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Guidelines for Excellence
Environmental Education Programs

naaee
North American Association
for Environmental Education

For more than five decades, the **North American Association for Environmental Education (NAAEE)** has been a leader in promoting excellence in environmental education throughout North America. With members in over 45 countries and affiliations with more than 55 state, regional, and provincial environmental education organizations, NAAEE's influence stretches across North America and worldwide. Our mission is to use the power of education to advance environmental literacy and civic engagement to create a more equitable and sustainable future. We work with educators, policymakers, and partners throughout the world. NAAEE supports the field with a variety of programs and services, including:

Annual Conference and Research Symposium—NAAEE has convened an annual conference for environmental education professionals since 1972. The conference is the largest national gathering of environmental education professionals in North America. It promotes innovation in the field, networking, new tools and resources, and dissemination of research and effective practices.

Resources and eePRO—Through eePRO, our online professional development hub, NAAEE provides its members and supporters with high-quality professional resources at national and international levels including books, resource guides, essays, peer-reviewed research, best practices, research reviews, job listings, grant opportunities, news across the field, and more.

Professional Development—NAAEE offers unique services in professional development and support. Through online networking and professional learning, training seminars, online learning modules, strategic convening of environmental education leaders, and support of certification programs, NAAEE promotes leadership development and builds the capacity of its members and affiliates.

Policy—NAAEE is a non-partisan organization that plays a leadership role in raising the profile of environmental education at an international level. NAAEE works with partners to advocate for environmental education with agencies, organizations, foundations, and others to increase funding and support for the field.

Inspiring Innovation—NAAEE is committed to bringing new voices, ideas, and innovation to the field and broadening environmental education's reach and impact.

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Introduction

Environmental Education Programs: Guidelines for Excellence comprises a set of recommendations for developing and implementing high quality environmental education programs. These recommendations provide a tool that can be used to ensure a firm foundation for new programs or demonstrate program value and inform improvements. The overall goal of these guidelines is to facilitate a superior educational process leading to environmental quality, social equity, and economic prosperity. This overall goal is shared with the other guidelines produced by the North American Association for Environmental Education's National Project for Excellence in Environmental Education.[1]

The term "program" is used in these guidelines to mean an integrated sequence of planned educational experiences and materials intended to reach a particular set of objectives. Environmental education programs, taken together, are the methods by which an organization's education goals are accomplished. Programs can be small or large and can range from short-term, one-time events to long-term, community capacity-building efforts. Programs take place virtually or in person. Environmental education programs are extremely diverse in their settings and in their target audiences. Community-based groups, service organizations, government agencies, residential centers, nature centers, zoos, aquariums, museums, youth organizations, and schools all may be involved in environmental education program development and implementation. Programs take place in a variety of environments, such as classrooms, laboratories, online, parks, school yards, vacant lots, forests, neighborhoods, school courtyards, business districts, nature centers, and community gardens.

[1] For more information about the National Project for Excellence in Environmental Education, visit
 https://naaee.org/our-work/programs/guidelines-excellence

DID YOU KNOW?

Definitions of Environmental Education, Environmental Literacy, and Education For Sustainable Development

Environmental Education (EE)

... is a process that helps individuals, communities, and organizations learn more about the environment; develop skills to investigate their environment; and make intelligent, informed decisions about how they can help take care of it. It has the power to transform lives and society. It informs and inspires. It motivates action. EE is a key tool in creating healthier and more civically engaged communities.

North American Association for Environmental Education (NAAEE). *About EE and Why it Matters.* n.d. Retrieved from https://naaee.org/about-us/about-ee-and-why-it-matters

An Environmentally Literate Person

...is someone who, both individually and together with others, makes informed decisions concerning the environment; is willing to act on these decisions to improve the well-being of other individuals, societies, and the global environment; and participates in civic life.

Hollweg, K. S., Taylor, J. R., Bybee, R. W., Marcinkowski, T. J., McBeth, W. C., & Zoido, P. *Developing a Framework for Assessing Environmental Literacy*. 2011. Washington, DC: North American Association for Environmental Education. p. 2-3. Retrieved from https://naaee.org/our-work/programs/environmental-literacy-framework.

Education for Sustainable Development (ESD)

Education for Sustainable Development (ESD) empowers learners to take informed decisions and make responsible actions for environmental integrity, economic viability and a just society.

Education for Sustainable Development is a lifelong learning process and an integral part of quality education. It enhances the cognitive, social, and emotional and behavioral dimensions of learning. It is holistic and transformational, and encompasses learning content and outcomes, pedagogy and the learning environment itself.

ESD is recognized as a key enabler of all Sustainable Development Goals and achieves its purpose by transforming society. ESD empowers people of all genders, ages, present and future generations, while respecting cultural diversity.

UNESCO. 2019. *What is Education for Sustainable Development?* Retrieved from https://en.unesco.org/themes/education-sustainable-development/what-is-esd

Environmental Education and Learning

Environmental education aims to develop environmental literacy for all. A continuous process, environmental education is learner-centered, equitable, inclusive, and culturally relevant and responsive, providing all participants with opportunities for minds-on, developmentally appropriate experiences and investigations. Environmental education is a lifelong journey, encouraging learners to develop the skills necessary to understand and forge connections with their immediate surroundings. The awareness, knowledge, and skills needed for this understanding provides a basis for moving out into larger systems and broader issues. Simultaneously, this more sophisticated understanding of interrelationships often leads directly to deeper connections to homes and communities.
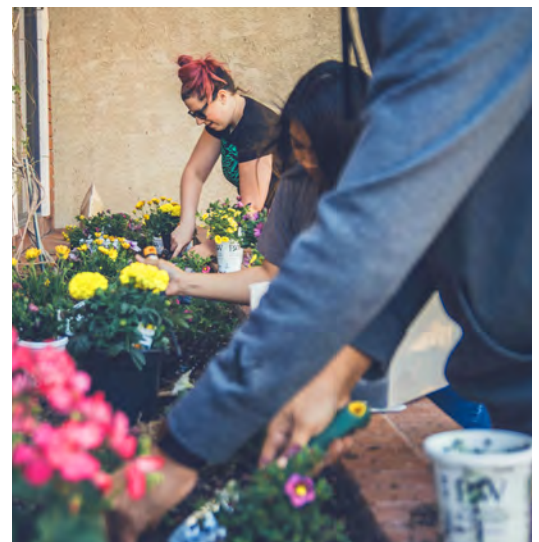
Environmental education recognizes the importance of viewing human interconnectedness within the environment, incorporating an examination of human systems (including economic, cultural, social, and political systems) and natural processes and systems. Environmental education fosters skills and habits people can use to understand and act on environmental concerns throughout their lives. It cultivates the ability and willingness to learn from the past, recognize uncertainty, envision alternative scenarios, and adapt to changing conditions.

Environmental education facilitates the development of an active learning community where learners share ideas and expertise, listen, consider, collaborate, and participate in continued inquiry. Ultimately, knowledge, skills, motivations, and habits of mind translate into being a member of the global community that can better address our common problems and create opportunities. With a focus on building learners' capacity to work individually and cooperatively to improve environmental quality, social equity, and economic prosperity, environmental education supports efforts to address the United Nations Sustainable Development Goals.

DID YOU KNOW?

Sustainable Development Goals

At the core of the 2030 Agenda for Sustainable Development, adopted by world leaders, are 17 Sustainable Development Goals (SDGs) that call on all countries to mobilize efforts to:

...secure a sustainable, peaceful, prosperous, and equitable life on earth for everyone now and in the future. The goals cover global challenges that are crucial for the survival of humanity. They set environmental limits and set critical thresholds for the use of natural resources. The goals recognize that ending poverty must go hand-in-hand with strategies that build economic development. They address a range of social needs including education, health, social protection, and job opportunities while tackling climate change and environmental protection. The SDGs address key systemic barriers to sustainable development such as inequality, unsustainable consumption patterns, weak institutional capacity and environmental degradation.

