects of natural sciences such as ecology and geography with aspects of social sciences such as economics, law, and public health. It is hands-on, student-centered, inquiry-driven, and relevant to students' everyday lives.

Two National Science Foundation boards have underscored the importance of environmental education and have called for a systematic approach to environmental education. Business leaders such as DuPont CEO Chad Holliday Jr. believe an environmentally literate workforce is critical to their long-term success and profitability. A Roper Poll found that 95 percent of the public supports environmental education in schools.

*Q. Why is environmental education important?*

A. Environmental education is important for three key reasons:

- It has a positive impact on student achievement in core subjects. When integrated into the core curricula or used as an integrating theme across the curriculum, environmental education has a measurably positive impact not only on student achievement in science but also in reading, math, and social studies. Moreover, outdoor activities increase student engagement and interest in science and in all core subjects.
- It helps improve the health of children. Field experiences and related programs as part of the regular school curriculum contribute to healthy lifestyles through outdoor recreation and sound nutrition. Getting kids outdoors to exercise, play and experience their natural world is an important tool in the battle to prevent obesity, alleviate attention deficit disorder and address other related health problems.
- It provides critical tools for a 21<sup>st</sup> Century workforce. We will be passing on complicated environmental problems to future generations. We must give the next generation a solid understanding of these problems and the basic tools to overcome them and make informed choices in their own lives. Business leaders also increasingly believe that an environmentally literate workforce is critical to

their long term success. Finally, environmental education helps prepare students for real-world challenges.

*Q. What is the difference between this initiative and the Environmental Protection Agency's (EPA) environmental education program?*

A. The focus of the two programs is quite different. EPA's environmental education program provides small "seed" grants (currently a total of roughly \$5 million a year for all grants nationwide) primarily to non-profit organizations to help develop local environmental education programs. The funds also support undergraduate and graduate internships and fellowships at EPA, the National Environmental Education Foundation, and an awards program. EPA's program largely supports "informal," non-school-based environmental education programs.

NCLI focuses specifically on enhancing environmental literacy through "formal" public K-12 education. Consistent with the No Child Left Behind (NCLB) law, this initiative's focus is on student achievement through the adoption of environmental literacy plans and teacher training programs.

To address our nation's growing needs for environmental education, we need both informal and formal programs and federal funding to support both.

*Q. Are these literacy plans a new mandate on the states?*

A. No. First, states are not required to submit environmental literacy plans. The plans are only a condition to receive funds from the programs authorized under the No Child Left Inside legislation. Funds in the Act can be used to develop these plans. Second, the legislation allows each state to define the content of environmental literacy as part of a broader planning process. Almost every state has already worked though plans as part of existing, or pre-existing educational policy statements, and adding environmental education so that graduates are assured of being environmental literate should not be a costly or time-consuming burden on states.

Moreover, planning at the state level is consistent with the NCLB law and will allow for better coordination and integration of related programs and resources that might currently exist – whether the programs or resources come from ongoing school efforts, state or local natural resources agencies or parks, or not-for-profit organizations and foundations. This planning process is more likely to allow systems to target resources to improve student performance as required by NCLB and state and local school system improvement efforts. A planning process will also allow resources to better reach all students, particularly students from economically disadvantaged backgrounds or students with disabilities.

*Q. If states such as Maryland are already moving forward with developing model environmental literacy plans, why do we need federal legislation?*

A. Federal legislation preserves states' authority to tailor their environmental literacy plans to specific state needs. What it specifically provides is policy and funding support to the states and underscores that environmental and outdoor education is a national priority. While the need for environmental education is well-documented and continues to grow, the overall level of federal support for environmental education in both policy and funding is far from adequate.

*Q. What evidence do you have that environmental education has been squeezed out of the classroom?*

A. Research by the Center for Education Policy consistently documents how the curricular focus on reading and mathematics testing requirements has led to a reduction in classroom time spent on science, social studies and other subjects.

Moreover, we know from our experience as environmental educators and from talking with school administrators and teachers across the country that environmental education is being squeezed out of the classroom. The lack of research documentation in this field is due in part to the lack of a national policy to make environmental education. Likewise, there is little, if any, funding available to track and report on such trends. The NCLI Act specifically authorizes a program for national and state capacity-building so that such data can be collected.

*Q: If environmental literacy gets put into the curriculum what gets pushed aside – art, music?*

A: While each state and local school system defines its own curricular approach, several research studies have demonstrated how schools can integrate environmental education into their curriculums without losing any particular content area. This approach – known as using an “environment as an integrating context” for learning – is one of the most popular. Because environmental education lends itself to so many curricular approaches it is often used as the focus in magnet schools and charter schools.

*Q. What evidence do you have that environmental education improves student achievement?*

A. Several studies have found that, when environmental education is incorporated into the curriculum or used as an integrating context for learning, students perform better on standardized tests in reading, math, writing, social studies, and science. Other studies have documented that environmental education achieves the following: improves critical thinking skills; motivates students to become more engaged in the classroom and achieve more strongly in their schoolwork; reduces discipline and classroom management

problems; encourages civic engagement and environmental stewardship; and better problem-solving skills. These studies include:

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- Bartosh, Oksana. 2003. Environmental Education: Improving Student Achievement. Thesis for a Masters in Environmental Studies, Evergreen State College, Olympia, WA.
- Athman, Julie and Monroe, Martha. 2004. The effects of environment-based education on students' achievement motivation. *Journal of Interpretation Research*, 9(1): 9-25.
- Duffin, Michael., Powers, A., Tremblay, George, and PEER Associates. 2004. Place-based Education Evaluation Collaborative: Report on Cross-program Research and Other Program Evaluation Activities, 2003-2004. ([http://www.peecworks.org/PEEC/PEEC\\_Reports](http://www.peecworks.org/PEEC/PEEC_Reports))
- Ernst, Julie Athman and Monroe, Martha. 2004. The effect of environment-based education on students' critical thinking skills and disposition toward critical thinking. *Environmental Education Research*, 10(4): 507-522.
- Falco, Edward H. 2004. Environment-based Education: Improving Attitudes and Academics for Adolescents. Evaluation report for South Carolina Department of Education.
- National Environmental Education Training Foundation (NEETF). 2000. Environment-based Education: Creating High Performance Schools and Students.
- State Education and Environment Roundtable (SEER). 2000. California Student Assessment Project: The Effects of Environment-based Education on Student Achievement.
- American Institutes of Research. 2005. Effects of Outdoor Education Programs for Children in California.