Workshop Resources

Guidelines for Excellence

Professional Development of Environmental Educators

naaee
North American Association for Environmental Education

Workshop Resources

Professional Development of Environmental Educators: Guidelines for Excellence

Written by:
Bora Simmons
Elizabeth Schmitz

Contributors:
Lisa Herrmann
Renee Strnad
Sally Wall
Brenda Weiser

naaee
North American Association for Environmental Education

naaee.org

Professional Development of Environmental Educators: Guidelines for Excellence – Workshop Resources is part of a continuing series of documents published by the North American Association for Environmental Education (NAAEE) as part of the National Project for Excellence in Environmental Education. The project is committed to synthesizing the best thinking about environmental education through an extensive process of review and discussion.

This project was funded by the Office of Environmental Education at the U.S. Environmental Protection Agency (EPA) through the Environmental Education and Training Partnership (EETAP) and EECapacity. Additional funding and support for this project has been received from the University of Oregon.

The contents of this document do not necessarily reflect the views and policies of the U.S. EPA, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

naaee.org

naaee.org/eepro

1725 Desales, Suite 401, Washington, DC 20036

naaee.org

NAAEE is the professional association for environmental educators in North America and beyond.

Education We Need for the World We Want

Workshop Resources

Professional Development of Environmental Educators: Guidelines for Excellence

Workshop Overview

In this workshop, participants will be introduced to a set of competencies for educators preparing to teach environmental education in a variety of job settings. They will have the opportunity to complete a self-assessment against these competencies. If you follow the module as outlined, the workshop will take approximately 7 hours to complete, not counting breaks and lunch.

Workshop Background

This workshop introduces participants to *Guidelines for the Professional Development of Environmental Educators: Guidelines for Excellence*. These guidelines outline a set of recommendations about the basic knowledge and abilities educators need to provide high-quality environmental education. The guidelines are designed to apply

- within the context of preservice teacher education programs and environmental education courses offered to students with varied backgrounds such as environmental studies, geography, liberal studies, or natural resources
- to the professional development of educators who will work in both formal and nonformal educational settings, offering programs at the prekindergarten through 12th grade levels
- to full-time environmental educators and those for whom environmental education will be among other responsibilities or integrated with the curriculum

Workshop Objectives

- Participants will describe a set of environmental educator competencies
- Participants will assess their own level of preparation and need for professional development in environmental education using the *Professional Development of Environmental Educators: Guidelines for Excellence*

Materials Needed

- ✓ Projector and PowerPoint presentation (optional)
- ✓ Chart paper, markers, tape
- ✓ Copies of *Professional Development of Environmental Educators: Guidelines for Excellence* for each participant (Note: These guidelines are currently out of print. However, a PDF is available for free download at https://naaee.org/our-work/programs/guidelines-excellence)
- ✓ Journals for each participant (e.g., blue books, notebooks, sheets of paper stapled together)
- ✓ Copies of handouts
    - Handout #1: Summary of the *Professional Development of Environmental Educators: Guidelines for Excellence*
    - Handout #2: Where Is the Environmental Literacy?
    - Handout #3: Environmental Education Timeline
    - Handout #4: Scenario: Dos and Don'ts for a Civics Teacher
    - Handout #5: *Two Hats*, by John Hug
    - Handout #6: Analyzing Instructional Approaches
    - Handout #7: Self-Assessment for Environmental Educators
    - Handout #8: Workshop Evaluation

Sample Workshop Agenda

Welcome, Introductions, and Logistics
Icebreaker
Project Background
Getting Started—Jumping into Professional Learning
Getting into the Six Themes
- Where Is the Environmental Literacy?
- Environmental Education Timeline
- *Two Hats*, by John Hug
- Analyzing Instructional Approaches
- Fostering Learning
- Thinking about Assessment and Evaluation

Pulling It All Together—Self-Assessment
Wrap-Up, Questions, and Evaluation

Welcome, Introductions, and Logistics — 15 minutes

Icebreaker — 45 minutes

Use Draw an Environmental Educator (below) or pick one of your favorite icebreakers. If possible, use the icebreaker as both an opportunity for participants to get to know one another and to begin the process of thinking about what it means to be a well-prepared environmental educator.

Activity: Draw an Environmental Educator

This activity gets participants talking about the characteristics of an environmental educator. It can be used as an icebreaker activity or as an engagement activity. In small groups, participants are asked to illustrate an environmental educator.

Materials

- ✓ Chart paper and a variety of colored markers or crayons
- ✓ Copies of Handout #1: Summary of the *Professional Development of Environmental Educators: Guidelines for Excellence*

Procedure

1. Divide participants into small groups (three to five participants per group).
2. Give each group a large piece of chart paper and a variety of colored markers or crayons.
3. Ask participants to illustrate an environmental educator. It is best not to clarify your instructions. You want the group to be as creative as possible.
4. Give the participants a time limit (it typically takes about 20 minutes for them to draw their environmental educator) and tell them that they will be asked to share their illustration with the other groups.
5. When all the groups have completed their illustrations, ask each group to describe it to the others (approximately three minutes per group).

6. Ask the groups to focus back on their own illustration and ask them to annotate their drawing to further explain the knowledge, skills, and dispositions (motivations, attitudes, beliefs) illustrated.

Wrap-Up

1. Hand out a one-page summary of the *Professional Development of Environmental Educators: Guidelines for Excellence* to each participant (Handout #1).
2. Ask participants to read through Handout #1 and mark which elements of the *Professional Development Guidelines* were illustrated by their group's drawing. What was missed? If you were given the opportunity to change your illustration and its annotation, what would you change?

Reflection—Journaling

Look back at your illustration. What are your strengths as an environmental educator? What would you like to work on most to improve your practice?

