ENVIRONMENTAL INTEGRATION

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GOALS

After completing this module, participants will:

1. Understand a widely recognized definition of environmental education
2. Understand characteristics of a comprehensive environmental education curriculum
3. Demonstrate the ability to write a syllabus for an outdoor program including environmental education components
4. Demonstrate the ability to write and deliver a complete environmental education lesson plan
5. Understand how to integrate environmental education into an outdoor adventure education program
6. Understand where to access additional information on environmental education

SUBJECT MATTER INFORMATION

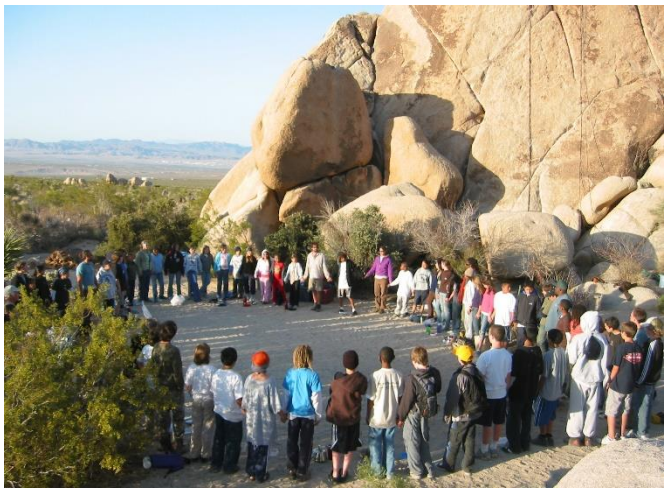
Introduction

Environmental education is an academic discipline which outdoor leaders may or may not incorporate into their outdoor education program, depending on the program's goals.

Environmental education can be incorporated into an outdoor education experience to a significant degree, comprising the majority of learning experiences. It can also be incorporated just a little, with only a fraction of the program devoted to environmental education activities.

Environmental education is a professional field with enormous complexity. Some individuals devote their entire career to environmental education, earning advanced degrees in the subject, conducting

scientific research, publishing in academic journals such as the Journal of Environmental Education, attending environmental education conferences, and studying the extensive and ever-growing body of academic and scientific literature on environmental education.



Outdoor leaders who are responsible for leading outdoor adventurous experiences, outdoor recreation programming, wilderness expeditions featuring long travel days, or technical outdoor skills training like climbing or paddling, and who do not have an extensive academic and professional background in environmental education, cannot be expected to master all the complexities of environmental education. However, it is possible for generalist outdoor leaders to effectively incorporate some elements of environmental education into their programs.

Helping outdoor leaders do just that is the subject of the following material.

This module, 'Environmental Integration,' is an introduction to elementary subjects in the discipline of environmental education. For additional resources, see the For Further Information section below.

Environmental education aims to foster knowledge, skills, feelings, attitudes, and motivations to effectively support environmental sustainability.

This means that high-quality environmental education experiences do not simply convey science facts, and do not focus on simply teaching Leave No Trace principles or trail-side natural history. They don't emphasize minimizing environmental impact on a personal level, to the exclusion of building momentum to change government policy or making other widely influential social changes. Instead, the focus is helping learners develop the capacities to effectively take action regarding both local environmental issues as well as large-scale topics like climate change and global biodiversity.

Learning objectives in environmental education programs involve knowledge, emotions, attitudes, values, training in action skills, and active engagement.

Supporting learners to develop relevant and durable capacities with all these subjects takes substantial time. It's likely able to be accomplished in a year-long environmental education training program, such as those offered by the North American Association for Environmental Education or its regional affiliates. However, achieving powerful and long-lasting results with all these

objectives may not be realistic for a one-week experience, especially one not exclusively devoted to environmental education.

In this Environmental Integration module, we'll look at how environmental education can be most effectively integrated into outdoor education programming. We'll share some specific ideas about how environmental education can be incorporated into an outdoor education experience that may also have outcomes around teamwork, resilience, technical outdoor skills training, and the like.

Principles and Concepts

Defining Environmental Education

What is environmental education? There are many different ways that individuals understand this term. However, a foundational and widely accepted definition was established at a United Nations conference in 1976 in Belgrade Yugoslavia, where the **Belgrade Charter** was adopted, and which stated:

> *The goal of environmental education is to develop a world population that is aware of, and concerned about, the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations, and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones.*

Notice that this definition covers much more than simply understanding facts about plants and animals, and their interconnections (natural history and ecology). It also refers to skills, attitudes, motivations and commitment. High-quality environmental education programs will foster the development of these characteristics in learners.

In 1977, the **Tbilisi Declaration** was adopted at an intergovernmental conference on environmental education organized by the United Nations and held in Tbilisi, Georgia. It built on the Belgrade Charter and described three goals for environmental education:

1. *To foster clear awareness of, and concern about, economic, social, political and ecological interdependence in urban and rural areas;*
2. *To provide every person with opportunities to acquire the knowledge, values, attitudes, commitment, and skills needed to protect and improve the environment;*
3. *To create new patterns of behavior of individuals, groups, and society as a whole toward the environment.*

Note again the emphasis about going beyond mere knowledge of facts about organisms and the environment, to include feelings of concern, development of environmental values, and action-oriented skills, leading to behavior change.




The Tbilisi Declaration's goals for environmental education programs remain widely accepted and relevant today.

The Tbilisi Declaration described five categories of environmental education objectives:

1. **Awareness**—to help social groups and individuals acquire an awareness and sensitivity to the total environment and its allied problems.
2. **Knowledge**—to help social groups and individuals gain a variety of experience in, and acquire a basic understanding of, the environment and its associated problems.
3. **Attitudes**—to help social groups and individuals acquire a set of values and feelings of concern for the environment and the motivation for actively participating in environmental improvement and protection.
4. **Skills**—to help social groups and individuals acquire the skills for identifying and solving environmental problems.
5. **Participation**—to provide social groups and individuals with an opportunity to be actively involved at all levels in working toward resolution of environmental problems.

This further emphasizes the need for environmental education programs to not only provide information about the environment, but to support the development of values, feelings, action-oriented skills and active engagement to effectively support environmental sustainability.

The Belgrade Charter and Tbilisi Declaration talk about solving environmental problems. But how do we measure success—how do we know when these problems have been successfully solved?

The **Brundtland Commission**, a United Nations-affiliated group chaired by former Prime Minister of Norway Gro Harlem Brundtland, addressed this.

Gro Harlem Brundtland

Under her leadership, in 1987 the Commission produced a report, Our Common Future, which provided a definition of environmental sustainability that took into account both society's interest in economic development and society's interest in a healthy natural environment. The report gave a definition of sustainability as follows:

> *Meeting the needs of current generations without compromising the ability of future generations to meet their own needs.*

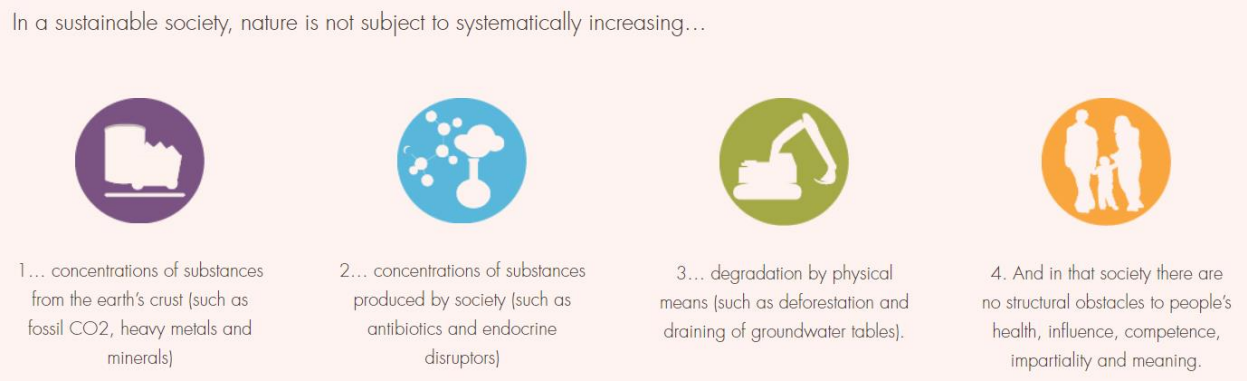
This, then, can help you understand your role as an outdoor educator in providing environmental education programming: to support the development of knowledge, skills, abilities and values in learners to effectively foster environmental sustainability.