Environmental education works towards a sustainable future for all where environmental and social responsibility drive individual and institutional choices.

United Nations. *Transforming Our World: The 2030 Agenda for Sustainable Development.* 2015. Retrieved from https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf

<div style="text-align:center">DID YOU KNOW?</div>

Useful Definitions: Conservation Education, Environmental Communications, Experiential Education, Formal Education, Informal Education, Interpretation, Nonformal Education, and Social Marketing

Environmental education can take place in a variety of settings, from schools, nature centers and zoos to neighborhoods, business districts, universities, and forests. It can be designed to meet the needs of diverse audiences and is often described as serving learners from birth to gray. Across these settings and audiences, different terms are often used to describe environmental education and related practices:

Conservation Education
Conservation Education (CE) helps people of all ages understand and appreciate our country's natural resources—and learn how to conserve those resources for future generations. Through structured educational experiences and activities targeted to varying age groups and populations, conservation education enables people to realize how natural resources and ecosystems affect each other and how resources can be used wisely.

US Forest Service. Conservation Education. n.d. Retrieved from https://www.fs.usda.gov/conservationeducation

Environmental Communications
...activities that convey information in a variety of contexts using a wide array of tools. Journalism, broadcasting, marketing, advertising, and many other fields fall under the umbrella of communications.

Braus, J. *Tools of Engagement: A Toolkit for Engaging People in Conservation.* Washington, DC: National Audubon Society. 2011. Retrieved from https://naaee.org/eepro/resources/tools-engagement-toolkit-engaging-people

Experiential Education
Acquiring knowledge and skills through direct experience. Experiential education is an approach to education that can replace or complement more traditional approaches in which student learning is more passive, such as lectures or reading assignments.

Braus, J. *Tools of Engagement: A Toolkit for Engaging People in Conservation.* Washington, DC: National Audubon Society. 2011. Retrieved from https://naaee.org/eepro/resources/tools-engagement-toolkit-engaging-people

Formal Education
Formal education is the hierarchically structured, chronologically graded education system, running from primary school through the university and including general academic studies as well as a variety of specialised programmes and institutions for full-time technical and professional training. K–12 and tertiary education from colleges are characterized as formal education.

K–12 Academics. *Formal Education.* 2021. Retrieved from https://www.k12academics.com/Education%20Worldwide/Education%20in%20the%20Philippines/formal-education

Informal Education and Free Choice Education
Informal learning refers to learning that occurs away from a structured, formal classroom environment. Informal learning comes in many forms, including viewing videos, self-study, reading articles, participating in forums and chat rooms, performance support, coaching sessions, and games…. Informal learning is a style of learning in which the learner sets their own goals and objectives.

Knowledge Anywhere. *Informal Education.* 2021. Retrieved from https://www.knowledgeanywhere.com/resources/article-detail/10-informal-learning-activities-to-boost-employee-engagement

NOTE: Informal education is frequently used interchangeably with nonformal education, especially within the science education community.

Interpretation

...a purposeful approach to communication that facilitates meaningful, relevant, and inclusive experiences that deepen understanding, broaden perspectives, and inspire engagement with the world around us.

National Association for Interpretation. *What is interpretation?* n.d. Retrieved from https://www.interpnet.com/NAI/interp/About/About_Interpretation/nai/_About/what_is_interp.aspx?hkey=53b0bfb4-74a6-4cfc-8379-1d55847c2cb9

Nonformal Education

Education that is institutionalized, intentional, and planned by an education provider. The defining characteristic of nonformal education is that it is an addition, alternative, and/or a complement to formal education within the process of the lifelong learning of individuals. It is often provided to guarantee the right of access to education for all. It caters to people of all ages but does not necessarily apply a continuous pathway-structure; it may be short in duration and/or low intensity.

International Standard Classification of Education. *Non-formal Education*. 2011. Retrieved from http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf

Social Marketing

Social marketing is an approach used to develop activities aimed at changing or maintaining people's behaviour for the benefit of individuals and society as a whole. Combining ideas from commercial marketing and the social sciences, social marketing is a proven tool for influencing behaviour in a sustainable and cost-effective way.

The National Social Marketing Centre. *What is Social Marketing?* n.d. Retrieved from https://www.thensmc.com/content/what-social-marketing-1

Essential Underpinnings of Environmental Education

Environmental education builds from a core of key principles that inform its approach to education:

Human Well-Being: Human well-being is inextricably bound with environmental quality. Humans are a part of the natural order. Humans, and the systems they create—societies, political systems, economies, religions, cultures, technologies—impact the total environment and are impacted by the environment. Since humans are a part of nature rather than outside it, they are challenged to recognize the ramifications of their interdependence with Earth systems.

Importance of Where One Lives: Beginning close to home, EE can help learners explore, and understand their immediate surroundings. And it can help them appreciate nature around them wherever they live. The sensitivity, knowledge, and skills needed for this local connection to both the natural and built environments provide a base for moving into larger systems, broader issues, and an expanding understanding of connections and consequences.

Integration and Infusion: Disciplines from the natural sciences, social sciences, and the humanities are interconnected through the environment and environmental issues. Environmental education offers opportunities to integrate disciplinary learning, fostering a deeper understanding of concepts and skills. EE works best when infused across the curriculum rather than treated as a separate or isolated experience.

Justice, Equity, Diversity, and Inclusion: Environmental education instruction is welcoming and respectful to all learners and embraces the principles of fairness and justice. EE is designed to employ and engage people with different backgrounds, experiences, abilities, and perspectives through culturally relevant and responsive instruction. EE actively works to create equitable learning opportunities and promotes the dignity and worth of people of all races, ethnicities, religions, genders, sexual orientations, gender identities, abilities, incomes, language groups, marital statuses, ages, geographic locations, and philosophies.

Lifelong Learning: Critical and creative thinking, decision making, communication, and collaborative learning, are emphasized. Development and ongoing use of a broad range of skills and practices are essential for active and meaningful learning, both in school and over a lifetime.

Roots in the Real World: Learners develop knowledge and skills through direct experience with their community, the environment, current environmental issues, and society. Investigation, analysis, and problem solving are essential activities and are most effective when relevant to learners' lives and rooted in their experiences.

Sustainable Future: Supporting the United Nations Sustainable Development Goals, learning reflects on the past, examines the present, and is oriented to the future. Learning focuses on environmental, social, and economic responsibility as drivers of individual, collective, and institutional choices.

Systems and Systems Thinking: Systems thinking helps make sense of a large and complex world. A system is made up of parts. Each part can be understood separately. The whole, however, is understood only by examining the relationships and interactions among the parts. Earth is a complex system of interacting physical, chemical, and biological processes. Organizations, communities of animals and plants, and families can all be understood as systems. And systems can be nested within other systems.

DID YOU KNOW?

Useful Definitions: Accessibility, Diversity, Environmental Justice, Equity, and Inclusion

Accessibility

...when a person with a disability is afforded the opportunity to acquire the same information, engage in the same interactions, and enjoy the same services as a person without a disability in an equally integrated and equally effective manner, with substantially equivalent ease of use.

US Department of Education, Office of Civil Rights. n.d. Retrieved from https://www.ace-ed.org/understanding-the-definition-of-accessibility/

Diversity

... is the representation of all our varied identities and differences (race, ethnicity, gender, disability, sexual orientation, gender identity, national origin, tribe, caste, socio-economic status, thinking and communication styles, etc.) collectively and as individuals.