Project Background 15 minutes

Provide a short overview of NAAEE, the National Project for Excellence in Environmental Education, and the purpose behind the *Professional Development of Environmental Educators: Guidelines for Excellence.* What is NAAEE? What is the National Project for Excellence in EE? Why were the *Guidelines for Excellence* series developed? How were they developed? Why were the *Professional Development Guidelines* written*?*

Getting Started—Jumping into Professional Learning 10 minutes

Activity: A Walk through the Guidelines

In this activity, take a few minutes to orient participants to *Professional Development of Environmental Educators: Guidelines for Excellence.*

Materials

- ✓ Copies of *Professional Development of Environmental Educators: Guidelines for Excellence* for each participant

Procedure

1. Hand out photocopies of *Professional Development of Environmental Educators: Guidelines for Excellence*. If possible, have a copy available for each participant. If that isn't possible, participants can share.
2. Walk the participants through the guidelines and how they are organized. Give participants one to two minutes to become familiar with the publication.
3. Tell the participants that the guidelines have six themes with essential characteristics or guidelines for each theme. Today, we will spend time exploring each theme.

Getting into the Six Themes

Theme #1 60 minutes

Environmental Literacy describes the understandings, skills, and attitudes associated with environmental literacy. These competencies have been defined in detail in *K-12 Environmental Education: Guidelines for Excellence.* The four strands offer a broad summary of the content knowledge and basic skills required of environmentally literate educators.

Activity: Where Is the Environmental Literacy?

In this activity, participants examine a series of lesson objectives and determine how they relate to an environmental literacy framework. Note: This activity is also used in Module #5: Nonformal Environmental Education Programs.

Materials

- ✓ Handout #2: Where Is the Environmental Literacy? Using Handout #2, prepare two envelopes for each group: a) EE objectives, and b) environmental literacy

Procedure

1. Divide the participants into small groups (three to five participants per group).
2. Explain that they will be asked to complete a simple matching exercise.
3. Give each group two envelopes: a) EE objectives, and b) environmental literacy
4. Tell participants to look carefully at the objectives and look carefully at the environmental literacy framework elements.
5. Ask participants to match each objective to the appropriate environmental literacy framework element.

Wrap-Up

After each group has completed the task, lead a discussion about their findings. Did they have any difficulties categorizing any of the lesson objectives? If some objectives were more difficult than others, ask them to describe their thinking. Was there at least one objective for each element of the environmental literacy framework?

Reflection—Journaling

Using your journal, take some time to reflect on your own environmental literacy. Using the environmental literacy framework as a reference, think about your own preparation. How environmentally literate are you? Which of the four themes do you think you are strongest in and why? Which could use further development?

Theme #2 45 minutes

Foundations of Environmental Education focuses on a basic understanding of the goals, theory, practice, and history of the field of environmental education. This knowledge provides a solid foundation on which educators can build their own practice.

Activity: Environmental Education Timeline

This activity can be used either at this point in the workshop or as an icebreaker. Participants are given several events or names of people important to the history and development of environmental education as a field. They are asked to place these events or people in order chronologically.

Materials

- ✓ Handout #3: Environmental Education Timeline

Procedure

1. Tell participants that they will be working individually at first and then they will work with one to two others at their table.
2. Explain that, as a group, they will be completing a timeline. Point out the timeline you have outlined (on a wall or on the floor). Tell them that the timeline starts in the late 1800s and continues to the present. Make sure to divide the time line into 20-year segments.
3. Explain that they will be given three to four cards. Each card will include an event or the name of a person. Their task is to put these cards into chronological order. Eventually, they will be asked to place their cards on the timeline.
4. Once they have placed their own cards in chronological order, they should work with others at their table to put all their cards in chronological order.
5. As groups complete their task and all their cards are in chronological order, they should add all of their cards to the timeline.

Wrap-Up

Once all of the groups have added their cards to the timeline, work as a large group to review their work. Are their events or people not placed in the proper point on the timeline? Ask those who propose a change to explain their thinking. Discuss a few of the major events or people. Take the time to correct the timeline if any of the events or people are still out of place.

Point out to participants how Guideline 2.1: Fundamental characteristic and goals of environmental education and Guideline 2.3: The evolution of the field relates to their timeline. Before moving on, take a moment to review Guideline 2.2: How environmental education is implemented.

Theme #3 70 minutes

Professional Responsibilities of the Environmental Educator focuses on EE as a profession that maintains consistent and high standards for instruction and professional conduct.

Activity: *Two Hats*

In this activity, participants will discuss the roles of education and advocacy. Distinguishing between education and advocacy often results in a lively discussion. Because it impacts conceptions of professional roles and responsibilities, it deserves a thorough discussion. As part of this extended discussion, participants will read John Hug's short essay *Two Hats*.

Materials

- ✓ Handout #4: Dos and Don'ts for a Civics Teacher
- ✓ Handout #5: *Two Hats,* by John Hug

Procedure

1. Distribute Handout #4 to each participant. Tell them that they should read the scenario about a civics teacher.

Scenario: Dos and Don'ts for a Civics Teacher

A public middle school civics teacher in a politically polarized community is preparing to teach a unit about political parties during an election year. The teacher wants to include a discussion of public policy stands on controversial issues such as abortion, immigration, and the death penalty. This teacher will need to discuss with students these current issues and how different candidates approach those issues.

If you were giving some guidance to civics teachers, what would be on your "dos" and "don'ts" list for high-quality instruction?

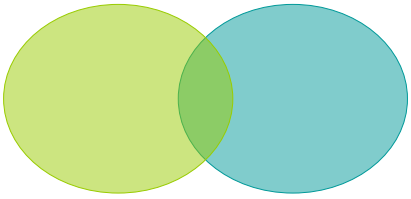
2. Working individually, each person should create a list of dos and don'ts for the teacher.
3. When most of the participants have completed their lists, ask them to share their dos and don'ts with a partner.
4. Come back together as a whole group and ask pairs to share one to two items from their list. Continue around the room until most groups have contributed.
5. Give members of the group a chance to ask questions of each other and comment on list items.
6. Working at their table groups (or as a large group), ask participants to finish this sentence: The role of a civics teacher is to _____.
7. Now, tell the participants that we are going to shift the discussion to environmental education and concerns around the role of an environmental educator.
8. Distribute copies of John Hug's *Two Hats* essay. This essay can be read silently, but we recommend that you ask volunteers to read it aloud, two to three sentences at a time, while the rest of the group follows along.
9. Ask participants if they have any comments or general impressions. How might they finish the sentence: The role of the environmental educator is to _____?