(The end goal of environmental education—the development of individuals and groups who meet the characteristics described in the Belgrade Charter and Tbilisi Declaration, and who can foster

environmental sustainability as described by the Brundtland Commission—has been described by several terms. These include environmental sustainability, responsible environmental behavior, environmental literacy, and environmental citizenship behavior.)

The Swedish NGO **The Natural Step** developed specific metrics to provide additional definition for the idea of environmental sustainability. The Natural Step measures sustainability as follows:

1. In a sustainable society, nature is not subject to systematically increasing…
    a. Concentrations of substances from the earth's crust (such as fossil CO2, heavy metals and minerals)
    b. Concentrations of substances produced by society (such as antibiotics and endocrine disruptors)
    c. Degradation by physical means (such as deforestation and draining of groundwater tables).
2. And in that society there are no structural obstacles to people's health, influence, competence, impartiality and meaning.



The Natural Step's four Sustainability Principles.

This means that the work of the environmental educator should help lead towards a world where, for instance, the global economy is de-carbonized, and no longer emits more greenhouse gasses into the atmosphere than can be removed by natural processes.

It means environmental educators should work to foster a world that sustains large natural areas and biological diversity.

And it means that environmental educators should do this work in a way that supports human needs being met worldwide, and a world in which resources are fairly and equitably distributed and used.

Reconciling with Limitations

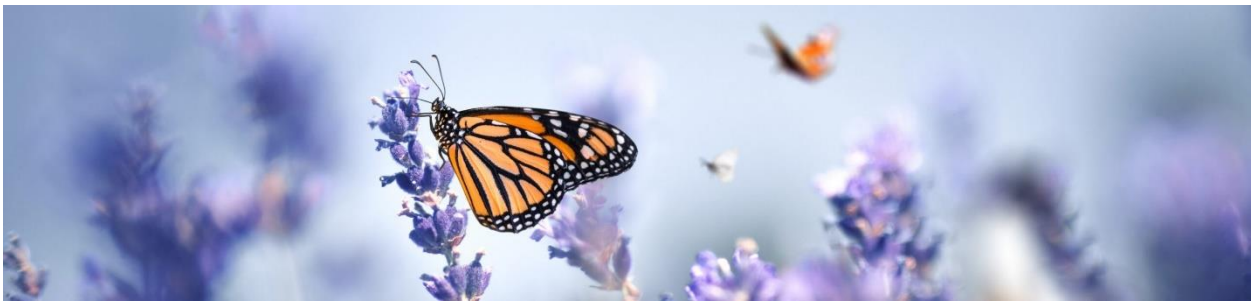
You are unlikely to be able to accomplish this in a week-long outdoor education program with a dozen young people. In fact, much of environmental sustainability is in the hands of government officials and corporate executives over whom we may have some limited influence but no direct control.

It is useful, then, to thoughtfully develop an environmental education curriculum you can realistically deliver—given the constraints you have around time, learning materials, expertise or other resources, and the capacity to influence international, federal, and regional environmental law and regulation.

And it is important to feel good that by delivering that curriculum to your program participants, you are contributing—in a way that is perhaps limited, but still important—to fostering an environmentally sustainable society and world.

> Once there was a young girl walking along a beach. There had just been a storm, and starfish had been scattered along the sands. The girl knew the fish would die, so she began to fling the fish to the sea. But every time she threw a starfish, another would wash ashore. An old man happened along and saw what the child was doing. He called out, "What are you doing?" "Saving the starfish!" replied the girl. "But your attempts are useless, child! Every time you save one, another one returns! You can't save them all, so why bother trying? Why does it matter, anyway?" called the old man. The girl thought about this for a while, a starfish in her hand; she answered, "Well, it matters to this one." And she flung the starfish into the welcoming sea.
>
> *Adapted from Loren Eiseley, The Star Thrower*

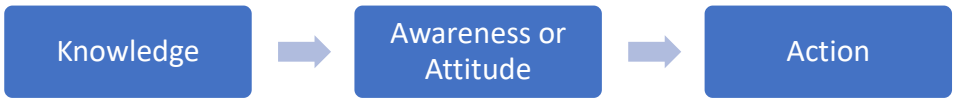
Outcomes Categories: 20th Century Research



A bit of history can illuminate the science behind effective environmental education programs.

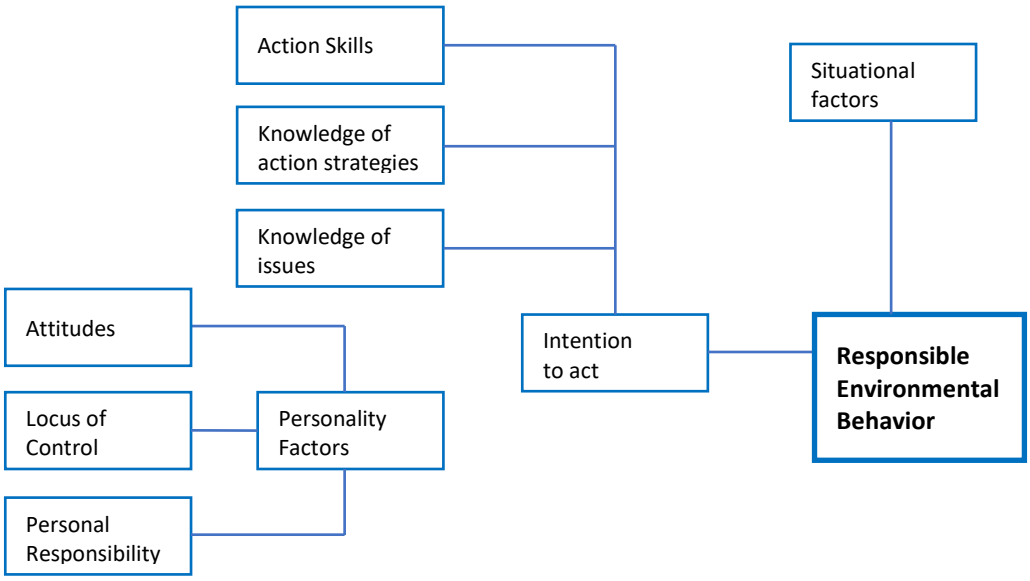
In 1990, Harold Hungerford and Trudy Volk published a research article for a United Nations education conference on responsible environmental behavior. "Changing Learner Behavior through Environmental Education" provided a critique of typical environmental education and offered a comprehensive model.

The researchers noted that educators had theorized that learning about something, such as an environmental issue, will predictably lead to behavior change:

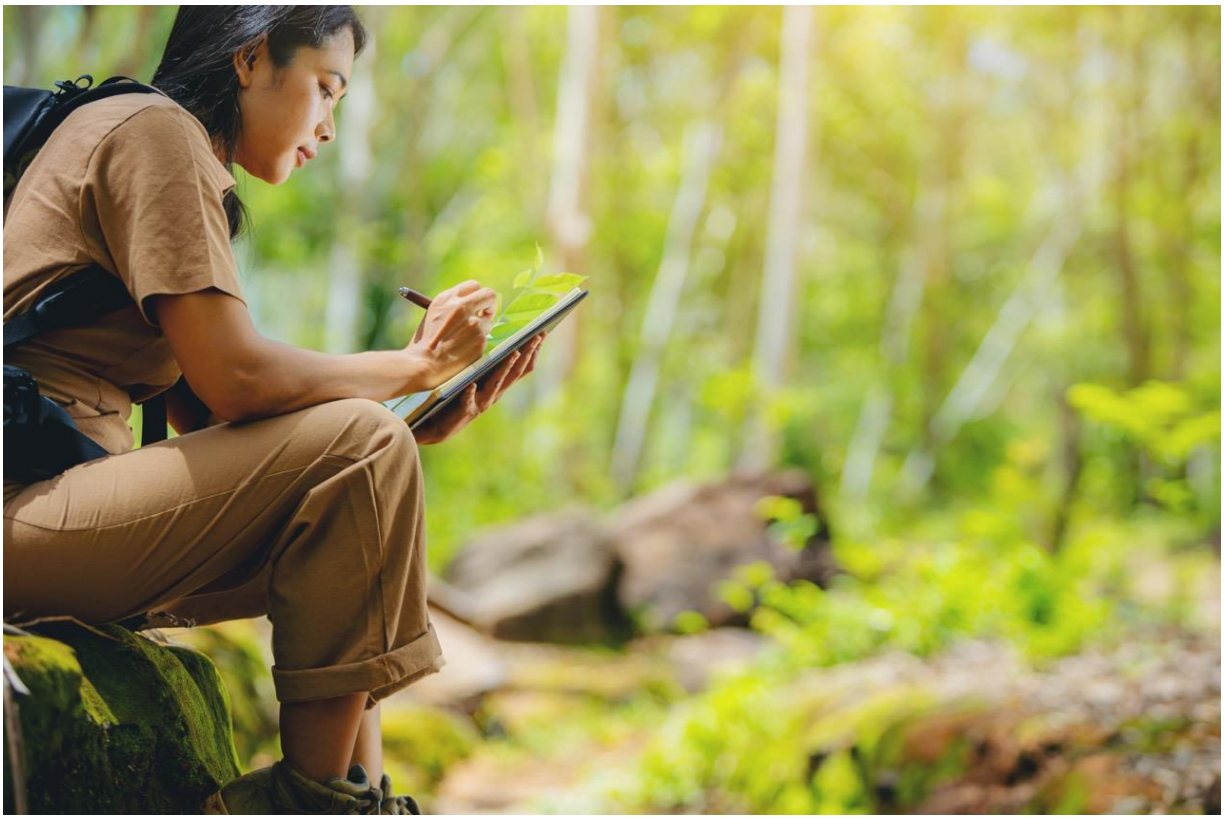


Under further investigation, however, it appears that this is not the case. How many of us, for example, know that cigarette smoking or SUV driving is not good for our bodies or the earth, but continue to do one or the other regularly?

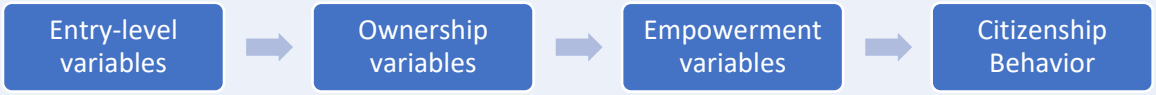
The Hines (1986/87) model, based on a meta-analysis of research studies by Jody Hines, offers a more comprehensive look at fostering responsible environmental behavior:



Hungerford and Volk reworked the model to reflect principal and secondary factors that lead towards responsible citizenship behavior:



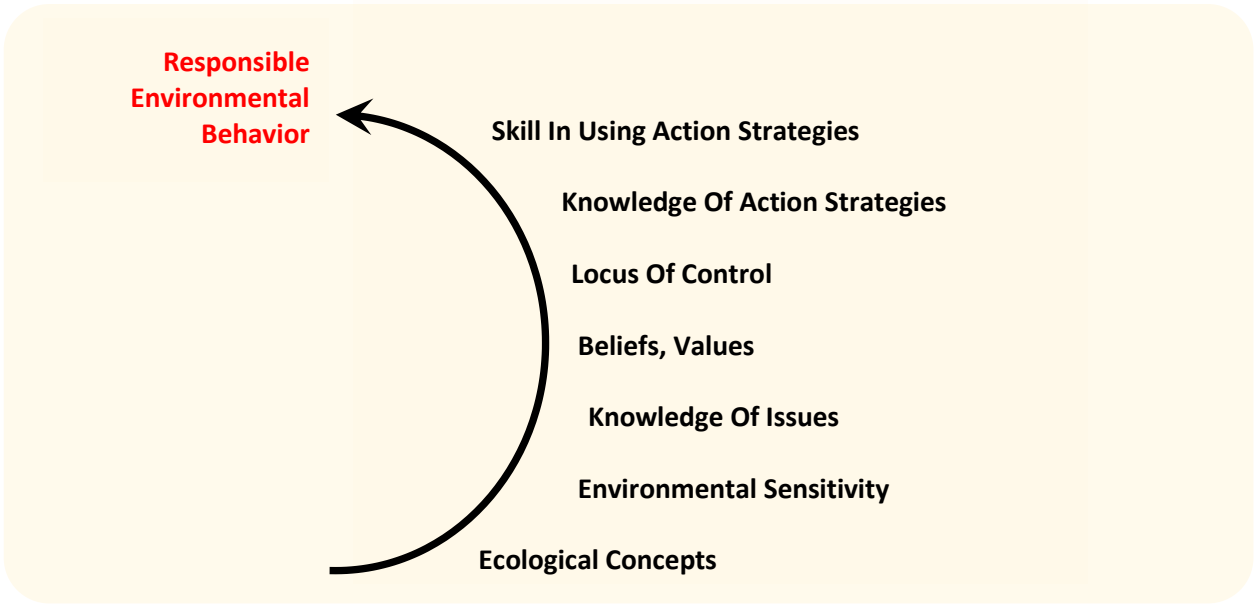
Major and Minor Variables Involved in Environmental Citizenship Behavior



Entry-level variables	Ownership variables	Empowerment variables
Major variable	Major variables	Major variables
Environmental sensitivity	In-depth knowledge of issues	Knowledge of and skill in using environmental action strategies
	Personal investment in issues and the environment	Locus of control (expectancy of Reinforcement)
		Intention to act
Minor variables	Minor variables	Minor variable
Knowledge of ecology	Knowledge of the consequences of behavior—both positive and negative	In-depth knowledge of issues
Androgyny	A personal commitment to issue resolution	
Attitudes toward pollution, technology, and economics		

This model, itself adapted from the Hines and other models and since changed by others, offers a comprehensive philosophical framework for understanding the means and ends of environmental education.

Simplified for use in a practical training by outdoor educators, the model and teaching progression for fostering responsible environmental behavior re-appears:



Here—with the Hines model, Hungerford/Volk model, and simplified seven-point progression—you can see several research-based approaches to modeling the characteristics of effective environmental education programs. The Hungerford/Volk model is comprehensive but difficult to memorize to use in the field. The seven-point progression described immediately above loses some detail but is easier for educators to use.

No one model is perfect. More complex models offer a more sophisticated and true-to-life representation. Simpler models are simpler to remember and apply.

We'll next look at one more way to characterize high-quality environmental education programming, by looking at the detailed educational outcomes and education materials characteristics published by the North American Association for Environmental Education.

Outcomes Categories: NAAEE Guidelines

Educational outcomes for environmental education have been described in a variety of ways. How outcomes are organized and described is constantly evolving.

The North American Association for Environmental Education (NAAEE) has developed widely accepted and well-respective categories of outcomes. NAAEE describes four broad thematic areas, or strands, that environmental education programming should address. These are:

1. Questioning, Analysis, and Interpretation Skills
2. Understanding Environmental Processes and Systems
3. Skills for Understanding and Addressing Environmental Issues
4. Personal and Civic Responsibility

These four themes reflect the goals and objectives of environmental education established in the Belgrade Charter and Tbilisi Declaration that support environmental sustainability as described by the Brundtland Commission.

NAAEE, which has provided global leadership in the field of environmental education since its founding in 1971, further describes these thematic areas, as follows.

(Note that these guidelines were originally developed for the K-12 formal education context, to be adopted by governmental standards-setting bodies. Formal education outcomes are designed to be assessed; in some cases that assessment is used to determine whether a student is permitted to move on to the next grade. Because of the complexities of assessing attitudes, values, feelings, sensitivities, and the like, these important aspects of environmental education outcomes were de-emphasized in the NAAEE guidelines. However, for environmental education programs outside the formal education context, their full inclusion is important.)

1 Questioning, Analysis, and Interpretation Skills

Learns must be able to ask questions, speculate, and hypothesize about the world around them; seek information, and develop answers to their questions. Learners must be familiar with inquiry, master fundamental skills for gathering and organizing information, and interpret and synthesize information to develop and communicate explanations.

A. Questioning
B. Designing investigations

C. **Collecting information**
D. **Evaluating accuracy and reliability**
E. **Organizing and analyzing information**
F. **Working with models and simulations**
G. **Drawing conclusions and developing explanations**

2 Understanding Environmental Processes and Systems

Learners must understand the processes and systems that comprise the environment, including human social systems and influences. Learners must understand how changes in one system (hydrosphere, atmosphere, geosphere, or biosphere) result in changes in others. Learners must understand how human activities affect environmental quality and long-term sustainability at local, tribal, national, and global levels. These understandings should be based on knowledge synthesized from across traditional disciplines.

