

Environmental Education: *Benefiting Students as well as the Environment*

Section I. Teaching Environmental Concepts in the Classroom: What, Why, How

WHAT is Environmental Education?

From: *Classroom Earth*: www.classroomearth.org/teaching-about-the-environment

Classroom Earth, a program of The National Environmental Education Foundation, defines environmental education as the process, activities, and experiences—across disciplines—that lead students to have a greater understanding of how the earth’s resources and natural systems work and interact with each other and with human-made systems.

As awareness about environmental issues evolves and becomes more sophisticated, students move towards environmental literacy. Ultimately, environmental education, as it develops environmental literacy, helps foster an understanding of how everyday decisions, lifestyle choices, and activities impact the finite resources of this planet.

Environmental Education in the Classroom and Beyond

Environmental education can be taught in formal settings (schools or other traditional academic institutions) or in non-formal experiences. In addition, environmental education can and should be an integral part of every discipline. *Classroom Earth* is one site that helps incorporate environmental learning into subject areas, and their Resource Library has many ideas.

Environmental Education Guidelines

Sifting through the many environmental education resources available can be daunting. Determining the quality of materials can be even more overwhelming. The North American Association for Environmental Education (NAAEE) recommended in their 1998 *Environmental Education Materials: Guidelines for Excellence* that all materials and activities:

- Present fair and accurate information that describes environmental problems, issues, and conditions, and also reflects the diversity of perspectives on them;
- Ensure that information about the natural and built environments, ecological concepts, attitudes and values are presented in sufficient depth;
- Emphasize skill building, including creative and critical thinking;
- Are oriented towards civic responsibility;
- Feature instructional techniques that create an effective learning environment, including learner-centered instruction, multiple intelligences, and relevant topics; and
- Are well designed and easy to use.

EE Builds Leadership Skills

Environmental education emphasizes cooperative learning (i.e., working in teams or with partners), critical thinking and discussion, hands-on activities, and a focus on action strategies with real-world applications. As a result, students who study EE develop and practice the following leadership skills:

- Working in teams
- Listening to and accepting diverse opinions
- Solving real-world problems
- Taking the long-term view
- Promoting actions that serve the larger good
- Connecting with the community
- Making a difference in the world

WHY teach Environmental Education?

The need to understand environmental issues as they relate to everyday life becomes more important—and more urgent—each day. Yet research shows that Americans, in general, know startlingly little about the environment and even less about their personal connections to the natural world. (Environmental Literacy in America: <http://www.neefusa.org/pdf/ELR2005.pdf>)

Without knowledge and understanding of these issues, taking personal action often seems overwhelming and pointless, yet individual actions are at the helm of many environmental problems including high energy consumption, water and air pollution, and urban sprawl. To address these problems, they must be understood. When we incorporate environmental learning into education, students develop an environmental literacy that will help them make informed decisions to protect the environment at home, at work, and in their community.

The State of Environmental Literacy in America

The National Environmental Education Foundation's "Environmental Literacy in America" report, based on ten years of NEEF/Roper survey research and related studies, indicates:

- Only 12 percent of Americans can pass a basic quiz on energy topics.
- Less than half of the U.S. population knows that the cars and appliances they use contribute to global climate change.
- Nearly 80 percent of Americans are heavily influenced by incorrect or outdated environmental myths.
- 56 percent of Americans want to take action to protect the environment, but they don't know what to do.

America's Schools Prepare for the Future with Environmental Education

For more than three decades, environmental education has been a growing part of instruction in America's schools. Responding to the need to improve student achievement and prepare students for the 21st Century, schools throughout the nation now offer some form of environmental education.

- Thirty million students participate in environmental education programs or classes.
- 1.2 million teachers offer environmental education either through environmental science courses or through an interdisciplinary approach.
- More than 300 environmental and magnet schools have been established with a fully-integrated environmental curriculum.