Wrap-Up

1. Draw a Venn diagram on a flip chart or on a white board at the front of the room.
2. Label one circle "Environmental Educator" and label the other circle "Environmental Advocate."
3. To get their thinking going, ask them to name an organization or two that an environmental educator might work for or with. Do the same for the environmental advocate.
4. Ask participants to think about the roles of an environmental educator and an environmental advocate. What is an environmental educator doing that is very different from what an environmental advocate does? These items should be written in the environmental educator circle.
5. Now, what is an environmental advocate doing that is very different from what an environmental educator does? These items should be written in the environmental advocate circle.

6. Are there roles played by both an environmental educator and an environmental advocate? As you might suspect, these items should be placed in the overlap between the two circles.
7. Ask the participants if they think there are bright lines between being an environmental educator and an environmental advocate. When might there be conflicting roles? Are there times that the roles of the environmental educator and the environmental advocate are basically the same? What might help them to clarify when they are wearing which hat?
8. Ask them to look back at Theme #1: Environmental Literacy. Does this framework give them any guidance in thinking about the role of an environmental educator?
9. As a final note, point out Guideline 3.1: Exemplary environmental education practice and Guideline 3.3: Ongoing learning and professional development. Remind participants that ongoing learning and professional development, coaching, mentoring, volunteering, and participation in local, state, and national organizations are important components of engaging in the profession.

Environmental Educator **Environmental Advocate**



Reflection—Journaling

According to Hug, what is the major difference between environmental education and environmental advocacy? When you think about your roles, do you see yourself as more of an environmental educator or an environmental advocate, or somewhere in between? Why? How comfortable are you with these role descriptions?

Before moving on to the next theme, remind participants that an essential component of an environmental educator's professional responsibilities include ongoing learning and professional development (Guideline 3.3) and that there are numerous local or regional or national resources available to support their professional development, including NAAEE (e.g., conference and eePro) and state affiliate or other state EE organizations.

Theme #4 30 minutes

Planning and Implementing Environmental Education suggests that environmental educators must combine the fundamentals of high-quality education with the unique features of environmental education to design and implement effective instruction. This will involve being able to provide the

interdisciplinary, practical, investigative learning opportunities that are central to environmental education.

As an engagement activity, lead the participants in your favorite song that teaches or reinforces a concept or skill and uses hand or body movement. If you don't know one, ask the participants if anyone is willing to teach everyone their favorite song. One possible option is the "Water Cycle" song: www.drjean.org/html/monthly_act/act_2009/04_Apr/pg11.html. Ask participants why this type of song might be used as part of environmental education instruction?

Tell the participants that we will be looking at the planning and implementation of environmental education instruction.

Activity: Analyzing Instructional Approaches

In this activity, participants will explore several widely used instructional approaches and consider how they can be adapted for different audiences, settings, and the use of instructional technology.

Materials

- ✓ Internet access
- ✓ Handout #6: Analyzing Instructional Approaches

Procedure

1. Ask participants to brainstorm common instructional strategies used in environmental education. Write these on chart paper or on the board.
2. Ask participants to compare their list to the list of Essential Approaches to Environmental Education Instruction found under Theme Four.
3. Form small groups (two to four participants per group) and assign each group one of the approaches. You may include one or more of the approaches brainstormed by the group, if desired. Explain that they will be exploring their assigned approach.
4. Tell the participants that their job will be to investigate their instructional approach using Handout #6: Analyzing Instructional Approaches. Distribute a copy of Handout #6 to each group. Note: This activity assumes that participants have ready access to computers or smart phones with Internet service. If Internet is not available, you will need to provide short descriptions of each approach to participants.
5. When most of the groups have completed Handout #6, ask each group to create a poster with their findings.

Wrap-Up

Post the posters around the room and conduct a gallery walk. As you move around the room, discuss the findings and open the discussion up for questions. After participants have visited all of the posters, ask them if they would change anything on their poster? Were their considerations or adaptations that surprised them?

Theme #5 — 50 minutes

Fostering Learning and Promoting Inclusivity suggests that environmental educators must enable all learners to engage in culturally relevant open inquiry and investigation, especially when considering environmental issues that are controversial and require learners to seriously reflect on

their own and others' perspectives. Educators' training should prepare them to foster an environment, including participant interactions, that is conducive to learning.

Reflection—Journaling

Using your journals, reflect on your favorite teacher or learning experience. What made this teacher or experience so special?

Activity: Fostering Learning

In this activity, participants will develop a rubric or teaching observation form for each of the guidelines listed under Key Characteristic #5: Fostering Learning and Promoting Inclusivity.

1. To introduce an exploration of how educators can foster learning, ask the participants to quickly share one or two of their reflections on their favorite teacher or learning experience.
2. After a few participants have shared their reflections, form three groups and assign each group one of the three guidelines: Guideline 5.1: A climate for learning about and exploring the environment; Guideline 5.2: An inclusive and collaborative learning environment; and Guideline 5.3: Flexible and responsive instruction. If you have a large number of participants, form groups of no more than four or five, but still assign each group just one of the three guidelines.
3. Ask each group to imagine that they are mentoring novice environmental educators. As a mentor, they want to observe the novice educators' teaching and provide constructive feedback to them on the degree to which they are addressing the criteria established in Theme #5: Fostering Learning.
4. Ask each group to create a rubric or teaching observation form that could be used to gauge the novice educators' ability to address their assigned guideline.
5. Once the group has completed their task, ask them to create a poster to share with the other groups.
6. Ask each group to share their work with the rest of the participants.

Reflection—Journaling

Take a moment or two to think about your own teaching and the teacher observation forms or rubrics you just created. If you observed one of your typical classes, how would you rate? What are your strengths and what are areas of needed improvement?

Theme #6 40 minutes

Assessment and Evaluation suggests that environmental educators should possess the knowledge, abilities, and commitment to make assessment and evaluation integral to instruction and programs. Professional preparation should provide educators with tools for assessing learner progress and evaluating the effectiveness of their own programs.

Activity: Thinking about Assessment and Evaluation

This activity draws on participants' knowledge and past experiences with assessment and evaluation.