6.1 Earth's physical and living systems

A. **Earth's physical systems**
B. **Earth's living systems**

6.2 Human systems

A. **Individuals, groups, and societies**
B. **Culture**
C. **Political systems**
D. **Economic systems**

6.3 Environment and society

A. **Human-environment interactions**
B. **Resource distribution and consumption**
C. **Places**
D. **Change and conflict**

3 Skills for Understanding and Addressing Environmental Issues

Learners must be able to define, learn about, and evaluate environmental issues. They must have the skills necessary to act on environmental issues. Learners must be able to investigate environmental issues, consider evidence and differing viewpoints, and evaluate proposed action plans, including likely effectiveness in specific environmental, cultural, social, and economic contexts. Learners must be able to analyze the intended and unintended consequences of their own actions and actions taken by other individuals and groups, including long-term environmental, social, and economic implications for sustainability.

3.1 Skills for analyzing and investigating environmental issues

A. **Identifying and investigating issues**
B. **Sorting out the consequences of issues**
C. **Identifying and critiquing alternative solutions and courses of action**
D. **Working with flexibility, creativity, and openness**

3.2 Decision-making and action skills

A. **Forming and evaluating personal views**
B. **Evaluating the need for action**

C. **Planning and taking action**
D. **Evaluating the results of actions**

4 Personal and Civic Responsibility

Learners must be willing and able to act on their own conclusions about what should be done to ensure environmental quality, social equity, and economic prosperity. As learners develop and apply concept-based learning and skills for inquiry, analysis, and action, they also understand that what they do individually and in groups can make a difference.

A. **Recognizing rights and responsibilities**
B. **Recognizing efficacy and developing agency**
C. **Accepting personal responsibility**

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Outdoor leaders seeking to provide a comprehensive environmental education experience should work to address all areas of these themes in their curriculum. While all these elements may be covered in a year-long education program, it's impractical to attempt to address each of them in an environmental education experience spanning a small handful of days. In that case, outdoor leaders should thoughtfully select which parts of which themes will be included in their curriculum, during the program planning process.

These themes can be addressed in whatever sequence is appropriate for your educational context; they do not need to be followed in a strict linear fashion.

These strands were originally developed by NAAEE to provide guidance for environmental education programming in the K-12 context, but they can be used for the university and adult learning contexts as well.

Additional detailed guidance on this material is available in NAAEE's Guidelines for Excellence in Environmental Education documents, available at no cost at NAAEE's website, naaee.org.

Characteristics of Environmental Education Materials

Outdoor leaders and program managers who develop or select teaching and learning materials for environmental education programming (such as lesson plans and syllabi) should work to ensure that the education materials meet the following six characteristics, developed by NAAEE:

1 Accurate and Inclusive

Environmental education instructional materials are accurate and inclusive in describing environmental conditions, concepts, attitudes, processes, challenges, and decisions, and in reflecting the diversity of perspectives on them.

1.1 Accurate
1.2 Centers on equity and inclusion
1.3 Balanced presentation of differing perspectives and theories

2 Emphasis on Skills Building

Environmental education instructional materials build lifelong skills that enable all learners to arrive at their own conclusions and make reasoned decisions about environmental challenges and opportunities.

2.1 Thinking and process skills
2.2 Skills for asking questions and exploring different perspectives
2.3 Skills for decision-making
2.4 Skills for addressing environmental challenges and opportunities

3 Depth of Understanding

Environmental education instructional materials aim to foster the development of the personal awareness and deep conceptual understandings necessary for environmental literacy.

3.1 Awareness
3.2 Focus on concepts
3.3 Concepts in context
3.4 Attention to different scales

4 Personal and Civic Responsibility

Environmental education instructional materials promote personal and civic responsibility, encouraging learners to use their knowledge, skills, and assessments of environmental, social, political, cultural, and economic systems as a basis for environmental decision-making and action.

4.1 Sense of personal stake and responsibility
4.2 Self-efficacy and personal agency

5 Instructional Effectiveness

Environmental education materials rely on instructional principles and techniques that create effective, culturally responsive, and inclusive learning environments for all learners.

5.1 Learner-centered instruction
5.2 Different ways of learning
5.3 Connection to learners' everyday lives

5.4 Expanded learning environment
5.5 Equitable and inclusive learning environments
5.6 Interdisciplinary
5.7 Goals and objectives
5.8 Appropriateness for specific learning settings
5.9 Assessment

6 Usability

Environmental education materials are well-designed and easy to use.

6.1 Clarity and logic
6.2 Easy to use
6.3 Long-lived
6.4 Adaptable
6.5 Accompanied by instruction and support
6.6 Make substantiated claims
6.7 Support accepted recommendations and requirements

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These principles have been developed after careful analysis of decades of academic research into the effectiveness of different approaches to developing and conducting environmental education programs.

Additional detailed guidance on these characteristics is available in the "Guidelines for Excellence: Environmental Education Materials" document in NAAEE's Guidelines for Excellence series of documents, available at no cost at NAAEE's website, naaee.org.

As with the thematic areas that environmental education programming outcomes should address, described above, these six characteristics of effective environmental education materials highlight the importance of going far beyond teaching the names of plants and animals and instructing learners in Leave No Trace principles.

Environmental education content should be designed to support the development of critical thinking skills, build self-efficacy (empowerment), foster a sense of civic responsibility in learners, and help learners action skills for effectively addressing environmental issues.




Application

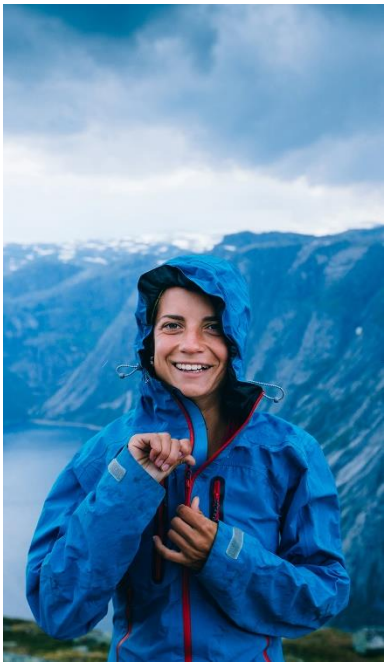
Limitations

Fostering the development of individuals who are aware of, and concerned about, the environment and its associated problems, and who have the knowledge, skills, attitudes, motivations, and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones, takes substantial time, skill, and investment.

Since many outdoor programs that focus on adventure-based learning, wilderness travel, or the like do not have the resources to deliver comprehensive environmental education programming, we'll focus here on looking at how outdoor leaders can still provide some environmental education experiences within the limitations they and their program may face.

Curriculum: Context

We will use the example of a five-day outdoor education trip to illustrate how the principles and concepts described above can be applied by an outdoor leader. In this case, the five-day program focuses on using adventure-based learning to develop self-confidence, team unity, and interpersonal skills with a group of 12- and 13-year old students in a grade school. However, there is also an interest in doing field science and environmental education activities, but they must fit around extended sessions hiking, rock climbing, engaging in problem-solving initiatives, or participating in other adventure activities.



Curriculum: Goals

Since the majority of the goals of this program revolve around adventurous activities such as extended hikes and rock climbing, there is limited time to devote exclusively to environmental education.

In light of this, the following relatively limited set of environmental education learning objectives are set, as follows.

You'll note that although six elements of a comprehensive environmental education program described in the seven-point progression model, due to time constraints, one element--an explicit effort to support learners in developing environmental beliefs and values--is not specifically included in learning objectives (or activity plans or assessments).

Objective 1: Learners will understand aspects of the natural history and ecology of the area.

To accomplish this, instructors will point out and share information about plants, animals and landscape elements, encountered on hikes and at the basecamp, including information about geology, the life history of and relationships between organisms, and ecological connections.

This objective maps to the thematic strand 2, above, *Understanding Environmental Processes and Systems*, specifically part *2.1 Earth's physical and living systems, 2.1.A Earth's physical systems* and *2.1.B Earth's living systems.*

Objective 2: Learners will have opportunities to develop affective connections to the natural world.

Research indicates that 'environmental sensitivity'—an empathetic connection to nature, often developed by simply spending stretches of time in the out-of-doors—is an important part of developing the interest and motivation to support environmental sustainability. Non-intellectual elements like concerns, attitudes, motivations, and feelings are important environmental education objectives.

Therefore, participants will have short 'solo time' experiences by themselves in a natural spot, and will do sensory awareness exercises such as guided blindfolded exploration and listening activities, engaging in journaling, and experiencing readings designed to inspire an affective connection to the natural world.