HOW to get started teaching about the Environment

Today's curricula are already crowded, but you can start introducing the environment to your program with some simple steps. The Classroom Earth Teacher Advisory Committee, a group of teachers who have experience teaching about the environment, recommends these steps:

1. Start with One Lesson

State standards often prescribe the content for lessons, but teachers can be creative in how they teach that content.

Include environmental content in your lesson plan by:

- Using environmental news stories that link to your content goals. Visit websites such as Environmental News Network (<http://www.enn.com/>), or your local newspaper's site to find

articles. The “In the News” section of the Classroom Earth website features articles with connections to curricula and classroom activities in the Resource Library.

- Searching the Classroom Earth Resource Library for a keyword or term that relates to concepts you are already planning on teaching.

2. Get Students Outside

No matter the topic, teaching about the environment is more effective when students are outside and engaged in hands-on activities that link to their classroom assignments. Going outside doesn’t have to mean traveling far. Many schools have some access to outdoor space with plants and animals on the school property or within walking distance. Look for parks, nature centers, zoos, or museums. Examples include:

- A teacher in Nevada crosses the street to a vacant lot to teach about desert ecology.
- A teacher in Tennessee visits a nearby park where students assess how often it is being used and by whom.
- A teacher in Maryland has students conduct a schoolyard survey of the immediate school grounds looking for erosion problems, structures for wildlife, biodiversity, and impervious surfaces.

3. Understand Your Local Environment

Learn what’s going on in your community. What are the current environmental issues? How many local ecosystems are in your area? What watershed is your school in and how large is it? Local nature centers can be a valuable resource for learning about the flora and fauna in your community. To find a nature center nearby, visit National Environmental Education Week’s Nature Center Map. Other resources for information about your local environment include aquaria, science museums, zoos, state and local environmental agencies, and local environmental organizations.

4. Teach Students How to Think, Not What to Think

Foster an understanding of complex issues and give students an opportunity to apply their knowledge to real-world problems. Look for exercises that allow students to explore multiple perspectives on an environmental issue. Create a classroom environment that allows students to discuss their own perspectives safely even when they differ. Provide opportunities for students to respectfully share and debate their understanding of an issue.

5. Look for Opportunities for Service Learning

Service learning is an experiential methodology that combines community service with classroom studies. Community service opportunities are integrated into the curriculum to advance academic goals and objectives. Use environmental projects as the basis for service learning. (For ideas visit the Urban Stewards website: <http://www.ecoeducation.org/urban-stewards>). Some potential environment-based service learning projects include:

- Start a recycling program at your school.
- Initiate a stream or lot cleanup.
- Find ways to reduce energy use in your school.
- Plant trees on school grounds or at a local park.

6. Find Community Partners

Explore partnerships with organizations in your community that are working on environmental issues. Some may be able to offer guest speakers, interpreters on field trips, information for lessons, materials, or internships for students. Potential community partners:

- Community groups and environmental organizations such as the Izaak Walton League, Master Gardeners, Audubon, and The Nature Conservancy;
- Environmental education facilities;
- Parents, community volunteers, or “Friends of _____” (local river, lake, or stream groups);
- Federal Agency Regional Offices, such as the U.S. Environmental Protection Agency, U.S. Forest Service, or U.S. Fish and Wildlife Service;
- Local and State government agencies, such as the state Department of Environment, Forestry Boards, or city or county offices;
- Local, state, and national parks and nature centers; and
- University or college professors; and Zoos, science centers and aquaria.

7. Plan for the Future

Once you have incorporated the environment into a few lessons, begin thinking about next semester or next year. Can you teach a unit that incorporates environmental content throughout the entire subject area? An entire course? Where would you find the support to create a series of lessons on the environment? Research environmental curricula in the website Resource Library for examples of multi-lesson topics. These curricula can model how lessons can link up into an environmentally themed unit to teach larger concepts.