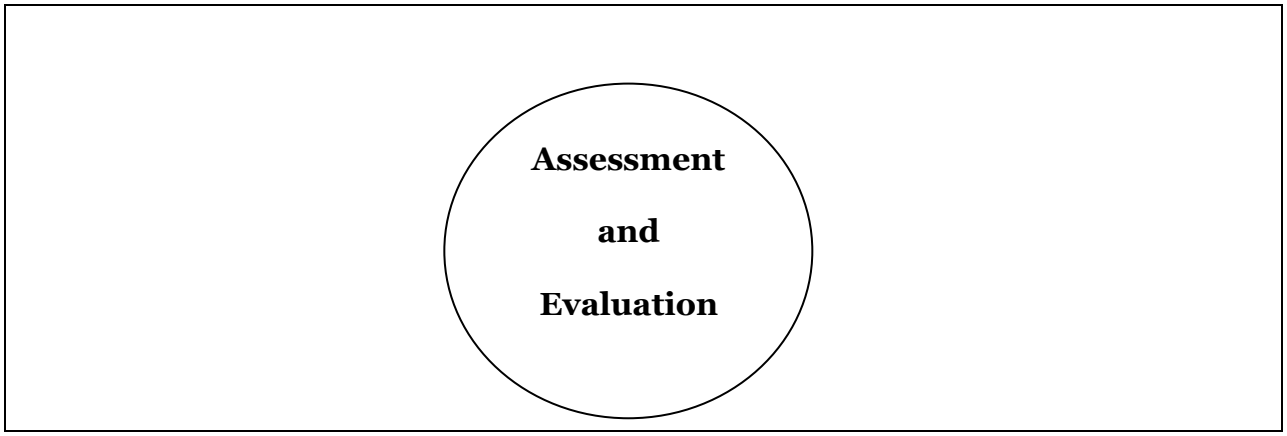
Definitions

Assessment—Evaluation of skills and knowledge acquired by learners during a learning experience.

Evaluation—A process designed to determine if planned outcomes have been achieved.

Procedure

1. Tell the participants that we are going to move on to a new topic: Assessment and Evaluation. Introduce the topic by asking if anyone can provide a quick definition of evaluation? Who can provide a quick definition of assessment?
2. Now, ask if any of the participants has conducted an evaluation? Ask them to describe their experiences briefly. Who uses assessment? Ask them to describe their experiences briefly.
3. Draw a circle map on the board or a large piece of chart paper in the front of the room. A circle map starts off with a frame (square) and a circle in the middle of the frame. Write the words Assessment and Evaluation in the middle of the circle:



4. Ask participants: What are some of the benefits of assessment? Write a phrase or two that captures their responses inside the frame. What are some of the benefits of evaluation in environmental education? Write a phrase or two that captures their responses inside the frame. Continue their brainstorming session by asking questions like these: What are some ways you can incorporate assessment into environmental education instruction? What are some ways you can incorporate evaluation into environmental education instruction?
5. Continue probing the participants until they have touched on most of the key points outlined in Theme Six and the four guidelines:
    - 6.1 Learner Outcomes,
    - 6.2 Assessment that is part of instruction,
    - 6.3 Improving instruction,
    - 6.4 Evaluating programs

6. Turn the participants' attention to Theme Six in the *Guidelines for the Preparation and Professional Development of Environmental Educators*. Give them a couple of minutes to review the four guidelines.

Activity: Pulling It All Together — 20 minutes

As a culminating exercise, and an example of assessment, ask participants to reflect further on the six themes and their own capacities as an environmental educator.

Materials

- ✓ Handout #7: Self-Assessment: *Professional Development of Environmental Educators*

Procedure

1. Hand out copies of the self-assessment tool to the participants and give them about 15 minutes to complete.
2. Discuss their reactions. You may want to focus on any insights into the creation of a professional development improvement plan.

Note: You can have participants complete the self-assessment during the workshop or send it home with them as a way of continuing the lesson. Consider offering a follow-up conference call, webinar, Google Hangout, or other virtual environment to discuss their self-assessment and the plan they developed as a result of their self-assessment. This would assist with developing a stronger learning community and sustained professional learning.

The North American Association for Environmental Education (NAAEE) has a resource-based website called eePro. eePro allows you to set up an individual profile, connect to groups focused on a certain topic (including a Guidelines for Excellence in Environmental Education group), and more. You can even complete an online version of Handout #7.

Final Thoughts, Questions, and Workshop Evaluation — 20 minutes

Materials:

- ✓ Handout #8: Workshop Evaluation

Handout #1

Summary of the *Professional Development of Environmental Educators*

1. Environmental Literacy: Educators must be competent in the skills and understandings outlined in *Excellence in Environmental Education-Guidelines for Learning (K–12)*.

- 1.1 Questioning, analysis, and interpretation skills
- 1.2 Environmental processes and systems
- 1.3 Skills for understanding and addressing environmental issues
- 1.4 Personal and civic responsibility

2. Foundations of environmental education: Educators must have a basic understanding of the goals, theory, practice, and history of the field of environmental education.

- 2.1 Fundamental characteristics and goals of environmental education
- 2.2 How environmental education is implemented
- 2.3 The evolution of the field

3. Professional responsibilities of the environmental educator: Educators must understand and accept the responsibilities associated with practicing environmental education.

- 3.1 Exemplary environmental education practice
- 3.2 Emphasis on education, not advocacy
- 3.3 Ongoing learning and professional development

4. Planning and implementing environmental education: Educators must combine the fundamentals of high-quality education with the unique features of environmental education to design and implement effective instruction.

- 4.1 Knowledge of learners
- 4.2 Knowledge of instructional methodologies
- 4.3 Planning for instruction
- 4.4 Knowledge of environmental education materials and resources
- 4.5 Technologies that assist learning
- 4.6 Settings for instruction
- 4.7 Curriculum planning

5. Fostering learning and Promoting Inclusivity: Educators must enable all learners to engage in culturally relevant open inquiry and investigation, especially when considering environmental issues that are controversial and require students to seriously reflect on their own and others' perspectives.

- 5.1 A climate for learning about and exploring the environment
- 5.2 An inclusive and collaborative learning environment
- 5.3 Flexible and responsive instruction

6. Assessment and evaluation: Environmental educators must possess the knowledge, abilities, and commitment to make assessment and evaluation integral to instruction and programs.