Although the program can offer participants the opportunity to develop an other-than-intellectual connection to nature, whether this occurs is determined by the individual participant.

This objective maps to thematic strand 3, *Skills for Understanding and Addressing Environmental Issues*, specifically part *3.2 Decision-making and action skills, A. Forming and evaluating personal views*.

Objective 3: Learners will have opportunities to develop self-efficacy.

Studies show that individuals are more likely to take action to support environmental sustainability if they believe they have the ability to make a difference. This belief has been variously termed 'empowerment,' 'internal locus of control,' 'agency' and 'self-efficacy.'

One way to develop self-efficacy is for participants to encounter structured challenges, which they then overcome, using problem-solving, tenacity, positive self-talk, and teamwork, and then to engage in a process where they consider how to use the resources they called upon to overcome the obstacle for the purpose of resolving future challenges.

Therefore, students will engage in a rock-climbing session, where they are supported to scale vertical cliff faces, using safety equipment, encouragement from others, and their own grit and problem-solving skills. Students will then participate in a processing session where they have the opportunity to consider how their experience climbing the cliff can help them overcome seemingly insurmountable future challenges.

Although the experience of rock climbing may support the development of self-efficacy, and often does, this is not guaranteed, so Objective 3 is framed accordingly.

This objective maps to thematic strand 4, *Personal and Civic Responsibility,* specifically *4.B. Recognizing efficacy and developing agency*.

Objective 4: Learners will learn about environmental issues.

Students will be introduced to an environmental issue that is occurring in the natural area where their outdoor experience is taking place.

For instance, the group leader of a program in a desert environment may share information about the desert tortoise (Gopherus agassizii), whose survival is threatened by habitat destruction, climate change-influenced drought, habitat degradation from invasive grass species, traffic collisions, and hatchling tortoise predation by ravens, whose populations are exploding due to ravens' ability to thrive in developed areas.

Desert tortoises can be harmed by traffic collisions. Credit: National Park Service (USA)

The group may be fortunate enough to see a tortoise in the wild, or its tracks or sign, or potential nest areas. Students may also examine artifacts like a tortoise shell, hear a verbal presentation, or read materials about tortoises and the threats they face.

This objective maps to thematic strand 1, *Questioning, Analysis, and Interpretation Skills*, as well as *3.1, Skills for analyzing and investigating environmental issues*.

Objective 5: Learners will gain knowledge regarding action strategies for addressing environmental issues.

Students, during an evening program, will engage in a "town hall" debate. During this activity, students research an environmental issue and play the role of a person who holds a particular viewpoint on that issue. Students also listen to others representing those with opposing viewpoints. Students have an opportunity to evaluate all viewpoints, then, using their own personal judgment, vote for the course of action they believe to be best.

Following the town hall activity, a group discussion is held where participants discuss voting, contacting elected representatives, supporting environmental advocacy organizations, and other strategies for addressing environmental issues.

This objective maps to thematic strand 3.1, *Skills for analyzing and investigating environmental issues,* particularly *3.1.A Identifying and investigating issues, 3.1.B Sorting out the consequences of issues,* and *3.1.C Identifying and critiquing alternative solutions and courses of action.*

Objective 6: Learners will develop skill in using action strategies.

Participants will research an environmental issue, using information provided by their group leader and independent investigation. Each participant will then write a letter to their elected representative expressing their viewpoint on the issue.

This objective maps to thematic strand 3.2, *Decision-making and action skills*, particularly *3.2.C. Planning and taking action*.

Curriculum: Lesson Plan

A sample lesson plan (or 'activity plan') for an environmental education activity is below.

One feature of this lesson plan is a built-in prompt for the lesson planner to consider which of the components of the seven-point progression described above will be included in the activity.

Two documents, "Fact Sheet: Friends of the Boundary Waters Wilderness" and "Interview Preparation," are included as lesson plan materials.

This lesson plan is focused on the sixth element of the seven-part progression described above: helping learners gain knowledge of environmental action strategies.

Note that the seven elements of a comprehensive environmental education program are enumerated in the outcomes area, to prompt the lesson planner to include at least one element as an objective in their lesson.

Lesson Plan

Name: Alice Algae **Group:** Wilderness Leaders **Date:** 2023-03-15

Activity Title:	Knowledge of Action Strategies: Environmental Advocacy Nonprofit Case Study
Participant Age(s): 14-16 years	Activity Length: ~3 hrs in total Activity Area(s): wilderness, meeting area
Materials	Re-usable/ Equipment: Fact sheet on environmental organization. Meeting space/communications equipment for interview
	Non-reusable: Writing materials for interview note-taking

References & Resources: Friends of Boundary Waters Wilderness Fact Sheet

Safety Considerations: n/a

Step 1: Outcomes

Environmental Education Outcome(s) Addressed *Circle as many as apply:*	1. Learners understand **natural history and ecological concepts**. 2. Learners develop **environmental sensitivity**.	3. Learners gain **knowledge of environmental issues**. 4. Learners develop environmental **beliefs and values**.	5. Learners gain **self-efficacy**. 6. Learners gain **knowledge of environmental action strategies**. 7. Learners gain **skills in using action strategies**.
Activity-Specific Outcomes *Knowledge, skills, abilities or values developed during the activity:*	1. Learners understand how environmental advocacy organizations can support environmental sustainability 2. Learners understand the roles that individuals can play in supporting the work of environmental advocacy organizations 3. Learners understand how environmental advocacy organizations develop strategies 4. Learners understand how an environmental advocacy organization balances wilderness conservation with economic development		

Step 2: Assessment

Assessing Outcomes Achievement *Describe how outcomes achievement will be evaluated*	1. Learners will be assessed on if they appeared to fully participate in the activity briefing, reading the fact sheet, preparing for and conducting the interview, preparing and delivering the presentation, and participating in the activity debrief 2. Learners will be assessed on if the interview was conducted appropriately and showed adequate preparation 3. Learners will be assessed on if their presentation satisfactorily covered required topics

Step 3: Learning Activity

Intro: 10 minutes	(Context: the group has been traveling through the Boundary Waters Canoe Area Wilderness and adjacent Superior National Forest in Minnesota USA for several days. Participants have experienced pristine wilderness areas as well as sites impacted by wildfire and (outside the wilderness) mining and clear-cut logging. Participants have been exposed to natural history and ecological concepts and have been introduced to environmental issues affecting the area (climate change, heavy visitor use, proposed copper mines). We are now exploring ideas about what individuals—personally or collectively—can do about threats to the area.) The facilitator will explain to participants that as the wilderness expedition comes to a close, we will be talking to the director of a local environmental advocacy organization to see how people have worked to preserve the wilderness.
Body: 150 minutes	While still in the wilderness, the leader will: 1. Hand out the fact sheet and interview prep page. 2. Provide time for participants to review materials, ask questions, and prepare to interview the environmental advocacy's director. 3. Help learners develop a plan for conducting the interview. 4. Once out of the wilderness, interview the environmental advocacy organization's director.
Conclusion: 30 minutes	The leader will lead a debrief of the activity. How did the interview go? What did you learn that was significant? How does this influence your thoughts about how you can take action—back at home, or elsewhere—to support environmental sustainability? What are the environmental organizations active where you live? If you don't know, how would you find out? Are there ways you might wish to be involved with an environmental group? What might they be?
Notes	This activity is intended to start while a group is traveling through the wilderness, and concludes when the group has returned to a settled area where the pre-arranged interview can be conducted by phone or in person. An infinite number of extensions such as a tour of the advocacy organization's offices, further research on the organization (beyond the fact sheet), an interview with an individual or group opposed to environmental conservation, etc. can be made, depending on circumstances. The interview needs to be arranged in advance.

Fact Sheet: Friends of the Boundary Waters Wilderness

The Friends of the Boundary Waters Wilderness is a non-profit organization founded in 1976, with a mission "to protect, preserve and restore the wilderness character of the Boundary Waters Canoe Area Wilderness and Quetico-Superior ecosystem."

The Boundary Waters Canoe Area Wilderness (BWCAW) is a 4,400 km^2 (1,090,000 acre) region of rugged and remote boreal forest and over 1,1000 lakes in the northern third of the Superior National Forest in northeastern Minnesota, USA, extending nearly 240 km (150 miles) along the international boundary with Canada. Following advocacy by the Superior National Forest Recreation Association, the area was set aside in 1926 to preserve its primitive character. The area was protected as a federally designated wilderness area—"an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain"—with the passage of the hard-fought Wilderness Act of 1964. With advocacy from the Friends of the Boundary Waters Wilderness, the Boundary Waters Canoe Area Wilderness Act was passed in 1978, expanding the size of the wilderness and enhancing environmental protections.