8. Look for Professional Development Opportunities

To help you strengthen your skill and ability to include environmental content in your lesson plans, look for online or university-based continuing education courses, local workshops, or summer training institutes. Are there statewide environmental organizations that offer professional development or conferences that focus on environmental education? Check Classroom Earth's Professional Development resources for more ideas.

Components of a Successful Environmental Education Program

A successful environmental education program combines environmental literacy goals with best practices in education, including:

- Instructionally valid learning such as smaller learning communities with personal instruction, appropriate use of technology, varied and engaging instruction, in-depth topic study, and ongoing evaluation;
- Real-world application of learning through field work;
- Exploration of issues and opportunities for students to make choices based on their findings;
- Place-based learning;
- Integration of disciplines rather than a pure science-content approach;
- Professional training for educators; and
- Meeting curricular goals and benchmarks through the instruction.

Making the Case for Environmental Education to Your School Administration

Integrating environmental education into a traditional curriculum requires hard work and an administrator that is willing to support and empower staff to challenge themselves and their students. You can make the case for environmental education to the administrators in your school by demonstrating the importance of environmental literacy and the academic benefits of an environmentally oriented curriculum.

The Importance of Environmental Literacy

Environmental literacy in students goes beyond simple classroom discussions on global climate change or limited recycling efforts. Today's students will face many environment-related challenges as they grow into tomorrow's leaders. Waste disposal, water allocation and quality, adapting to climate change, genetic engineering of food, energy consumption, and species preservation and diversity are just a few of the issues that will define our future. Citizens will need environmental literacy to make informed decisions based on analysis of available science and the impacts of viable alternatives.

Academic Success through Environmental Education

Providing opportunities for students to explore topics of interest to them across disciplines through environmental education produces exciting results. With an effective environmental education program, students benefit from:

- Topics that engage them and foster enthusiasm for learning;
- Fewer discipline and classroom management problems;
- Better performance on standardized tests;
- Real-world application of classroom learning;
- Higher retention of knowledge and skills; and
- Increased teacher morale and enthusiasm.

Academic and Social Benefits of Environmental Education

Environmental education emphasizes cooperative learning, critical thinking and discussion, hands-on activities, and real-world application.

Students who study environmental education develop and practice skills like:

- Working in teams;
- Listening to and accepting diverse opinions;
- Solving real-world problems;
- Taking the long-term view;
- Promoting actions that serve the larger good;
- Connecting with the community; and
- Making a difference in the world.

EE Instructional Strategies Help Foster Leadership Qualities

Environmental education emphasizes cooperative learning (i.e., working in teams or with partners), critical thinking and discussion, hands-on activities, and a focus on action strategies with real-world applications. As a result, students who study EE develop and practice leadership skills (See inset box on page 1).

EE Makes Other School Subjects Rich and Relevant

Using outdoor settings like wetlands, schoolyard habitats, or even national parks can infuse a sense of richness and relevance into a traditional school curriculum. California's Heritage

Project—a partnership between three school districts and Sequoia and Kings Canyon National Parks—is one example:

Once a week, K–12 students meet with a park ranger to learn about park-related topics, such as forest fire cycles. Frequent park visits to gain hands-on experience are encouraged, creating stronger connections than the more typical once-yearly field trip provides. The Heritage Project also offers EE classes that combine learning with recreation and exercise. For example, students study river ecology while kayaking, or equine caretaking while horseback riding. These hands-on experiences motivate students to learn, and they pay off in better test scores, better social skills, and increased parental involvement. The program’s growth testifies to its success: nearly 75% of local students have become involved in the Heritage Project since it was founded, and teachers welcome the educational support from expert staff at participating parks, forests, refuges, museums, zoos, and nature centers. (Excerpted from: *Environmental Education and Educational Achievement: Promising Programs and Resources*; National Environmental Education and Training Foundation.)