- 6.1 Learners outcomes
- 6.2 Assessment that is part of instruction
- 6.3 Improving instruction
- 6.4 Evaluating programs

Handout #2

Where Is the Environmental Literacy?

Directions: There are nine learning objectives. Print out the sheet of learning objectives and cut them into strips (one learning objective for each strip of paper). There are four component parts of environmental literacy. Print them out and cut them into four strips. Create two envelopes for each group. Place the nine learning objectives in one envelope and the four environmental literacy components in the second envelope. Ask participants to match the individual learning objectives to the appropriate environmental literacy element.

Learning Objectives (Envelope #1)

Students will describe and give examples of producer-consumer, predator-prey, and parasite-host relationships.

Students will understand that uneven distribution of resources influences their use and perceived value.

Students are able to evaluate the consequences of specific environmental changes, conditions, and issues for human and ecological systems.

Students will consider their personal environmental impact when making daily decisions.

Students will take initiative to solve a local environmental issue at their school or in their community

Students will be able to locate and collect information about the environment and environmental topics.

Students are able to design a simple investigation.

Students know how to design investigations to answer specific questions about the environment.

Students will evaluate whether personal involvement in particular actions is warranted, considering factors such as their own values, skills, resources, and commitment.

Environmental Literacy (Envelope #2)

Strand 1: Questioning, Analysis, and Interpretation Skills
Environmental literacy depends on learners' ability 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.

Strand 2: Environmental Processes and Systems
Environmental literacy is dependent on an understanding of the processes and systems that comprise the environment, including human social systems and influences. Students develop an understanding of how changes in one system (hydrosphere, atmosphere, geosphere, and biosphere) results in changes in another. They develop an understanding of how human activities affect environmental quality and long-term sustainability at local, tribal, national, and global levels. These understandings are based on knowledge synthesized from across traditional disciplines. The guidelines in this section are grouped in three sub-categories:
2.1—Earth's physical and living systems
2.2—Humans and their societies
2.3—Environment and society

Strand 3: Skills for Understanding and Addressing Environmental Issues
Skills and knowledge are refined and applied in the context of environmental issues at varying scales. Environmental literacy includes the abilities to define, learn about, evaluate, and act on environmental issues. Students investigate environmental issues; consider evidence and differing viewpoints; and evaluate proposed action plans, including likely effectiveness in specific environmental, cultural, social, and economic contexts. They analyze the intended and unintended consequences of their own actions and actions taken by other individuals and groups, including implications for long-term environmental, social, and economic sustainability. In this section, the guidelines are grouped in two sub-categories:
3.1—Skills for analyzing and investigating environmental issues
3.2—Decision-making and citizenship skills

Strand 4: Personal and Civic Responsibility
Environmentally literate community members are 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.

Where Is the Environmental Literacy? Answer Sheet

1. Students will describe and give examples of producer-consumer, predator-prey, and parasite-host relationships. [Answer: Strand 2]
2. Students will understand that uneven distribution of resources influences their use and perceived value. [Answer: Strand 2]
3. Students are able to evaluate the consequences of specific environmental changes, conditions, and issues for human and ecological systems. [Answer: Strand 3]
4. Students will consider their personal environmental impact when making daily decisions. [Answer: Strand 4]
5. Students will take initiative to solve a local environmental at their school or in their community [Answer: Strand 4]
6. Students will be able to locate and collect information about the environment and environmental topics. [Answer: Strand 1]
7. Students are able to design a simple investigation. [Answer: Strand 1]
8. Students know how to design investigations to answer specific questions about the environment. [Answer: Strand 1]
9. Students will evaluate whether personal involvement in particular actions is warranted, considering factors such as their own values, skills, resources, and commitment. [Answer: Strand 3]

Handout #3

Environmental Education Timeline

The English Parliament passes an act forbidding the throwing of filth and garbage into ditches, rivers, and waters

Benjamin Franklin and neighbors petition Pennsylvania Assembly to stop waste dumping and remove tanneries from Philadelphia's commercial district

William Bartram, (1739–1823). American naturalist sets out on a five-year journey through the US Southeast to describe wildlife and wilderness from Florida to the Mississippi

World human population reaches one billion

Establishment of the US Department of Interior

Henry David Thoreau publishes *Walden; or, Life in the Woods*

Arbor Day was founded by J. Sterling Morton of Nebraska City, Nebraska

Wilbur Jackman writes *Nature Study for the Common Schools,* defining the nature study movement

Sierra Club started by John Muir

The National Audubon Society is founded

President Theodore Roosevelt places approximately 230,000,000 acres under public protection through the establishment of National Forests, Reserves, and Preserves

The American Nature Study Society is established with Liberty Hyde Bailey as its first president. Subsequent presidents include such notable authors and educators as Anna Botsford Comstock, Edwin Way Teale, and Roger Tory Peterson.

US Congress and President Woodrow Wilson create the National Park Service

World human population reached two billion

The progressive education movement led by John Dewey promotes a more student-centered and holistic approach

Economic depression makes recycling a necessity

Conservation education movement begun supported by state and federal natural resource agencies as well as many nongovernment organizations.

The National Education Association assumes a leadership role for conservation education in the schools

Wisconsin becomes the first state to enact a state statute requiring preservice teachers to have ". . . adequate preparation in the conservation of natural resources."

The University of Wisconsin at Stevens Point offers a degree in conservation education

Thomas Pritchard, deputy director of the Nature Conservancy in Wales, uses the term "environmental education" at a meeting in Paris of the International Union for the Conservation of Nature. This is perhaps the first public professional use of the term.