The BWCAW is contained with the larger Superior National Forest, managed by the U.S. Department of Agriculture. On the northern boundary of the BWCAW is Quetico Provincial Park in Ontario Canada, with over 4,600 km^2 (1,136,000 acres) of remote wilderness with 2,000 lakes.

The area has been inhabited for thousands of years by the Anishinaabe people. In the 1600s European settlers arrived, and began collecting fur-bearing animals such as beavers to send pelts back to Europe. Having killed so many animals the fur trade was no longer profitable, fur traders moved on, and were replaced by iron miners. By the mid 1940s, much of the land had been burned or logged.

Although the land was protected in 1964 by the Wilderness Act, legislation was introduced to reduce its size by almost half, and the Friends of the Boundary Waters Wilderness was founded to stop this. The Friends were instrumental in getting competing legislation, the Boundary Waters Canoe Area Wilderness Act, passed instead.

Area property owners contested the legislation in court, with the Friends and others coming to its defense. The US Supreme Court upheld the wilderness act in 1982.

The Friends of the Boundary Waters Wilderness sponsored the world's first International Acid Rain Conference in 1979, which helped lead to passage of a law recognizing acid rain as a major threat to the Boundary Waters and establishing strict protections.

BWCAW moose. Credit Ben Olson

The Friends sued the National Guard in 1988 over disruption to wildlife from jet noise, resulting in the military changing their flight areas to reduce wilderness disturbance.

The Friends have also sought to stop mechanized portages in the wilderness area and unsuccessfully fought installation of a lighted telecommunications tower near the wilderness.

Most recently, the Friends of the Boundary Waters Wilderness is fighting proposed destructive copper-sulfide mines near the wilderness area. Friends with its allies delivered 12,000 petitions to the state, submitted comments to a draft Environmental Impact Statement, and helped organize thousands of other public comments.

Friends has introduced a bill in the state legislature restricting damaging copper-sulfide mines, and encourages local citizens to sign a related petition and contact their legislator. Friends established a Citizen Action Network to attend meetings, share on social media, and take other action.

The group also works to diversify local economies away from resource extraction, to create economic development while protecting the environment.

Friends, with a budget of under US $2 million and some nine employees, is also active in reviewing logging proposals, monitoring invasive species, advocating for clean air legislation, and promoting a variety of legislation—from enhancing environmental protection to supporting economic diversification and increasing metal recycling.

Friends of BWW advocacy. Credit: FoBWW

In addition, Friends runs week-long outdoor education trips in the Boundary Waters Wilderness, and offers curriculum, online classes and school visits.

Friends of the Boundary Waters Wilderness also oversees the Friends of the Boundary Waters Action Network, a 501(c)(4) organization which endorses and promotes political candidates, and BWCA PAC (Political Action Committee), which makes direct financial contributions to political candidates. (Under US law, 501(c)(3) nonprofits such as Friends of the Boundary Waters Wilderness are restricted from engaging in these activities.)

Interview Preparation

For your one-hour interview with the Director of the Friends of the Boundary Waters Wilderness, read the fact sheet and this Interview Preparation document in advance.

The interview will be held once we are out of the wilderness. A pre-arranged time has been scheduled for the interview, and your leader will inform you of the details.

Tips for preparing for and conducting the interview:

1. Organize in advance who will ask which questions.
2. Make sure that opportunity to ask interview questions is distributed equitably among group members.
3. Thank the Director for their time and for sharing their perspectives at the start and again at the end of the interview.
4. Allow sufficient time for complete responses to be given. If responses seem to go on too long, respectfully manage the situation to keep the interview on schedule.
5. Focus on listening without agreeing or disagreeing with, or otherwise interrupting responses to questions.
6. Be polite, attentive and respectful, even if you disagree with positions or opinions stated.
7. Use the questions here as a guide, but deviate from the plan if it seems important to do so.
8. When back from the wilderness and as time allows, additional research on the nonprofit can be done at the organization's website at friends-bwca.org.

Suggested questions to ask (adapt as necessary):

1. How does the organization decide which action strategies to employ?
2. What collaboration does the organization engage in with like-minded groups to advance conservation efforts nationally or globally, and what is the reasoning behind choosing that approach to collaboration?
3. How does a regional environmental organization act on complex global issues such as climate change, over which you have limited influence, but which have a significant effect in the local area?
4. How do everyday individuals engage in supporting the organization's work? Donations? Sign petitions? Marches? Rallies? Call or write legislators? Direct action? Voter registration drives? Canvassing door to door? Volunteer in office or at events? Social media likes and engagement?
5. Why did the nonprofit charity create a non-charitable 501c4 Political Action Committee?
6. How does the organization acknowledge and address the need for jobs and access to natural resources (like wood and minerals) in its advocacy for environmental conservation, and how does addressing these needs influence the organization's effectiveness?

Curriculum: Assessment

Assessment of achievement of environmental education outcomes can vary, depending on the factors discussed in Education Component 5, Education. Sample assessments are illustrated below.

Outcomes Questionnaire. This is an example of an outcomes instrument filled out by program participants. It uses a retrospective pre-test/post-test design. The instrument follows the elements of the seven-point progression described earlier: Ecological Concepts, Environmental Sensitivity, Knowledge Of Issues, Beliefs and Values, Locus Of Control, Knowledge Of Action Strategies, and Skill In Using Action Strategies.

Please rate the following statements by circling a number from 1 to 5 (both on the left-hand column and on the right-hand column).
1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

Before the program		After the program (now)
1 2 3 4 5	I understand ecological concepts.	1 2 3 4 5
1 2 3 4 5	I feel emotionally connected to nature.	1 2 3 4 5
1 2 3 4 5	I am aware of an environmental issue in my community.	1 2 3 4 5
1 2 3 4 5	People benefit when nature is healthy and not degraded.	1 2 3 4 5
1 2 3 4 5	I can make a difference.	1 2 3 4 5
1 2 3 4 5	I am aware of things I can do to help the environment.	1 2 3 4 5
1 2 3 4 5	I have the skills to take action on behalf of nature.	1 2 3 4 5

Results from this instrument can guide conversations about ongoing improvements to curriculum design and delivery. Data, while potentially programmatically useful, is not scientifically valid unless the instrument is reliability-tested and validated.

Oral Interview. Another, more casual, evaluation is to simply ask participants (or participant group leaders such as school group chaperones or other attending adults) if and to what extent program objectives were met. This can be combined with other interview questions regarding logistics, food service, risk management, pre-course communications, and instructional or support personnel.

Responses are recorded in writing by program staff, and provided to management for review.

This more open-ended format will generally provide less focused, objective data regarding environmental education outcomes achievement, but can provide useful feedback about parts of the program that were effective and those which have opportunities for improvement.

Program-End Oral Interview

1) In what areas were the goals of the program met?

2) In what areas were the goals of the program not met?

3) Was there anything you particularly liked about the program?

4) Are there things about the program that you wish had been different?

5) [Further questions about logistics, food service, safety, staffing, etc. can begin here]

Curriculum: Methodologies

Experiential Education. Environmental education lends itself well to experiential education. For instance, learners can:

- Explore nature in unstructured ways (e.g. solo hikes or sit spots) or semi-structured ways (e.g. facilitated exploration activities) to learn about natural history and ecological concepts
- Build environmental sensitivity through direct experience with nature
- Learn about environmental issues by visiting sites degraded by environmental impacts, or where environmental conservation efforts are in effect
- Develop beliefs and values following direct experience with pristine or impacted natural areas
- Foster an internal locus of control by successfully overcoming structured challenges
- Learn about action strategies by seeing their application first-hand
- Develop skills in using action strategies by engaging in structured conservation, recovery or advocacy efforts

Activities should be appropriately framed beforehand and processed afterwards to maximize the value of the educational experience.

Adventure-Based Learning. Adventure-based learning is well-suited to helping learners develop an internal locus of control (aka empowerment or self-efficacy), an important outcome of environmental education programs. Structured challenges such as travel through wilderness areas, overcoming obstacles such as technical terrain or weather challenges, and building a trusting and collaborative team can help learners explore untapped capacities and learn they are more capable than they had perhaps previously believed.