Ford Foundation. *Our Values.* 2020. Retrieved from https://www.fordfoundation.org/about/people/diversity-equity-andinclusion/#:~:text=Equity%20seeks%20to%20ensure%20fair,and%20participation%20of%20all%20people

Environmental Justice

... refers to cultural norms and values, rules, regulations, behaviors, policies, and decisions to support sustainable communities, where all people can interact with confidence that their environment is safe, nurturing, and productive.

Bonta, M., T. DeFalco, & C. Taylor Smith. *Diversity and the Conservation Movement.* 2015. Washington, DC: National Audubon Society. Retrieved from https://cdn.naaee.org/sites/default/files/eepro/resource/files/diversity_module.9.22.15.pdf

Equity

The guarantee of fair treatment, access, opportunity, and advancement while at the same time striving to identify and eliminate barriers that have prevented the full participation of some groups. The principle of equity acknowledges that there are historically underserved and underrepresented populations, and that fairness regarding these unbalanced conditions is needed to assist equality in the provision of effective opportunities to all groups.

US Climate Action Network (USCAN). *Justice, Equity, and Inclusion.* 2020. Retrieved from https://www.usclimatenetwork.org/justice_equity_diversity_and_inclusion

Inclusion

The act of creating environments in which any individual or group can be and feel welcomed, respected, supported, and valued to fully participate and bring their full, authentic selves to work. An inclusive and welcoming climate embraces differences and offers respect in the words/actions/thoughts of all people.

US Climate Action Network (USCAN). *Justice, Equity, and Inclusion.* 2020. Retrieved from https://www.usclimatenetwork.org/justice_equity_diversity_and_inclusion

Additional Resource:

Justice, Equity, Diversity, and Inclusion Resources for Environmental Education Professionals and Students
This site includes a list of resources, including some developed by NAAEE, designed to help educators and learners of all ages center equity in their work in the field of environmental education. NAAEE encourages participation in the Equity and Inclusion discussion forum in eePRO (eepro.org).

For more information, visit: https://naaee.org/our-work/programs/justice-equity-diversity-and-inclusion

How were these Guidelines developed?

Environmental Education Programs: Guidelines for Excellence (2022) constitutes a major revision of *Nonformal Environmental Education: Guidelines for Excellence* (2009). The revisions reflect changes within environmental education, particularly related to research on environmental literacy, advances in educational technology, support for equity and inclusion, and innovations in program evaluation.

To ensure that these Guidelines for Excellence reflect a widely shared understanding of environmental education, a team of environmental education professionals from a variety of backgrounds and organizational affiliations developed the revised guidelines. This team took on the challenge of turning ideas about quality into tangible recommendations and examples. In addition, drafts of these guidelines were circulated widely to practitioners and scholars in the field (for example, teachers, educational administrators, community leaders, environmental scientists, and curriculum developers), and their comments were incorporated into successive revisions of the document. As such, hundreds of practitioners have participated in the writing of these guidelines.

How to use the Guidelines

Environmental Education Programs: Guidelines for Excellence points out six key characteristics of high-quality environmental education programs. For each key characteristic, guidelines are listed for program developers or educators to consider. Each guideline is accompanied by several indicators, or attributes you might look for to help gauge whether the characteristic is embodied in the program you are reviewing or developing. *Environmental Education Programs: Guidelines for Excellence* provides direction while allowing flexibility in shaping content, technique, and other aspects of program delivery. These guidelines offer educators, administrators, and program developers a way of assessing the relative merit of different programs, a standard to aim for in developing new programs, and a set of ideas about what a well-rounded environmental education program might be like.

It is not reasonable to expect that every environmental education program will follow all the guidelines. For example, a program might not have a structured evaluation plan in place. This does not necessarily mean that the program is fatally flawed. In such cases *Environmental Education Programs: Guidelines for Excellence* can point out areas for growth. Similarly, it is likely that specific indicators for one or more of the key characteristics may not apply to a particular program. Users of these guidelines need to determine which key characteristics, guidelines, and indicators are relevant in their situation.

No set of guidelines could contain every possible detail of what constitutes a quality program. However, *Environmental Education Programs: Guidelines for Excellence* provides a foundation on which to build programs that work. As a tool to inform decision-making, these guidelines can contribute to more effective environmental education.

RESOURCES YOU CAN USE

Useful Program Development Resources

Whether you are working on a field day for young children or developing an ongoing, community-wide engagement program, following a planning design process will help you be as efficient and effective as possible. While this set of Guidelines for Excellence describes a program planning process specifically designed for environmental education, many other great resources are also available.

By exploring a variety of strategies, you can select the ones that best fit the goals, needs, and resources for your efforts. Here are a few recommended tools created for environmental education and conservation efforts.

Community Engagement: Guidelines for Excellence
This set of guidelines focuses on community wellness and is designed to help environmental educators create inclusive environments that support effective partnerships and collaborations. The guidelines were developed using critique and consensus. The review process involved gathering input from hundreds of educators, including focused feedback from content experts representing a variety of fields (e.g., diversity, community partnership building), a 16-person national advisory team, a wide range of stakeholders, and a professional learning community (PLC).

These guidelines are organized around five key characteristics that provide a high-level framework for working with communities. EE that successfully engages communities is community centered, based on sound environmental education practices, collaborative and inclusive, oriented toward capacity building and civic action, and based on a long-term investment in change. A 25-item toolkit augments the guidelines; toolkit resources help users dive more deeply into aspects of environmental education and community engagement that may be unfamiliar to some practitioners.

Simmons, B. et.al. *Community Engagement: Guidelines for Excellence*. Washington, DC: NAAEE. 2017. Retrieved from https://naaee.org/eepro/resources/community-engagement-guidelines

Designing Successful Conservation Education and Outreach
A chapter in this book details the planning-implementation-evaluation (PIE) approach to program design. The process focuses on planning for conservation education and outreach, including steps for developing goals, identifying audience(s), choosing media, and designing evaluation strategies.

Jacobson, Susan K., McDuff, Mallory D., & Monroe, Martha C. Designing Successful Conservation Education and Outreach in *Conservation Education and Outreach Techniques*. Second Edition. Oxford University Press. 2015.

RESOURCES YOU CAN USE

Some Useful Program Development Resources

Tools for Engagement
This comprehensive toolkit, developed by a collaboration of organizations, is organized into twenty steps for engaging people in conservation work. Emphasizing the need for flexibility and adaptability, the authors provide a wide variety of examples, tips, worksheets, and links to resources.

Braus, Judy, Ed. *Tools for Engagement: A Toolkit for Engaging People in Conservation.* New York, NY: National Audubon Society. 2011. Retrieved from https://naaee.org/sites/default/files/eepro/resource/files/toolsofengagement.pdf

National Extension Water Outreach Education
This website features extensive resources, research, and practical tools, including "Water Outreach Education," which encourages the use of best education practices to plan an effective natural resources outreach strategy, and "Changing Public Behavior," which offers tools to increase involvement using target audience information.

University of Wisconsin–Madison. National Extension Water Outreach. n.d. Retrieved from http://fyi.uwex.edu/wateroutreach/

Open Standards for the Practice of Conservation, Version 4.0
The Conservation Standards (CS) are a widely adopted set of principles and practices that provide guidance for conservation project design, management, and monitoring. The framework details five iterative steps: assess, plan, implement, analyze and adapt, and share. The framework, developed by the Conservation Measures Partnership, embraces both adaptive management and evidence-based conservation.

Conservation Measures Partnership. *Open Standards for the Practice of Conservation (Version 4.0)*. 2020. Retrieved from https://conservationstandards.org/wp-content/uploads/sites/3/2020/10/CMP-Open-Standards-for-the-Practice-of-Conservation-v4.0.pdf

Standards of Excellence for Urban National Wildlife Refuges
This online framework for collaboration and inclusive community engagement was created in 2014 by the US Fish and Wildlife Service and the National Wildlife Refuge System. It features a variety of tools and resources for building a robust conservation constituency in urban populations.