Aldo Leopold publishes *A Sand County Almanac*

The Nature Conservancy is founded

The Conservation Education Association is formed to support the many educators working in the field of conservation education

The Association of Interpretative Naturalists is formed

World population reaches three billion

Rachel Carson's book *Silent Spring,* about growing concerns of human interactions with the environment, is published

Congress passes the Clean Air Act

Congress passes the Water Quality Act and Solid Waste Disposal Act

The Apollo 8 pictures of "earthrise" released

The Cuyahoga River fire captures national attention

Congress passes the National Environmental Policy Act

In the inaugural issue of the *Journal of Environmental Education*, William Stapp enumerates the societal necessity for EE and identified objectives of the nascent field

First Earth Day

US Congress passes the National Environmental Education Act of 1970

The National Association for Environmental Education (now the North American Association for Environmental Education, NAAEE) is founded

The United Nations Conference on the Human Environment in Stockholm, Sweden, calls for the provision of environmental education as a means to address environmental issues worldwide

World population reaches four billion

The United Nations Educational, Scientific, and Cultural Organization sponsors a conference in Belgrade, Yugoslavia. The Belgrade Charter outlines the basic structure of environmental education

WREEC (Western Regional Environmental Education Council) and the American Forest Institute (now the American Forest Foundation) develop Project Learning Tree

The United Nations Educational, Scientific, and Cultural Organization in cooperation with the United Nations Environment Programme holds the Intergovernmental Conference on Environmental Education in Tbilisi, Republic of Georgia. The conference lays out the goals, objectives, and guiding principles of environmental education that many environmental educators still use today.

The National Leadership Conference on Environmental Education is held in Washington, DC. The conference produces the report "From Ought to Action."

Love Canal contamination revealed, and Three Mile Island accident occurs

The World Commission on Environment and Development publishes the Brundtland Report. Also known as "Our Common Future," this report introduced the idea of sustainable development in which environmental protection and economic growth are viewed as interdependent concepts.

World population reaches five billion

WREEC and the Western Association of Fish and Wildlife Agencies develop Project Wild.

US Congress passes the National Environmental Education Act authorizing the Office of Environmental Education in the US Environmental Protection Agency

The Council for Environmental Education and the Watercourse initiate Project WET (Water Education for Teachers). Project WET facilitates and promotes awareness, appreciation, knowledge, and stewardship of water resources in students K–12.

The First National People of Color Environmental Leadership Summit is held in Washington, DC. Summit participants adopt the Principles of Environmental Justice.

The Council of State Governments, Environmental Education Subcommittee, and National Environmental Task Force produces a model Environmental Education Act with the recommendation that state legislatures adopt it

The United Nations conducts the Conference on Environment and Development in Rio de Janeiro, Brazil. Chapter 36 of Agenda 21 focuses on "reorienting education toward sustainable development; increasing public awareness; and promoting training."

The North American Association for Environmental Education initiates the National Project for Excellence in Environmental Education. The project works to create guidelines for environmental education.

The President's Council on Sustainable Development holds the National Forum on Partnerships Supporting Education about the Environment at the Presidio, San Francisco, California. The report, "Education for Sustainability: An Agenda for Action," is produced as a result of this meeting.

The North American Association for Environmental Education coordinates and conducts the National Environmental Education Summit in Burlingame, California

The Public Linkage, Dialogue, and Education Task Force of the President's Council on Sustainable Development publishes the report "From Classroom to Community and Beyond: Educating for a Sustainable Future"

The North American Association for Environmental Education produces, with support from EETAP, "Environmental Literacy in the United States: What Should Be . . . What Is . . . Getting from Here to There"

The United Nations General Assembly passes a resolution declaring 2005–14 as the "Decade of Education for Sustainable Development"

World population reaches six billion

WestED, NAAEE, and EETAP produce "What's Fair Got to Do with It? Diversity Cases from Environmental Educators"

The National Environmental Education and Training Foundation holds the first National Environmental Education Week

Richard Louv's book *Last Child in the Woods* receives national attention, introducing the phrase "nature deficit disorder"

Release of Al Gore's film *An Inconvenient Truth*

"Framework K–12 Science Education" created by the National Research Council emphasizes environmental concepts

World population reaches seven billion

Green Ribbon Schools program launched by the US Department of Education with the Environmental Protection Agency and White House Council on Environmental Quality

Environmental Education Timeline
Answer Sheet

1388 The English Parliament passes an act forbidding the throwing of filth and garbage into ditches, rivers and waters.

1739 Benjamin Franklin and neighbors petition Pennsylvania Assembly to stop waste dumping and remove tanneries from Philadelphia's commercial district.

1773 William Bartram, (1739–1823). American naturalist sets out on a five-year journey through the US Southeast to describe wildlife and wilderness from Florida to the Mississippi

1820 World human population reaches one billion

1849 Establishment of the US Department of Interior

1854 Henry David Thoreau publishes *Walden; or, Life in the Woods*

1872 Arbor Day was founded by J. Sterling Morton of Nebraska City, Nebraska

1891 Wilbur Jackman writes *Nature Study for the Common Schools* defining the nature study movement

1892 Sierra Club started by John Muir

1905 The National Audubon Society is founded

1906 President Theodore Roosevelt places approximately 230,000,000 acres under public protection through the establishment of National Forests, Reserves, and Preserves.

1908 The American Nature Study Society is established with Liberty Hyde Bailey as its first president. Subsequent presidents include such notable authors and educators as Anna Botsford Comstock, Edwin Way Teale, and Roger Tory Peterson.

1916 US Congress and President Woodrow Wilson create the National Park Service

1930 World human population reaches two billion

1930s The progressive education movement led by John Dewey promotes a more student-centered and holistic approach

1930s Economic depression makes recycling a necessity

1930s Conservation education movement begun supported by state and federal natural resource agencies as well as many nongovernment organizations

1935 The National Education Association assumes a leadership role for conservation education in the schools

1935 Wisconsin becomes the first state to enact a state statute requiring preservice teachers to have ". . . adequate preparation in the conservation of natural resources."

1946 The University of Wisconsin at Stevens Point offers a degree in conservation education

1948 Thomas Pritchard, deputy director of the Nature Conservancy in Wales, uses the term "environmental education" at a meeting in Paris of the International Union for the Conservation of Nature. This is perhaps the first public professional use of the term.