EE Teaches Students to be Real-World Problem-Solvers

Students at the School of Environmental Studies in Apple Valley, Minnesota, attend high school on the Minnesota Zoo’s grounds, and have daily opportunities to hone their problem-solving skills. The Zoo School functions as an interdisciplinary learning laboratory that, in the words of Principal Dan Bodette, “allows kids to do the kind of thinking that problem solving in the real world requires.”

The Zoo School’s environment-based approach to education lays the foundation for building students’ problem-solving skills. Environment-based education employs these key strategies for teaching creative and successful problem solving:

- Introducing inquiry-based instructional activities with real-world applications;
- Encouraging critical thinking about these activities;
- Allowing individual choice about and engagement in the particular problem to be solved;
- Helping students make connections between disciplines; and
- Fostering independent and cooperative group learning.

For example, students at the Zoo School spend ten days each trimester investigating an independent study topic of their choice. Projects vary from designing a web page for the Jane Goodall Institute’s Roots and Shoots program to teaching local fourth graders about ecosystems.

Recently, two students profiled a local pond for a themed unit that explored the human/water relationship. They tested the pond water for phosphates, nitrates, and dissolved oxygen so that they could determine the pond’s ecological health and recommend improvements to city officials. The students were so involved in the project that they stayed at Kinko’s until 2 a.m. preparing the presentations they were delivering to city officials the next day—a not unfamiliar scenario in today’s 24/7 workaday world. (*Environmental Education and Educational Achievement: Promising Programs and Resources* and *Environment-Based Education: Creating High Performance Schools and Students*. National Environmental Education and Training Foundation)

EE Offers All Students Equal Chances for Academic Success

Environmental educators often find that students who fail in traditional school settings can succeed when the natural outdoor environment becomes the students’ classroom. For example, students who learn best by doing can be as successful as students who learn best through lectures and books:

Jeremy is a high school senior whose writing skills were weak and who admitted that he often had trouble “tying facts together.” After Jeremy got involved in the environmental education program at his school, things changed. He had to write a 2400-word paper, complete an action project, and present his conclusions to a community panel. Not only was his paper “awesome,” according to this English teacher, but Jeremy went further. On his own initiative, he submitted an editorial based on his research to his state capital’s newspaper, and it was published. (*Environment-Based Education: Creating High Performance Schools and Students and Using Environment-Based Education to Advance Learning Skills and Character Development*. National Environmental Education Foundation and The North American Association for Environmental Education.)

Section II. Using Place-based Education (PBE), Environment-based Education (EBE), and Environment as an Integrating Context (EIC) in the curriculum

WHAT is Place-based and Environment-based Education?

The three terms “Place-based Education” (PBE), “Environment-based Education” (EBE) and “Environment as an Integrating Context” (EIC) refer to an emerging educational reform. All of these programs have evolved from the earlier environmental education movement, which focused on nature and on learning about the natural sciences such as field ecology, habits of plants and animals, and natural cycles. As the field of Environmental Education has matured, the focus has shifted from being based on nature facts and statistics to being based on systems and issues: rain forest destruction, decreasing ozone levels, endangered species, and habitat degradation, for example.

Place-based, Environment-based, and EIC philosophies have grown out of these changes. The different programs share a number of similarities and also some differences, but all use a model of teaching based on the local community, both natural and/or manmade. This provides a logical and natural way to integrate the curriculum around issues of interest to students and teachers. Place-based, Environment-based, and EIC have taken environmental education a step further with a focus on the local environment where students live and learn. They encourage children to continue to investigate their local community with a sense of exploration, inquiry, and wonder while acquiring core skills.

Other names that identify similar models are “Community-Based Environmental Education,” “Environmental Health Science Problem-Based Learning” (EHS), and “Environmental Health Science as an Integrating Context” (EHSIC). The following information is from sources dedicated to each specific methodology. You will see how similar they are and that most of the information could apply to all three.