US Fish & Wildlife Service. Urban Wildlife Conservation Program. *Standards of Excellence for Urban National Wildlife Refuges*. 2019. Retrieved from http://www.fws.gov/urban/soe.php

About Informational Boxes
Boxes help illustrate the guidelines, tell the stories of programs, and provide additional information, including definitions, explanations, references, and links to websites. There are three types of informational boxes:

Background information, definitions, and explanations

Stories from the field (e.g., short case studies)

Websites, publications, and tips you can use

DID YOU KNOW?

GUIDELINES IN PRACTICE

RESOURCES YOU CAN USE

Environmental Education Programs: Guidelines for Excellence
Summary

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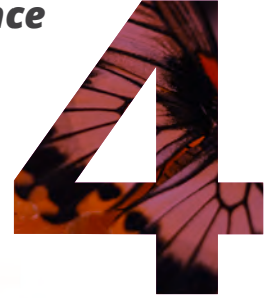
Prepare
- Gather Information, Assess Priorites and Resources

Plan
- Design Instruction
- Design Program Strucure and Delivery
- Develop Evaluation Plan

Learn, Adjust, Celebrate
- Analyze, Adapt, and Share

Implement
- Deliver Program and Implement

Prepare

Key Characteristic #1

Gather Information and Assess Priorities and Resources

Conduct a self-assessment, including how the program supports the organization's vision, mission, and strategic priorities; addresses environmental, educational, and community needs; creates culturally relevant and responsive learning environments; and satisfies marketplace demands. Use existing program evaluation results and, as appropriate, conduct further program assessments in cooperation with stakeholders and other community partners.

1.1 Self-assessment
1.2 Organizational priorities, capacity, and resources
1.3 Environmental, educational, and community needs
1.4 Audience needs
1.5 Partnerships

Plan

Key Characteristic #2

Design Instruction

Design instructional content and strategies with well-articulated goals and objectives that lead to environmental literacy, meet the needs of audience members, and address community concerns and aspirations. Build the program on a foundation of quality instructional materials and well-prepared staff. Purposefully co-design instruction in collaboration with stakeholders and other community partners.

2.1 Goals and objectives
2.2 Instructional materials and techniques
2.3 Instructional staff

Key Characteristic #3

Design Program Structure and Delivery

Develop a program format and delivery system that supports instructional goals and objectives and meets audience needs. Build program planning on a foundation of thorough preparation, including budget planning, facilities management, and concern for health and safety. Create a supportive, safe, culturally relevant, culturally responsive, accessible, and welcoming learning environment. Coordinate instructional delivery in collaboration with stakeholders and other community partners.

3.1 Format and delivery
3.2 Facilities
3.3 Health and safety
3.4 Communication

Key Characteristic #4

Develop an Evaluation Plan

Develop an evaluation plan, including guiding questions for each phase of the program development cycle. Design data collection methods, documenting relevant program inputs, outputs, outcomes, and impacts. Build in ways to monitor and use evaluation results throughout program implementation.

4.1 Evaluation plan
4.2 Evaluation strategies, techniques, and tools
4.3 Pilot test the program and revise

Implement

Key Characteristic #5

Deliver Program and Implement Evaluation Plan

Deliver educational experiences that meet stated goals and objectives, including the development of environmental literacy. Provide a supportive, safe, culturally relevant, accessible, responsive, and welcoming learning environment. Implement the evaluation plan.

5.1 Instructional content
5.2 Learning climate
5.3 Flexible and responsive instruction
5.4 Inclusion and collaboration
5.5 Instructional methods
5.6 Implement evaluation

Learn, Adjust, Celebrate

Key Characteristic #6

Analyze, Adapt, and Share

Take time to document, analyze, learn, and reflect. Examine evaluation results and consider what they mean in terms of how the program can be improved and whether it should be continued. If the program is ongoing, adjust it as necessary, and plan for its long-term sustainability. Celebrate successes, including partnerships, and share the results so others can learn from program efforts.

6.1 Evaluation results
6.2 Plan for long-term sustainability
6.3 Share learnings

GUIDELINES IN PRACTICE

Photo: © Land and Water Program

This Is Indigenous Land: An Indigenous Land-Based Approach To Climate Change Education

This is Indigenous Land is an urban and rural Indigenous land-based climate change education camp. Through a four-day camp experience, participants learn about Indigenous people's enduring relationships with land and place, explore their roles in protecting land and water, and connect with other young people committed to climate action. The camp brings together Indigenous facilitators with a team of post-secondary students and youth for an immersive experience in Indigenous land-based climate change education.

This camp is the foundational experience for the larger, year-long Land and Water Program coordinated by the University of Manitoba's Community Engaged Learning department. The Land and Water Program is an Indigenous land-based climate change education program that brings together a high school cohort with a post-secondary team. The post-secondary team is comprised of students from the University of Manitoba, as well as Indigenous youth who are not currently enrolled at the University of Manitoba.

Participation in *This is Indigenous Land* camp is a critical opportunity for the post-secondary team to come together and receive training to help facilitate the overall year-long program. After this training, and with support from the Land and Water Program coordinator, the postsecondary team helps to lead a year-long program that includes monthly land-based field trips that address different themes. Themes have included land-based education in the city, land-based living in the North, nourishing our bodies and spirits on the land, building community around Indigenous concerns for the environment, and health and wellness on the land.

Initially, the Land and Water Program was designed as a peer mentor program that employed experiential approaches to introduce post-secondary and high school students to climate change vocations. However, the Indigenous land-based approach had a more significant impact on the participants' overall engagement and learning by (1) seeing "the land as our primary text and teacher," (2) centering relationship and connection to the land and each other, and (3) recognizing that everyone has something to offer (the high school students, youth who are not engaged in formal post-secondary programs, and others).

The program helps participants recognize the serious and pressing nature of the problem (climate change and its impacts on Indigenous land, culture, and spirituality) and understand the importance of collective action for climate change prevention and interventions. The Land and Water Program aims to build a community of young Indigenous climate activists and land defenders.

GUIDELINES IN PRACTICE

This Is Indigenous Land: An Indigenous Land-Based Approach To Climate Change Education

Approach

During the university's fall break, the Land and Water post-secondary team participates in *This is Indigenous Land* camp. The principles that informed the camp design include the following:

• **Relationality:** Exploring what we love about the land—Help learners foster a conscious relationship with land

• **Making climate change matter:** Understanding what we stand to lose—Link climate change to what learners already care about

• **Relational accountability:** Protecting what we love—Empower learners to intervene

• **Confronting loss through ceremony:** Ecological grief and Indigenous practice—Help learners confront and grieve climate change related losses through ceremony

During the university's fall break, the Land and Water post-secondary team participates in *This is Indigenous Land* camp. The post-secondary team is comprised of predominantly Indigenous university students and young adults, most of whom grew up or currently live in the city, and who are motivated by an interest in land-based experiences, climate change education, and opportunities to access ceremonies, elders, and community activists. The programming is led by group of facilitators, including an Indigenous coordinator, young Indigenous knowledge holders, and two-spirit[1] (2SLGBTQ+)[2] elders. The makeup of the facilitator group honors an Indigenous principle that recognizes that knowledge and knowing come from multiple sources (Hawaiian proverb Ō.N. 203) and aims to challenge gendered perspectives on roles and relationships with land and ceremony.

The first two days of the camp take place in the North End of Winnipeg (an area with a high Indigenous population). During this time, participants return home at the end of each day of programming. The final two days occur at a camp outside of town and include an overnight stay. The mix of urban and rural land-based experiences is important. It is openly and often acknowledged that both locations are Indigenous land, just visibly impacted by settler colonialism and climate change to different degrees.