1949 Aldo Leopold publishes *A Sand County Almanac*

1951 The Nature Conservancy is founded

1953 The Conservation Education Association is formed to support the many educators working in the field of conservation education

1954 The Association of Interpretative Naturalists is formed

1960 World population reaches three billion

1962 Rachel Carson's book *Silent Spring*, about growing concerns of human interactions with the environment, is published

1963 Congress passes the Clean Air Act

1965 Congress passes the Water Quality Act and Solid Waste Disposal Act

1968 The Apollo 8 pictures of "earthrise" released

1969 The Cuyahoga River Fire captures national attention

1969 Congress passes the National Environmental Policy Act

1969 In the inaugural issue of the *Journal of Environmental Education*, William Stapp enumerates the societal necessity for EE and identified objectives of the nascent field

1970 First Earth Day

1970 US Congress passes the National Environmental Education Act of 1970

1971 The National Association for Environmental Education (now the North American Association for Environmental Education, NAAEE) is founded.

1972 The United Nations Conference on the Human Environment in Stockholm, Sweden calls for the provision of environmental education as a means to address environmental issues worldwide

1974 World population reaches four billion

1975 The United Nations Educational, Scientific, and Cultural Organization sponsors a conference in Belgrade, Yugoslavia. The Belgrade Charter outlines the basic structure of environmental education.

1976 WREEC and the American Forest Institute (now the American Forest Foundation) develop Project Learning Tree

1977 The United Nations Educational, Scientific, and Cultural Organization in cooperation with the United Nations Environment Programme holds the Intergovernmental Conference on Environmental Education in Tbilisi, Republic of Georgia. The conference lays out the goals, objectives, and guiding principles of environmental education that many environmental educators still use today.

1978 The National Leadership Conference on Environmental Education is held in Washington, DC. The conference produces the report "From Ought to Action."

1978 Love Canal contamination revealed, and Three Mile Island accident

1987 The World Commission on Environment and Development publishes the Brundtland Report. Also known as "Our Common Future," this report introduced the idea of sustainable development in which environmental protection and economic growth are viewed as interdependent concepts.

1987 World population reaches five billion

1983 WREEC and the Western Association of Fish and Wildlife Agencies develop Project Wild

1990 US Congress passes the National Environmental Education Act authorizing the Office of Environmental Education in the US Environmental Protection Agency

1991 The Council for Environmental Education and the Watercourse initiate Project WET (Water Education for Teachers). Project WET facilitates and promotes awareness, appreciation, knowledge, and stewardship of water resources in students K–12.

1991 The First National People of Color Environmental Leadership Summit is held in Washington, DC. Summit participants adopt the Principles of Environmental Justice.

1992 The Council of State Governments, Environmental Education Subcommittee, and National Environmental Task Force produces a model Environmental Education Act with the recommendation that state legislatures adopt it.

1992 The United Nations conducts the Conference on Environment and Development in Rio de Janeiro, Brazil. Chapter 36 of Agenda 21 focuses on "reorienting education towards sustainable development; increasing public awareness; and promoting training."

1993 The North American Association for Environmental Education initiates the National Project for Excellence in Environmental Education. The project works to create guidelines for environmental education.

1994 The President's Council on Sustainable Development holds the National Forum on Partnerships Supporting Education about the Environment, at the Presidio, San Francisco, California. The report, "Education for Sustainability: An Agenda for Action," is produced as a result of this meeting.

1996 The North American Association for Environmental Education coordinates and conducts the National Environmental Education Summit in Burlingame, California.

1997 The Public Linkage, Dialogue, and Education Task Force of the President's Council on Sustainable Development publishes the report "From Classroom to Community and Beyond: Educating for a Sustainable Future"

1998 The North American Association for Environmental Education produces, with support from EETAP, "Environmental Literacy in the United States: What Should Be . . . What Is . . . Getting from Here to There"

1998 The United Nations General Assembly passes a resolution declaring 2005–14 as the "Decade of Education for Sustainable Development"

1999 World population reaches six billion

2004 WestED, NAAEE, and EETAP produce "What's Fair Got to Do with It: Diversity Cases from Environmental Educators"

2005 The National Environmental Education and Training Foundation holds the first National Environmental Education Week

2005 Richard Louv's book *Last Child in the Woods* receives national attention, introducing the phrase "nature deficit disorder"

2006 Release of Al Gore's film *An Inconvenient Truth*

2011 "Framework K–12 Science Education" created by the National Research Council emphasizes environmental concepts

2011 World population reaches seven billion

2011 Green Ribbon Schools program launched by the US Department of Education with the Environmental Protection Agency and White House Council on Environmental Quality

Handout #4

Scenario: Dos and Don'ts for a Civics Teacher

A public middle school civics teacher in a politically polarized community is preparing to teach a unit about political parties during an election year. The teacher wants to include a discussion of public policy stands on controversial issues such as abortion, immigration, and the death penalty. This teacher will need to discuss with students these current issues and how different candidates approach those issues.

If you were giving some guidance to civics teachers, what would be on your "dos" and "don'ts" list for high-quality instruction?

Handout #5

Two Hats, by John Hug

It would appear that environmental educators have a bad case of the "two hats" problem. We have come by the problem naturally and, therefore, we have paid little attention to it.

The problem is simply that industry, utilities, labor, business, media, and other segments of the population and the general public have consistently recognized only one hat when talking about environmentalists and environmental educators. It is not uncommon for dedicated environmental educators to be summarily dismissed as troublemakers—environmentalists. This one-hat view is easily explained because environmental educators are almost always environmentalists. Perhaps definitions will help clarify the problem.

Any world citizen who advocates with greater or lesser action that wrongs against our environment must be stopped is an environmentalist. Perhaps the negative reputation environmentalists have stems from the dramatic and radical actions of a few.

An environmental educator, on the other hand, is any world citizen who uses information and educational processes to help people analyze the merits of the many and varied points of view usually present on a given environmental issue. The environmental educator is not the "mediator," "trade-off specialist" or "negotiator," but a developer of skills and an information analyst who prepares the people (from any segment of the population) who will participate in environmental decision making.

Environmental educators, therefore, need to be as "value fair" or "value free" as they can when working in this role. They must scrupulously strive to get all the facts, examine and illuminate all the viewpoints, and keep from letting their own particular position (as an environmentalist) from mixing with their educator role.

My suggestion is simply that environmental educators make an effort to clarify the two distinct roles. At every opportunity, we should emphasize the neutral nature of environmental education activity. Strong advocates are all around us, each using the techniques of persuasion and propaganda to build their constituencies. We must, ourselves, be familiar with all sides, stand firm for each advocate's right to be heard, and provide a rational stage for informed debate.