Adventure-based learning also can provide for a fun and highly engaging encounter with nature, which

can support positive associations with the out-of-doors, leading to beliefs and values commensurate with environmental sustainability. Rafting a scenic whitewater river, hiking through the early morning darkness to view the sunrise from a mountain peak, or engaging in problem-solving games or initiatives in nature can provide enjoyable, sublime and satisfying experiences in the out-of-doors that can help build positive associations with experiencing the natural environment.

Inquiry-Based Learning. Inquiry-based learning is also well-suited to being applied to environmental education experiences. Learners can be guided to ask a suitable question, such as, “Is this stream healthy?” which they then work to figure out how to answer. When learners search for aquatic macro-invertebrates, collect water samples for contamination testing, or evaluate water flow and turbidity, they gain valuable skills in questioning, analysis and interpretation, and can learn first-hand about environmental processes and systems. Establishing questions, identifying ways to investigate them, and successfully answering those questions can also be an empowering experience.

Progression. Progression (scaffolding/constructivism) can be incorporated into environmental education experiences in a number of ways.

Building on learner’s prior knowledge can help make environmental education experiences feel relevant. Referencing learner’s pre-existing studies of biology or other natural sciences in future learning activities is an example; designing learning journeys around environmental issues learners may already have faced (such as impacts of climate change) can also deepen the meaning and impact of educational experiences.

Environmental education activities can be directly connected to the areas that learners have experienced. For example, learners might investigate or consider environmental issues near their home (such as environmental justice issues in their home city), or affecting racial, religious, ethnic or other groups to which they belong.

Exploring environmental issues in areas with which learners are familiar may be more effective than discussing concerns in locations where learners have never been. For example, it may be more educationally effective for a group of 10-year olds from Toronto Canada to look at a controversial hydroelectric dam project in their province than for them to study habitat destruction of tropical forests for palm oil plantations in Malaysia.

Curriculum: Syllabus

A syllabus for an outdoor program that includes environmental education experiences can show where environmental education occurs during the course of a program.

An example syllabus for the first day of a three-day environmental education experience at an environmental learning center might look like this:

Day 1 Syllabus
Three-Day Environmental Education Program

- Participants arrive at environmental learning center
- Welcome, safety talk, put away luggage
- Large group introduction and ice-breaker activities
- Meet trail group leader. Trail group activity session 1.
- Lunch
- Trail group activity session 2
- Free time
- Dinner prep
- Dinner
- Evening program
- Bedtime

A more detailed outline of the three-day program illustrates specific environmental education activities, and links them to the elements of the seven-point progression described earlier.

Those elements, color-coded so they can be identified in the expanded syllabus, are:

- **Ecological Concepts**
- **Environmental Sensitivity**
- **Knowledge of Issues**
- **Beliefs, Values**
- **Locus of Control**
- **Knowledge of Action Strategies**
- **Skill in Using Action Strategies**

Expanded Syllabus: Three-Day Environmental Education Program
(outcomes elements noted in color)

Day 1

- Arrive, welcome
- Trail groups hike
  - Sensory awareness activities—**Environmental sensitivity**
  - Introduce **ecological concepts** at trail-side stops (change/succession)
  - Introduce **environmental issue**—logging/deforestation (knowledge of issues)
- Trail groups canoeing
  - Natural history instruction regarding observed wildlife (**ecological concepts**)
  - Introduce **ecological concepts**—water cycle, watersheds
  - Introduce **environmental issue**—water pollution from logging (issues, beliefs/values)
- Evening program slide show—local natural history, **ecological concepts**

Day 2

- Hike
  - Micro Parks activity-**Environmental sensitivity**
  - Geology activity--Natural history/**ecological concepts**
  - Web of Life activity—**Ecological concepts** (interconnection)
  - Discuss impacts of logging—**Beliefs/values**, **environmental sensitivity**
  - Paper recycling—**Knowledge of action strategies**
- Stream exploration
  - Aquatic life exploration--Natural history/**ecological concepts**
  - StreamKeepers program—**Knowledge of action strategies**, **skill in using action strategies**
- Low ropes course—**locus of control**
- Town Hall decision-making activity—**Beliefs/values**, **knowledge of issues**, **locus of control**, **knowledge of action strategies**, **skill in using action strategies**

Day 3

- Journaling on environmental citizenship—**Environmental sensitivity**, **beliefs/values**, **knowledge of action strategies**
- Letter-writing to legislator—**Skill in using action strategies**
- "Earth Wish" activity—**Environmental sensitivity**, **knowledge of action strategies**
- Follow-up project—**Skill in using action strategies**
- Follow-up activities packet—**Ecological concepts**, **knowledge of action strategies**, **skill in using action strategies**
- Follow-up project presentation at school site—**Locus of control**, **skill in using action strategies**

Not all outdoor programs can be exclusively dedicated to environmental education, however.

A syllabus for a five-day traditional summer camp experience focused on outdoor recreation, but with a few environmental education experiences included, is below.

Blue sections indicate environmental education activities. Areas with no text indicate general summer camp activities. Grey areas indicate timeframes before or after the camp session.

Activities are coded as follows:

Ecological Concepts	EC	Locus of Control (Self-Efficacy)	SE
Environmental Sensitivity	ES	Knowledge of Action Strategies	KAS
Knowledge of Issues	KI	Skill in Using Action Strategies	SAS
Beliefs, Values	BV		

Each of the seven elements is addressed at least once during the week. (However, the strength and longevity of changes from such a brief environmental education experience will be significantly limited.)

<table>
<tr><th></th><th>Day 1</th><th>Day 2</th><th>Day 3</th><th>Day 4</th><th>Day 5</th><th>Day 6</th></tr>
<tr><td></td><td rowspan="13"></td><td rowspan="2">Morning Unit Time</td><td rowspan="2">Morning Unit Time</td><td rowspan="2">Morning Unit Time</td><td rowspan="2">Morning Unit Time</td><td rowspan="3">Pack Up/Clean Units</td></tr>
<tr><td></td></tr>
<tr><td>7:00</td><td>Flag</td><td>Flag</td><td>Flag</td><td>Flag</td></tr>
<tr><td>8:00</td><td>Breakfast</td><td>Breakfast</td><td>Breakfast</td><td>Breakfast</td><td>Breakfast @ 8:45</td></tr>
<tr><td>8:15</td><td rowspan="5"></td><td rowspan="5"></td><td rowspan="4"></td><td rowspan="4"></td><td rowspan="5"></td></tr>
<tr><td>9:30</td></tr>
<tr><td>10:00</td></tr>
<tr><td>10:30</td></tr>
<tr><td>11:00</td></tr>
<tr><td>11:30</td><td rowspan="3"></td><td rowspan="3">Activity 3. Rock Wall (SE)</td><td rowspan="3">Activity 4. Local Food, Gardening Time, Compost Tour
Pack-out Lunch (EC, KI, KAS, SAS)</td></tr>
<tr><td>12:00</td></tr>
<tr><td>12:30</td><td rowspan="2">Lunch</td><td rowspan="2">Lunch</td><td rowspan="2">Lunch</td><td rowspan="2">Lunch</td></tr>
<tr><td>1:00</td></tr>
<tr><td>1:30</td><td rowspan="6">Camper Check-In</td><td>Me-Time</td><td>Me-Time</td><td>Me-Time</td><td>Me-Time</td><td rowspan="7">Check-Out</td></tr>
<tr><td>2:00</td><td rowspan="6"></td><td rowspan="6"></td><td rowspan="6"></td><td rowspan="6"></td></tr>
<tr><td>2:30</td><td rowspan="5">Activity 1. Micro Hike (EC, ES)</td></tr>
<tr><td>3:00</td></tr>
<tr><td>3:30</td></tr>
<tr><td>4:00</td></tr>
<tr><td>4:30</td></tr>
<tr><td>5:00</td><td rowspan="3">Dinner</td><td></td></tr>
<tr><td>5:45</td><td>Flag</td><td>Flag</td><td>Flag</td><td>Flag</td></tr>
<tr><td>6:00</td><td>Dinner</td><td>Dinner</td><td>Dinner</td><td>Dinner</td><td rowspan="7"></td></tr>
<tr><td>7:30</td><td rowspan="3">Opening Campfire</td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="4"></td><td rowspan="3">Closing Campfire</td></tr>
<tr><td>8:00</td></tr>
<tr><td>8:30</td></tr>
<tr><td>9:00</td><td></td><td></td><td>Activity 2. Bat watching and Animal Dances (KI, BV, KAS)</td><td></td></tr>
<tr><td>9:30</td><td>Evening Unit Time</td><td>Evening Unit Time</td><td>Evening Unit Time</td><td>Evening Unit Time</td><td>Evening Unit Time</td></tr>
<tr><td>10:00</td><td>Lights Out</td><td>Lights Out</td><td>Lights Out</td><td>Lights Out</td><td>Lights Out</td></tr>
</table>

A similar schedule could be drawn up for an expeditionary-based wilderness program, with an environmental education activity every day or so.