Photo: © Land and Water Program

Evaluation

The camp leaders use a combination of sharing circles and arts-based activities to reflect, debrief, and evaluate *This is Indigenous Land* camp. During group debriefs, leaders focus on setting up a safe space for participants to share their critical and constructive feedback; practice giving and receiving personal feedback; acknowledge rights and wrongs, hits and misses; and unpack their experiences, including what resonated and what was challenging or uncomfortable.

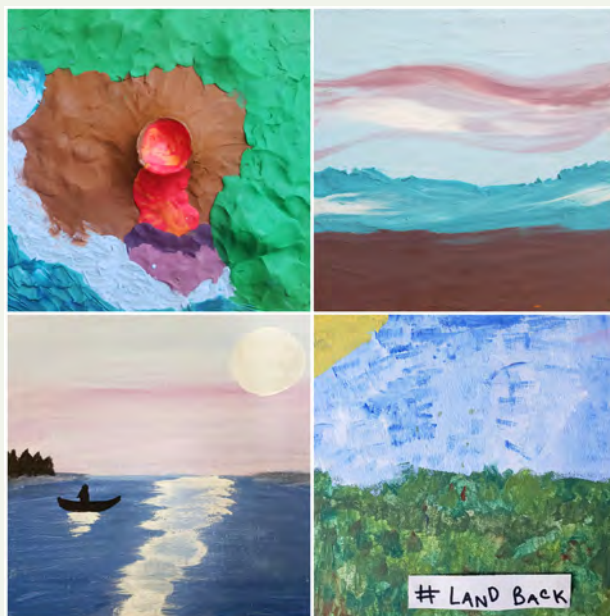[1] Two-spirit is a contemporary term used by North American Indigenous people whose gender and sexual expressions do not fit within the Eurocentric gender binary or heterosexuality. The term is inclusive of Indigenous people who identify on the LGBTQ+ spectrum as well as those who do not use these labels.

[2] See https://www.uwinnipeg.ca/rise/terms.html for more information about the 2SLGBTQ+ acronym.

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This Is Indigenous Land: An Indigenous Land-Based Approach To Climate Change Education

Photo: © Land and Water Program

Outcomes

This is Indigenous Land endeavors to achieve the following outcomes:
- Foster a conscious relationship with land and culture
- Link climate change to what matters: Sacred or special places, ancestral knowledge, traditional foods, and what we love about the land
- Build connections: Connect post-secondary team members, community leaders, elders, land defenders, and climate change activists to the land
- Empower participants to intervene: Emphasize collective actions aimed at system change, land defense, and climate action and bring participants in contact with community activism
- Confront land loss and ecological grief through Indigenous ceremony

Generally, the connection to land, elders, and ceremony were participants' most meaningful experiences. When asked about their biggest takeaway from the program, one Métis participant shared, "It was my first time experiencing smudging and listening to elders speak about indigenous history." This speaks to the overarching goals of the program, which include connecting youth to elders and fostering a deeper relationship with Indigenous culture.

Other feedback from the post-secondary team demonstrated that the camp helped them understand the important role that a land-based approach to climate change education can play in lifelong learning for change. A Cree participant shared, "It empowered me to be more aware of how I can actively partake in my individual holistic learning experience." An Anishinaabe participant added, "This program allowed me to reconnect and understand my role in climate change, changing the ways I view it, and learning what I can do at the individual level."

A non-Indigenous participant highlighted the importance of learning from a diverse team, including the land, other young adults, and elders, and the benefits of sharing solutions and interventions: "Participating in the Land and Water Program has allowed me to experience firsthand how learning from the land and from other people is crucial when approaching solutions for climate change related issues. This program has made me grow in my thinking and knowledge of these issues and is an experience that I appreciate every day."

For further information and to read the full case study, visit: https://thegeep.org/sites/default/files/2020-06/GEEP%20Case%20Study%20This%20is%20Indigenous%20Land.pdf

Adapted with permission from the Global Environmental Education Partnership (GEEP) Ferland, N., J. L'Arrivee, A. McLeod, C. Nolin, and J. Vandal. Case Studies. *This is Indigenous Land: An Indigenous Land-Based Approach to Climate Change Education*. 2019.
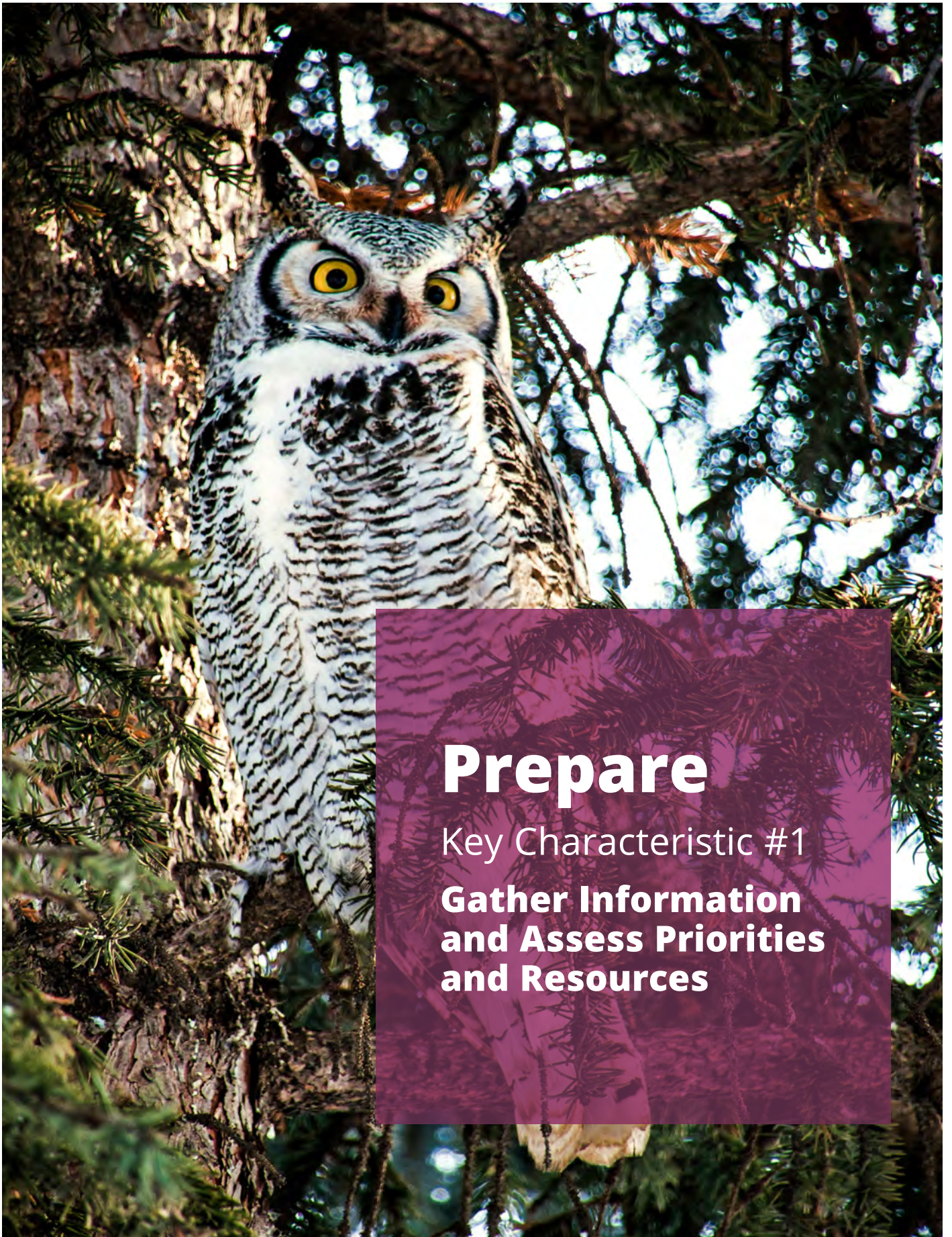
Prepare

Key Characteristic #1

Gather Information and Assess Priorities and Resources

Environmental Education Programs: Guidelines For Excellence
Key Characteristics and Guidelines

Prepare

Key Characteristic #1
Gather Information and Assess Priorities and Resources

Conduct a self-assessment, including how the program supports the organization's vision, mission, and strategic priorities; addresses environmental, educational, and community needs; creates culturally relevant and responsive learning environments; and satisfies marketplace demands. Use existing program evaluation results and, as appropriate, conduct further program assessments in cooperation with stakeholders and other community partners.