Environmental educators have the right and the duty to be environmentalists, but the dual roles must adhere to the original premise—to keep each hat on its proper head, while utilizing to the fullest the professional skills of the environmental educators.

Reference

Originally published in Aldrich, James L., A.M. and George, A.A. (Eds.) (1977). The Report of the North American Regional Seminar on Environmental Education for the Real World. Columbus, OH: SMEAC Information Reference Center.

Handout #6

Analyzing Instructional Approaches

Using classroom computers, smart phones, or other electronic devices, research your assigned instructional approach. Write a short (one to two sentences) description and brainstorm an example of how the instructional approach might be used.

Look at Theme Four: Planning and Implementing Environmental Education, focusing in particular on Guideline 4.1: Knowledge of learners, Guideline: 4.5: Technologies that assist learning, and Guideline 4.6: Settings for instruction. Return to the handout and answer the questions.

Once you have completed your analysis, transfer your thinking to flip chart paper. Post your flip chart paper.

Instructional Approach

Brief Description of the Instructional Approach
Example Activity:

Knowledge of Learners: How might you adapt this method for use with an adult audience? Preschoolers? Learners with developmental disabilities?

Technology: What technologies might be used to assist student learning?

Setting for Instruction: Describe any specific concerns or considerations.

Handout #7

Self-Assessment: *Professional Development of Environmental Educators*

Using *Professional Development of Environmental Educators: Guidelines for Excellence* as a set of potential benchmarks, carefully reflect on your competencies as an environmental educator.

Key: L = Lacking / B = Basic / P = Proficient / D = Distinguished

Environmental Literacy	**L**	**B**	**P**	**D**
Questioning, analysis, and interpretation skills				
Environmental processes and systems				
Skills for understanding and addressing environmental issues				
Personal and civic responsibility				
Foundations of Environmental Education	**L**	**B**	**P**	**D**
Fundamental characteristics and goals of environmental education				
How environmental education is implemented				
The evolution of the field				
Professional Responsibilities of the Environmental Educator	**L**	**B**	**P**	**D**
Exemplary environmental education practice				
Emphasis on education, not advocacy				
Ongoing learning and professional development				
Planning and Implementing Environmental Education Programs	**L**	**B**	**P**	**D**
Knowledge of learners				
Knowledge of instructional methodologies				
Planning for instruction				
Knowledge of environmental education materials and resources				
Technologies that assist learning				
Settings for instruction				
Curriculum planning				
Fostering Learning and Promoting Inclusivity	**L**	**B**	**P**	**D**
A climate for learning about and exploring the environment				
An inclusive and collaborative learning environment				
Flexible and responsive instruction				
Assessment and Evaluation	**L**	**B**	**P**	**D**
Learner outcomes				
Assessment that is part of instruction				
Improving instruction				
Evaluating programs				

Self-Assessment Part II

Pulling it All Together

Now that you have completed the first checklist, what do you know? Take a few minutes to tally the results of your self-assessment in the table provided below. This should provide you with an overview of the results of your self-assessment.

Self-Assessment Summary—Starting with Theme 1 on the first checklist, add up the total number of check marks for each of the four columns: Lacking, Basic, Proficient, and Distinguished. Enter the total number in the appropriate column of this chart.

Key: L = Lacking / B = Basic / P = Proficient / D = Distinguished

	L	B	P	D
Theme #1—Environmental Literacy (four guidelines)				
Theme #2—Foundations of Environmental Education (three guidelines)				
Theme #3—Professional Responsibilities of the Environmental Educator (three guidelines)				
Theme #4—Planning and Implementing Environmental Education Programs (seven guidelines)				
Theme #5—Fostering Learning and Promoting Inclusivity (three guidelines)				
Theme #6—Assessment and Evaluation (four guidelines)				

Self-Assessment Part III

Now that you have summarized your self-assessment, what can you say about your strengths and weaknesses? How might this self-assessment relate to your professional development? Start to develop a personal professional development plan.		
Areas of Strength	**Areas in Need of Professional Development**	**Specific Actions to Address Self-Assessment**

naaee
North American Association for Environmental Education

naaee.org

Handout #8

Workshop Evaluation

Thank you for your interest in the National Project for Excellence in Environmental Education! Your responses will be used to improve this, and other programs supported by NAAEE.

What grade do you give this workshop? **A** **B** **C** **D** **F**

Why did you give it that grade?

How strongly do you disagree or agree with the following? *Circle one for each.*

	Strongly Disagree			**Unsure**			**Strongly Agree**	
I will recommend this workshop to colleagues or other professionals.	1	2	3	4	5	6	7	NA
This workshop was much better than other workshops I have participated in.	1	2	3	4	5	6	7	NA
Within the next year, I intend to								
. . . improve my EE efforts by using the *Guidelines*	1	2	3	4	5	6	7	NA
. . . share what I learned with colleagues and other professionals.	1	2	3	4	5	6	7	NA

Describe three ways you can use the *Guidelines* to improve your own or others' EE efforts:

How can this workshop be improved to better meet your EE, professional, or other needs?

What is your current profession? *Check all that apply.*

- ❑ Pre-K–12 teacher
- ❑ Preservice teacher
- ❑ Nonformal educator
- ❑ College or university Instructor
- ❑ Resource developer
- ❑ Program director
- ❑ Conservation or natural resource professional
- ❑ Other _____

Who do or will you teach? *Check all that apply.*

- ❑ Preschool
- ❑ K–2
- ❑ 3–5
- ❑ 6–8
- ❑ 9–12
- ❑ Teachers
- ❑ Preservice teachers
- ❑ Other college or university students
- ❑ Nonformal educators
- ❑ College or university Instructors
- ❑ Program directors
- ❑ Resource developers
- ❑ Conservation or natural resource professionals
- ❑ Families
- ❑ Other _____
- ❑ Not applicable

Number of years you have been an environmental educator: About _____ years

Number of students or participants you typically teach or reach per year: About _____ ❑ NA

The students or participants you primarily work with come from: *Check one.*

❑ Urban ❑ Suburban ❑ Rural ❑ Tribal ❑ Mix of areas

THANK YOU!