A. Place-based Education (PBE)

Place-based education encourages students to place themselves actively in the community, both natural and manmade, in which they live. It encourages students to get involved in their community and become stewards of the environment as well as taking active roles in community development. It is a way to integrate curriculum around a study of place focusing on both nature and culture, both natural and human built environments.

David Sobel in his book, *Place-Based Education*, identifies some trends of Place-based Education:

1. A movement toward sustainability and away from an “unlimited resources” philosophy.
2. A movement from fragmentation to system thinking. Rather than isolated facts, a focus on the whole system with its interrelated parts.
3. A focus on the here and now (local communities and ecosystems) first and then progression to broader global concerns. It makes developmental sense to progress from near to far, using the schoolyard, the neighborhood, and the adjacent lands as a context for learning in kindergarten through 6th grade.
4. A movement of the learning experience from a mandated monoculture to encouraged diversity as a school district goal.

B. Environment-based Education (EBE)

Environment-based Education uses the environment more broadly as a learning tool both in schools and after-school programs. While environmental education focuses on building a base of environmental knowledge and skill to be applied to environmental stewardship, environment-based education uses a popular subject matter to improve students' learning skills and create a wider learning context for students, teachers, and the community. Environment-based education emphasizes interdisciplinary integration of subject matter, problem- and issue-based learning experiences, team teaching, learner-centered instruction, constructivist approaches, and self-directed learning.

Environment-based education—using the environment as a tool for achieving broader educational goals—has the potential to dramatically increase the overall amount of time teachers spend on the environment each school year. Environment-based education is consistent with the environmental education goals of deeper understanding, investigation, and decision-making skills. No one is surprised to see the curiosity of small children examining a worm or a flower, or asking why the sky is blue or the wind blows. Yet we put these same children into sterile, constricted environments and make them sit still and be quiet when their bodies and minds want to be engaged and active.

Environment-based education offers a broad range of benefits including improved test scores, skills for life-long learning, career preparation, attitudes of respect and responsibility, and producing young citizens who are prepared to take their place as adults in the complex and challenging society of the 21st century. (From "Using ENVIRONMENT-BASED Education, to Advance Learning Skills and Character Development." <http://www.neefusa.org/pdf/EnviroEdReport.pdf>)

C. Environment as the Integrating Context for learning (EIC)

The Environment as the Integrated Context for Learning model focuses on developing programs unique to each school and community. The model combines best practices into a comprehensive educational framework that simultaneously addresses content standards from multiple disciplines. EIC uses the school's natural and socio-cultural settings to engage students in schoolwork that they perceive as relevant to their daily lives, thus increasing their motivation for learning and academic achievement. (The Education Commission of the States, 2002)

The principal components of the EIC Model include:

- Integrated, interdisciplinary instruction;
- Community-based investigations that can also result in service activities;
- Collaborative instruction;
- Learner-centered, constructivist approaches;
- Cooperative and independent learning; and,
- Local natural and community surroundings as the context for learning.

Educators who use the EIC Model involve their students in community-based investigations that provide students with experiences examining real-world issues through the application of skills and knowledge from multiple disciplines. Using these innovative instructional approaches, teachers addressing state content standards and adopted instructional materials can ensure that their students have authentic and engaging learning opportunities. The EIC model was developed by The State Education and Environmental Roundtable (SEER) based on research reported in "Closing the Achievement Gap" with input from 12 state departments of education.

WHY Teach Place-based and Environment-based Education?

There are a lot of research-based reasons to incorporate these community-focused models into educational systems. Results vary from more engaged learning and increased enthusiasm to higher test scores. Here are just a few summaries of research supporting Environment and Place-based education

NEETF: *Environment-based Education: Creating High Performance Schools & Students*

Below are excerpts from the Executive Summary of a report published by the National Environmental Education Training Foundation in September, 2000.