1.1 Self-assessment.
Conduct a thorough and honest self-assessment of the status of existing programs, staff, organizational support, and partnerships. Consider current strengths, opportunities, aspirations, and results. Confirm self-assessment findings with existing evaluation results and input from staff, partners, audience members, community members, and other stakeholders. Verify market demands.

Indicators:
- Review the degree to which current programs contribute to the development of environmental literacy and meet established goals and objectives.
- Consider the strengths of current programs and opportunities for growth or change, including analyses of learner outcomes, partnerships and collaborations, evaluation results, fit with the organizational strategic plan, marketplace demand, audience needs, and organizational assets and aspirations.
- Confirm the degree to which current programs create a developmentally appropriate, inclusive, and culturally responsive learning environment.
- Inventory the current programs sponsored by the organization, consider the interrelationships of programs, and compare the goals and objectives. Chart the potentials for overlap, synergy, and gaps.
- Verify that the capacities and resources of the organization (human, financial, facilities and grounds, material resources, and technology) are appropriate to support program development and implementation.
- Consult with community members and other stakeholders, partners and collaborators, and audience members to help determine areas of strength and potential opportunities, how work has impacted the community, and how to meet program goals and objectives effectively.
- Assess the current situation and determine areas of strength and potential opportunities collaboratively with staff, including organizational leadership and administrative, support, and instructional staff.

DID YOU KNOW?

Defining Front-End Evaluation

Front-end evaluation (sometimes referred to as a needs assessment or planning evaluation) is used to guide the development of a program. Front-end evaluation

> ...often involves studying a problem, situation, or issue to find out if a program is needed or how it should be framed. Front-end evaluation also can be used to identify gaps between your audience's current level of knowledge, attitudes, skills, and behavior and the level that is desired. In addition, it can be used to guide the development of new programs by helping to determine the characteristic or needs of an audience, define program goals and objectives, and identify potential stakeholders. As its name suggests, a front-end evaluation usually takes place prior to or at the very early stages of developing a program. Front-end evaluations generally are conducted for or used by those who will be developing the program.

Ernst, J.A., M.C. Monroe, and B. Simmons. *Evaluating Your Environmental Education Programs: A Workbook for Practitioners*. Washington, DC: NAAEE. 2009

1.2 Organizational priorities, capacity, and resources.

Establish how the program supports the organization's vision, mission, and strategic priorities and how it fills an identified need within the organization. Verify access to funding, skills, facilities, properties, and other resources needed over the life of the program.

Indicators:
- Confirm that the program supports the organization's mission, goals, objectives, long-range plan, and any applicable mandates.
- Verify that organizational leadership, including department heads, the board of directors, and advisory councils, endorse the program, recognize how the program supports the organization's mission and long-range plan, and commit to providing resource needs over the life of the program.
- Confirm that staff, including organizational leadership and administrative, support, and instructional staff, can communicate how environmental education in general and the program specifically furthers the organization's mission and long-range plan.
- Ensure that the program's budget is consistent with and fully integrated into the organization's overall budget. Consider program resource needs and how those needs will be met over the life of the program.
- Identify the role that any proposed new program plays in the overall offerings of the organization, including the ability to reach priority audiences, connect with community interests, fill a gap in the market, and support the organization's mission, goals, objectives, long-range plan, and applicable mandates.

DID YOU KNOW?

Strengths, Opportunities, Aspirations, Results (SOAR) Analysis

Conducting a Strengths, Opportunities, Aspirations, Results (SOAR) analysis is one way of framing an in-depth review of a program or organization. The SOAR analysis is based on an appreciative inquiry approach,[1] focusing on assets that build on existing strengths toward a common vision of success. The following, from ASQ Service Quality Division (2019), outlines the SOAR approach:

Description

A strengths, opportunities, aspirations, results (SOAR) analysis is a strategic planning tool that focuses an organization on its current strengths and vision of the future for developing its strategic goals.

When conducting a SOAR analysis, the basic questions to be answered are:
- What are our greatest strengths?
- What are our best opportunities?
- What is our preferred future?
- What are the measurable results that will tell us we've achieved that vision of the future?

Benefits
- Engages representatives from every level of the organization to have shared conversations and input on strategy and strategic planning.
- Resistance to change is minimized and employees are more likely to commit to goals and objectives they helped create.
- Flexible and scalable, so planning and decision making can be adjusted to fit an organization's needs and culture.
- Building on the organization's strengths produces greater results than spending time trying to correct weaknesses.

Relevant Definitions

S = Strengths: What an organization is doing really well, including its assets, capabilities, and greatest accomplishments

O = Opportunities: External circumstances that could improve profits, unmet customer needs, threats, or weaknesses reframed into possibilities

A = Aspirations: What the organization can be, what the organization desires to be known for

R = Results: The tangible, measurable items that will indicate when the goals and aspirations have been achieved

[1]Appreciative Inquiry is an asset-based approach to determining the best way to help make a positive change. Appreciative Inquiry begins by asking, "What works well here?" An asset-based approach then works to build on existing strengths toward a common vision of success. To get started, visit the Appreciative Inquiry Commons at https://appreciativeinquiry.champlain.edu/

ASQ Service Quality Division. *Strengths, Opportunities, Aspirations, Results (SOAR) Analysis.* 2019.Retrieved from https://asqservicequality.org/glossary/strengths-opportunities-aspirations-results-soar-analysis/

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Strengths, Opportunities, Aspirations, Results (SOAR) Analysis

Using a worksheet, such as this SOAR template, can help focus discussions.

SOAR Template

Strengths	Opportunities
What do we excel at? What makes us unique? What do we offer to the marketplace? What are our most valuable assets?	*What do our audience(s) want/need? Are there new audiences we could reach? What are the trends? Are there new markets or gaps in the market?*
Aspirations	**Results**
What should our goals be? What is our vision for the future? What type of program do we want? What do we really care about? Who are we as an organization and who do we want to be?	*How will we know if we have achieved our goals? What are the measures or indicators of success? How will we use our results?*

SWOT Analysis

The SWOT Analysis, a related framework, comes out of the business and marketing communities and focuses on program Strengths (What does the program do well?), Weaknesses (What should be improved?), Opportunities (How is the market changing?), and Threats (What are your competitors doing?). Strengths and Weaknesses are considered internal to the program—factors that can be controlled by the organization. On the other hand, Opportunities and Threats are seen as external or beyond the control of the organization.

SWOT analyses have been found to be particularly useful when monitoring a program, developing evaluation questions, or assessing the implementation of services.