Application In Context

We recognize that it's important to recognize that our capacity to deliver a comprehensive environmental education curriculum that leads to the development of individuals who have the skills, knowledge, abilities and values commensurate with effectively fostering environmental sustainability is limited by the training, funding, time, and other resources available to outdoor leaders.

Global economic models and political influences also limit—but do not eliminate—the capacity of those not in positions of great economic or political power to foster global environmental sustainability.

We therefore should—without losing sight of the end goal of environmental education—come to peace with the limitations that outdoor leaders face in providing environmental education experiences. And we should recognize that even incorporating small amounts of environmental education into outdoor adventure experiences may make a difference.

Good environmental education also takes into consideration the age of learners. While seven year olds in a forest school may be overwhelmed by lessons on the global climate crisis, for instance, it's generally an apt subject for those in their teenage years and above.

Integrating concepts of equity and inclusion into environmental education programming is also important; this can range from looking at local environmental issues affecting less-privileged communities, to the disproportionate effect that environmental issues have globally on the most vulnerable populations and persons.

Awareness is also increasing regarding the importance of integrating Traditional Environmental Knowledge from native, First Nations, and Aboriginal groups into environmental education curriculum.

Environmental education associations and agencies are also developing and improving resources to help practitioners work effectively with individuals with physical disabilities, learning disabilities, and other conditions.

Depending on the context in which your outdoor program operates, paying attention to considerations described above may enhance the effectiveness of environmental education programming you provide.

Summary

1. Environmental education is a complex academic discipline and field of study.

2. Environmental education can be integrated into outdoor adventure education, within limits.

3. Environmental education has a goal to develop a world population with the knowledge, values, attitudes, motivations, skills and commitment to actively foster environmental sustainability.

4. Environmental sustainability involves meeting the needs of current generations without compromising the ability of future generations to meet their own needs.

5. Comprehensive environmental education programs address ecological concepts, environmental sustainability, knowledge of issues, beliefs and values, locus of control, and knowledge of and skill in using action strategies.

6. Environmental education programs should address analysis and interpretation skills, understanding environmental processes, environmental action skills, and personal and civic responsibility.

For Further Information

North American Association for Environmental Education
https://naaee.org/
Well-regarded source of high-quality environmental education resources, with regional affiliates

Global Environmental Education Partnership
https://thegeep.org/
A global network of environmental education organizations

Journal of Environmental Education
https://www.tandfonline.com/toc/vjee20/current
Leading academic journal on environmental education research

Hungerford, Harold R & Center for Instruction, Staff Development and Evaluation. **Essential Readings in Environmental Education**. (3rd Ed.) Stipes Publishing, 2005.
https://www.worldcat.org/title/essential-readings-in-environmental-education/oclc/61231626
Complication of important articles on environmental education

eePRO
https://naaee.org/eepro
Environmental education resources from NAAEE

Guidelines for Excellence in Environmental Education
https://naaee.org/our-work/programs/guidelines-excellence
Environmental education standards

Belgrade Charter
Seminal definition of environmental education
https://cdn.naaee.org/sites/default/files/eepro/resource/files/belgrade_charter.pdf

Tbilisi Declaration
https://cdn.naaee.org/sites/default/files/tblisi_declaration.pdf
Seminal document describing environmental education objectives

Our Common Future (**Brundtland Report**)
https://www.are.admin.ch/are/en/home/media/publications/sustainable-development/brundtland-report.html
Provides environmental sustainability definition

Harold R. Hungerford & Trudi L. Volk (1990) **Changing Learner Behavior Through Environmental Education**, The Journal of Environmental Education, 21:3, 8-21, DOI: 10.1080/00958964.1990.10753743
http://www.elkhornsloughctp.org/uploads/files/1374624954Changing%20learner%20behavior%20-%20H%20and%20V.pdf
Influential article on research findings regarding effective environmental education programs

LEARNING ACTIVITIES

Requirements

To complete the environmental integration module, participants must:

1. **Reading.** Read the "Goals" and "Subject Matter Information" sections of the Environmental Integration content
2. **Discussion.** Respond thoughtfully to discussion prompts as assigned by your instructor.
    a. These discussion prompts may be addressed in one or more formats, as specified by your instructor. Formats may be online asynchronous discussion forums, personal journal, group journal, or live real-time group discussion.
    b. Specific discussion prompts may be assigned by your instructor. Four discussion prompts that may be used include:
        i. For a typical course, trip, program, session or experience you would lead as an outdoor leader, how would you integrate environmental education? How much time would you devote to EE? Which of the seven elements of the EE progression would you include; which would you omit, and why?
        ii. With your guidance, your learners can become competent in activities like climbing, paddling, navigation, and campcraft. But your learners are unlikely to

be able to single-handedly address the global climate crisis or otherwise lead the world to environmental sustainability. How do you reconcile with the limits of your capacity to support the end goals of environmental education?

iii. Individuals who are low-income or marginalized face increased risks from environmental degradation (such as zoonotic diseases from biodiversity loss, or flooding, drought and fire from climate change). How will your environmental education activities account for issues of equity and inclusion in environmental justice?

iv. Corporate funders, government entities, and others with influence may seek to reduce environmental education curriculum to science-based activities or local litter cleanup, or otherwise diminish the action orientation of environmental education and its focus on true environmental sustainability. How might you address this issue?

3. **Syllabus.** Write a complete syllabus for an outdoor program that includes an environmental education component. Environmental education may be the sole focus on the program, or only a minor part of the program.
4. **Lesson Plan.** Write a comprehensive, detailed lesson plan for an environmental education activity. Integrate best practice principles for environmental education activities and curricular materials. Include learning objectives, activities, and a description of how outcomes achievement will be assessed.
5. **Lesson Presentation.** Conduct your environmental education lesson/activity. Complete the planned activities and the assessment of outcomes achievement.
6. **Group Activities.** Participate in any group activities (instructor presentations, projects, etc.) that are established by your instructor as part of the learning experience.
7. **Exam.** Complete the written Environmental Integration exam.

Venue

All learning activities in the Environmental Integration module can be conducted in the field or in an online or classroom format. Participant presentations of their lessons/activities in the field rather than in the classroom or online context is preferred but not required.

ASSESSMENT

Successful completion of the Environmental Integration module will be evaluated according to the following criteria:

1. **Discussion.** Participant engages fully in discussions, showing independent thought and analysis.
2. **Syllabus.**
    a. Syllabus describes learning activities that support achievement of widely-accepted goals for environmental education programming.
    b. Syllabus describes a volume and pacing of learning content that is realistic given time and other resource constraints.

c. Syllabus illustrates a progressive sequencing of activities that supports achievement of environmental education outcomes.

3. **Lesson Plan.**
    a. Lesson plan describes contextual information such as activity title, participant ages, activity length and/or location, materials needed, references, and safety considerations, as appropriate
    b. Lesson plan describes outcomes, how outcomes achievement will be assessed, and learning activities
    c. Lesson plans meet standards for excellence in environmental education materials design: accurate and inclusive, emphasis on skills building, fostering depth of understanding, helping develop personal and civic responsibility, and supporting instructional effectiveness and usability.
    d. Lesson plan incorporates one or more thematic strands of environmental education outcomes: questioning, analysis and interpretation skills; understanding environmental processes and systems, building skills for understanding and addressing environmental issues, and fostering personal and civic responsibility.
4. **Lesson Presentation.**
    a. Lesson presentation shows careful and effective preparation.
    b. Lesson/activity is delivered clearly, with delivery adjusted as needed for audience and conditions, and with good time management and safety management.
    c. Lesson activities build towards pre-established outcomes.
    d. Assessment of lesson outcomes is conducted.
5. **Group activities.** Be present for and engaged in all mandatory group activities, as applicable.
6. **Exam.** Participant answers at least 80 percent of exam questions correctly.