Some of the benefits of using Environment-based Education are:

- Reading scores improve, sometimes spectacularly.
- Math scores improve.
- Students perform better in science and social studies.
- Students develop the ability to make connections and transfer their knowledge from familiar to unfamiliar contexts.
- Students learn to “do science” rather than just “learn about science.”
- Classroom discipline problems decline.
- Every child has the opportunity to learn at a high level.

Closing the Achievement Gap: Using the Environment as an Integrating Context for Learning.

Results of a nationwide study: the SEER Report by State Education and Environmental Roundtable. Report documents the successes of the schools, teachers, and students involved in implementing the EIC framework. Includes results of a nationwide study, a description of the major concepts and assumptions underlying EIC, an exploration of the range of successful EIC programs across the United States, and an analysis of the implications of EIC-based education for student learning and instruction. Observed benefits include better performance on standardized measures of academic achievement in reading, writing, math, and social studies; reduced discipline and classroom management problems; and increased engagement and enthusiasm for learning.

“Using Environment-Based education to Advance Learning Skills and Character Development”

A joint report of the North American Association for Environmental Education (NAAEE) and the National Environmental Education and Training Foundation (NEETF)

(<http://www.neefusa.org/pdf/EnviroEdReport.pdf>)

The report highlights the following proven benefits of Environment-based education:

- Issue-oriented approaches give students a better idea of the possibilities and constraints on citizen action and about the roles and responsibilities of citizenship. (Massialas, 1989)
- Youth who receive instruction in both environmental issues and action strategies assume personal responsibility for realizing their values. Such a sense of responsibility increases confidence and self-esteem, while helping them feel a part of “something larger than them” (Iozzi, Laveault, and Marcinkowski, 1990; Lieberman and Hoody, 1998).
- Students who have increased knowledge about the causes of environmental problems are generally more positive about being able to correct and prevent future problems, and are

more confident about their own effectiveness in problem solving (Hoody, 1995; Champeau, 1997)

- Students believe individual actions can make a difference (Carrier, 2000).

HOW Do You Use Place-based and Environment-based Education in the Classroom?

Obstacles and Solutions when implementing Place

Building a strong PBE program in your school and community takes time, persistence, and a dose of creative thinking. But before you say, “I can’t do it,” listen to the voice of experience! Veteran teachers have identified the most common obstacles to success and suggested ways to tackle each one.

- Place-based education is a new idea and it lacks administrative support.
- There isn’t enough time for place-based education projects.
- Many teachers are not comfortable in outdoor classroom settings.
- Community associations and other groups are not aware of the possibilities.
- In schools, the left hand doesn’t know what the right hand is doing.
- It’s not clear to teachers and administrators how PBE addresses educational standards.
- Funding for and commitment to PBE projects fluctuates from year to year, and administration to administration.

Solutions can be found at the *Promise of Place* website.

An Integrating Approach

(From *PLACE*)

Landscape analysis method: One approach to exploring your region is to use a landscape analysis method such as the one developed by the Place-based Landscape Analysis and Community Education (*PLACE*) program. *PLACE* works with Vermont towns to provide local residents with a forum for exploring and understanding the natural and cultural history of their town landscape. Since landscapes are such complex systems, *PLACE* recommends you begin your journey by dividing the analysis of a town into three main focal areas:

- **The *physical landscape*:** This should be the starting point for the investigation of your town's natural history, the stage that supports the cast of human and non-human characters in an ever-unfolding story. Indeed, the nature of the physical landscape including bedrock, soils, climate, topography, and hydrology often defines and limits the distribution of plants, animals, and people across the landscape.
- **The *cultural landscape*:** The cultural landscape of any region is a rich text waiting to be read. It has deep layers of meaning and many stories to tell, but most people need to be taught how to read it. If you want to understand the human side of a landscape, you'll need to learn to stop and really see all the human features in the landscape, even the most ordinary and easily overlooked objects. Reading the cultural landscape means having a clear vision of the human features and an understanding of why they are there.
- **The *ecological landscape*:** Ecology is the study of organisms and their environments and the interrelationships between the two. While the focus of a cultural landscape analysis is on the relationship between humans and the land over time, your ecological landscape analysis will emphasize the non-human organisms with which we share the local landscape. This distinction is not meant to promote humans as being separate from

nature, but rather to draw attention to ways in which we influence (and are influenced by) the non-human components of our landscape.