Parsons, Noah. *What is a SWOT Analysis and How to Do It Right (With Examples).* 2021. Retrieved from https://www.liveplan.com/blog/what-is-a-swot-analysis-and-how-to-do-it-right-with-examples/

GUIDELINES IN PRACTICE
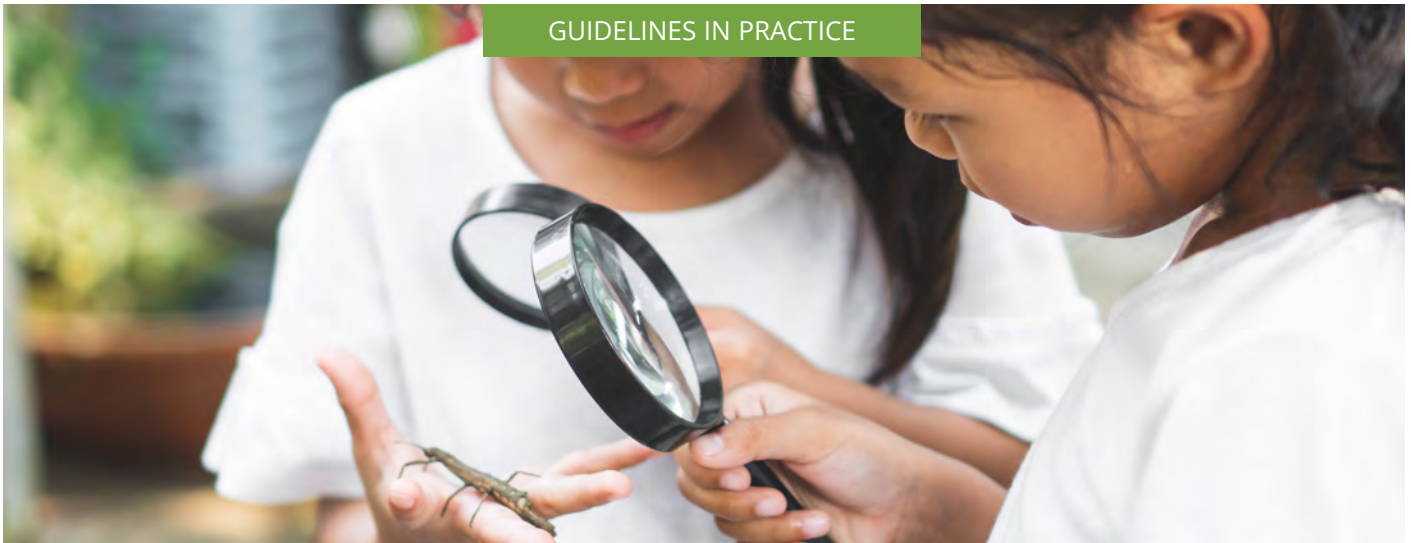
Designing Community Events for Latino Conservation Week

Written by Jimena Cuenca

How does one collaborate across organizations? What does community engagement look like within a community? The next two stories, both focused on programming for Latino Conservation Week, reveal a behind-the-scenes look into recognizing audience needs and building partnerships.

Planning a Program for a Specific Audience Can Be Like a Bicycle Ride

Community Outreach Coordinator Patricia Miguel at the Washington Area Bicyclist Association exemplified this when she organized a group bicycle ride intended for those who identify as trans, femme, non-binary, and/or a woman. Patricia explained that this population has been historically excluded and underrepresented in cycling culture. By design, this ride and chat would be centered on creating an experience where people showed up as their authentic selves. "It was important to us to make sure that this ride was speaking to the group of people that we were hoping to reach. . . . It's not necessarily going to draw in people who are experienced bicyclists. Rather we are looking for people who are newer to riding or who have had a long hiatus and are starting to get back on their bikes."

In seeking to create a unique experience, Patricia paid close attention to the bicycle route. "We intentionally made sure that the route is short. That it's fairly flat. No strenuous hill climbs. We'll also have built in breaks so that we can check in with the participants to make sure they're feeling alright. It's pretty hot here [in Virginia], so we want to make sure that people are staying hydrated, taking breaks, and listening to their bodies."

The other thing that sets this ride apart is the cultural conversation piece. "In the middle of the ride, we're going to stop, park our bikes, then huddle up in a circle that is appropriately socially distanced and read passages of an article that resonated with people." The article is "Why Being Green Comes Naturally to US Latinos," written by Yvette Cabrera for Grist.[1]

Though the article spends some time discussing the role of activism, Patricia says that activism or advocacy is not this bike ride's ultimate goal. "I wouldn't say that we're hoping for people to become advocates. I would say that we just hope that people get what they want to get out of the event. We have a people-first mentality. I think a lot of the Latinx community uses the bike for transportation or utility. With that in mind, we're not pushing for people to come out of this event to be super involved in their community, although that would be really great. It's a matter of being present where you are and showing up for your community from the starting point that you're at."

[1] Yvette Cabrera. Why Being Green Comes Naturally to US Latinos. *Grist.* 2020.
https://grist.org/justice/why-being-green-comes-naturally-to-us-latinos/

GUIDELINES IN PRACTICE

Designing Community Events for Latino Conservation Week

Acknowledging Your Starting Point Also Applies to Building Partnerships[2]

Frances Ngo recently joined Tracy Aviary in Salt Lake City, Utah as their new Conservation Outreach Biologist. With many events planned for Latino Conservation Week, building partnerships was crucial. At the beginning, Frances faced the added hurdle of being a relative newcomer to Salt Lake City. "When I was looking through my department's contact sheets, I saw that we had collaborators listed for Latino Conservation Week. So, I just started reaching out to people, sending cold emails saying, 'Hi! I'm the new outreach biologist. Do you want to partner on this?' Everybody was super enthusiastic and very welcoming. I was then added to an email chain where everybody was sharing ideas and asking how we can support each other."

Once event promotion began, the passion and enthusiasm spread quickly. Frances recounted, "Then other organizations reached out saying, 'We saw your post and we would love to do this with you this year or next year.' [Don't be] afraid to reach out to people that you don't know. Everybody brings something different."

By thoughtfully considering audience needs and being open to building new partnerships, both outreach coordinators Patricia Miguel and Frances Ngo created meaningful opportunities for their organizations and their communities.

[2] Wei-Skillern, J., & N. Silver. (2013). Four Network Principles for Collaboration Success. The Foundation Review, 5(1). https://doi.org/10.4087/FOUNDATIONREVIEW-D-12-00018.1

1.3 Environmental, educational, and community needs.

Investigate environmental, educational, and community needs. Identify priority goals related to environmental quality, environmental justice, social equity, and economic prosperity; community interests, assets, and aspirations; and justice, equity, diversity, and inclusion. Determine relevant education policies and priorities and any regulatory requirements.

*Indicators***:**

- Identify the need for the selected program focus or theme cooperatively with stakeholders, partners, and collaborators, such as community residents, intended audiences, community leaders, resource personnel, and funders.
- Review existing model environmental education programs and survey relevant literature to identify or confirm programmatic needs and possible areas of synergy.
- Articulate clearly how the program supports the development of environmental literacy.
- Identify how the program supports justice, equity, diversity, and inclusion goals.
- Describe the specific conservation goals, regulatory requirements, educational priorities, and environmental conditions or issues, including environmental justice issues, to be addressed by the program.
- For school-focused youth programs, identify how the program addresses applicable national, tribal, state/provincial, and local education standards.

RESOURCES YOU CAN USE

eeLEARN: Environmental Education Learning Modules

eeLEARN is a series of online, self-paced learning modules exploring the foundations of environmental education. Each module provides a full online learning experience, including reflections, assessments, completion certificate, and final report. eeLEARN includes these modules:

What is EE?

Learn about the definition of environmental education, the big ideas of the field, and the relationship between EE and environmental literacy. In this learning module, participants explore concrete examples of various types of exciting EE projects and programs from around the world.

The History of EE

In this learning module, participants explore some of the milestones and people who have influenced the field through videos and an interactive timeline.