Looking at a landscape through these three lenses is the starting point. Bringing these processes together to discern how they interact with and influence one another guides and deepens our understanding. Landscapes are more than just the sum of their parts. To truly understand and tell the story of a landscape our analysis and interpretation must be integrative.

The key to a successful landscape analysis is in finding the relevant details within the larger story. When using your community and the landscape as a launching point for developing curricula and other educational programs, it will help to choose a focus for your investigations.

Resources used for this summary:

“Closing the Achievement Gap” From: Pennsylvania Environment and Ecology Education

<http://www.pa3e.ws/resources/governors-institute-workbook/17/41-environment-as-the-integrated-context-for-learning.html>

National Environmental Education Training Foundation September, 2000 Report

Full Text: <http://www.neefusa.org/pdf/NEETF8400.pdf>

Summary: http://www.peecworks.org/PEEC/PEEC_Research/S001877D2-00187940

PLACE: Place-based Landscape Analysis and Community Education: www.uvm.edu/place

Promise of Place: http://promiseofplace.org/curriculum_and_planning/obstacles_and_solutions

SEER Report: http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/29/c1/70.pdf

Additional Resources

Following are a few resources for Place-based, Environment-based, and Environment as Integrating Concept models. You will find that many of the resources apply to all three concepts.

Place-based Education Resources

- Place-based Education and Student Achievement: A summary of numerous resources supporting place-based education. Includes attachments of summary sources. Place-based Education Evaluation Collaborative (PEEC) http://www.peecworks.org/PEEC/PEEC_Research/S0032637E-0361B9B8
- Promise of Place: Multiple resources for incorporating Place-based Education in curriculum including lists of links organized by topics, planning tools, obstacles and solutions. <http://promiseofplace.org/index.php?id=66>
- A Forest for Every Classroom: Place-based program connecting schools to national, state and local forests. Visit some of the websites for more information or search “A Forest in Every Classroom.”
- *Place-Based Education: Connecting Classrooms & Communities*. David Sobel, Barrington, MA: The Orion Society, 2005.

Environment-based Education Resources

- *Creating High Performance Schools and Students*. The National Environmental Education & Training Foundation, Washington, DC September 2000. <http://www.neefusa.org/pdf/NEETF8400.pdf>
- Influences on Middle School Teachers' Use of Environment-Based Education. Julie Ernst. http://www.allacademic.com/meta/p_mla_apa_research_citation/1/8/7/0/9/pages187091/p187091-1.php
- *Using Environment-based Education to Advance Learning Skills and Character Development: A Report, Annotated Bibliography, and Research Guide*. The North American Association for Environmental Education and The National Environmental Education & Training Foundation. Oct., 2001. <http://www.neefusa.org/pdf/EnviroEdReport.pdf>
- “How Nature Shapes Childhood”. Will Nixon. *Amicus Journal*, Summer 1997. <http://www.accessmylibrary.com/article-1G1-20745981/nature-shapes-childhood-personality.html>

Environment as an Integrating Concept Resources

- **Environment as Integrating Context for Learning**. What it is, how and why to use it, the start of a data base of integration resources. <http://www.greenhearted.org/environment-as-integrating-context.html>
- **EIC: Using the Environment as an Integrating Context for Learning**. http://www.seek.state.mn.us/classrm_d.cfm
- **Empowering Students to do Extraordinary Things: Environment as an Integrating Concept**. Sierra Club Rocky Mountain Chapter. <http://rnc.sierraclub.org/pandp/1998-02/eic.html>