Research and Evaluation

This module is an introduction to research and evaluation for environmental educators and others working in education. Through case studies and a step-by-step illustration of the evaluation process, participants explore how evaluation can improve EE programs. Participants also look at how research can inform practice and where to go for research summaries and syntheses.

Equitable and Inclusive EE

Learn about the importance of equity and inclusion to the success of the field of environmental education. This module was designed to help the field of environmental education to promote principles that build a more diverse, equitable, and inclusive movement and focus on promoting all three tiers of sustainability: ecological integrity, economic prosperity, and social equity. The module is a brief introduction into how we as a field can honor the beliefs, attitudes, languages, interpersonal styles, and values of all individuals, and remain committed to promoting diversity, inclusion, and equity in all aspects of our work.

Civic Engagement for Environmental Issues

Learn why civic engagement is an integral part of environmental education and how educators can go about incorporating civic engagement, designed specifically for environmental issues, into their practice.

For more information and up-to-date access to the eeLEARN modules, visit: https://naaee.org/eepro/learning/eelearn

1.4 Audience needs.

Analyze the audiences' interests, ways of knowing, physical abilities, and developmental levels. Determine current levels of audience awareness, knowledge, skills, motivation, and attitudes related to the environmental, educational, and community needs identified in guideline 1.3. Identify additional information needed to create inclusive learning environments that welcome different language groups, cultures, ages, abilities, sexual orientations, gender identities, ethnic groups, races, developmental levels, classes, and social groups.

*Indicators***:**

- Document, understand, and prioritize the assets and strengths of potential audience members (the precise segments of the population or community with which you want to work), including audience members of different races, ethnic groups, cultures, sexual orientations and gender identities, abilities, ages, social groups, classes, language groups, and religious traditions.
- Assess the potential audience, including attributes such as their ways of knowing, talents, perspectives, interests, literacy levels, awareness levels, knowledge, skills, motivation, attitudes, languages spoken, and experiences with issues such as environmental justice.
- Examine the interrelationships between audience needs and program needs and capacities.
- Verify that the program is inclusive and promotes an experience that welcomes different language groups, cultures, ages, abilities, sexual orientations and gender identities, ethnic groups, races, developmental levels, classes, and social groups.
- Confirm that facilities, technologies, and program activities are accessible and comply with both the spirit and letter of the Americans with Disabilities Act (ADA), the Individuals with Disabilities Education Act (IDEA) and Section 504 of the Rehabilitation Act, as appropriate.
- Identify appropriate educational methodologies for the specific characteristics (age, experience, cultural background, and educational experience) of the audience(s).
- Determine the type and length of program that is most appropriate to reach and meet the needs of the audience.

<div style="background:green;color:white;text-align:center">RESOURCES YOU CAN USE</div>

eeWORKS

eeWORKS is a project that demonstrates evidence-based outcomes of environmental education. NAAEE is partnering with Stanford University, University of California Davis, and University of Florida to demonstrate the impact and value of environmental education. Using published literature, comprehensive research reviews have been conducted for several priority topics:

The Benefits of Environmental Education for K–12 Students

Experts at Stanford University systematically searched the academic literature and analyzed 119 peer-reviewed studies published over a 20-year period that measured the impacts of environmental education for K–12 students. The review found clear evidence that environmental education programs provide a variety of benefits. Not surprisingly, the studies clearly showed that students taking part in environmental education programming gained knowledge about the environment.

Identifying Effective Climate Change Education Strategies

University of Florida's analysis of peer-reviewed research revealed that climate change education programs achieve a variety of positive outcomes. Most commonly, programs increase climate knowledge, but they also can impact learners' level of concern about climate change, problem-solving skills, and behaviors. Effective climate change education programs are personally relevant and meaningful, use engaging teaching strategies, encourage deliberative discussion to explore and navigate disagreements and controversial issues, engage participants in the scientific process, address misconceptions, and/or incorporate school or community projects for participants to take action.

The Impact of EE on Conservation and Environmental Quality

Researchers at Stanford University analyzed 105 peer-reviewed studies to assess environmental education's effects on conservation outcomes. The findings suggest that environmental education helps support and sustain a range of conservation efforts, including community conservation work. It engages key audiences and helps people understand, care about, and take effective action on environmental issues.

The Benefits of EE and Nature Connections in Early Childhood

Researchers at Stanford University analyzed 66 studies that examined early childhood environmental education outcomes. The findings suggest that early childhood environmental education supports environmental literacy outcomes, as well as other cognitive, social and emotional, and physical development outcomes.

For more information on the research synthesis projects, visit: https://naaee.org/our-work/programs/eeworks

Additional Resources:

Wheaton, M., A. Kannan, and N. M. Ardoin. 2018. Environmental Literacy: Setting the Stage (Environmental Literacy Brief, Volume 1). Stanford, CA: Social Ecology Lab, Stanford University. Retrieved from https://cdn.naaee.org/sites/default/files/stanfordsocialecologylab-brief-1_1.pdf

Wheaton, M., A. Kannan, and N.M. Ardoin. 2018. Pathways in Environmental Literacy (Environmental Literacy Brief, Volume 2). Stanford, CA: Social Ecology Lab, Stanford University. Retrieved from https://cdn.naaee.org/sites/default/files/stanfordsocialecologylab-brief-2_0.pdf

Wheaton, M., A. Kannan, and N. M. Ardoin. 2018. Learning, Developmental, and Environmental Action Progressions (Environmental Literacy Brief, Volume 3). Stanford, CA: Social Ecology Lab, Stanford University. Retrieved from https://cdn.naaee.org/sites/default/files/stanfordsocialecologylab-brief-3_0.pdf

Wheaton, M., A. Kannan, S. Selby, and N. M. Ardoin. 2018. The Concept of Dosage in Environmental and Wilderness Education (Environmental Literacy Brief, Volume 4). Stanford, CA: Social Ecology Lab, Stanford University. Retrieved from https://ed.stanford.edu/sites/default/files/news/images/stanfordsocialecologylab-brief-4.pdf

1.5 Partnerships.

Review existing partnerships and explore the development of new opportunities, especially those that are collaborative, center on community interests and shared priorities, address environmental justice, and promote equity and inclusion.

Indicators:

- Review existing relationships with the community, partners, and collaborators. Develop ways of strengthening these relationships and making them more inclusive.
- Inventory the groups, individuals, coalitions, networks, and efforts already addressing environmental and sustainability issues, including environmental justice issues, that affect community well-being and resilience. Explore possible synergistic relationships.
- Identify the community, partner, and collaborator strengths and resources (human, cultural, environmental, material, technological, and programmatic) that are complementary to environmental education.
- Explore community concerns, assets, aspirations, and other priorities, especially those connected to environmental, social, and economic health and well-being.
- Build relationships with groups and individuals associated with community concerns, assets, aspirations, and other priorities.
- Make a long-term commitment to the inclusive engagement of partners, collaborators, and the community.

RESOURCES YOU CAN USE

Self-Evaluation Tools for Program Review, Reflection, and Improvement

Conducting program and organization self-assessments takes time and resources. It also requires the ability to think carefully about what criteria are most important and what can be considered a success. Two organizations have created a series of self-evaluation tools to aid in the process of assessing different aspects of programs, organizations, and capacity.

National Center for Cultural Competence

The National Center for Cultural Competence (NCCC), part of the Georgetown University Center for Child and Human Development at the Georgetown University Medical Center, curates a helpful web page focused on self-assessments related to cultural competence. This resource provides an overview of self-assessment, including useful steps for planning and implementing self-assessments, and lists downloadable assessment tools and documents.

Many environmental educators will find two of the NCCC resources particularly useful:

- *Applying Cultural and Linguistic Competence to a Framework for Creating Learning Spaces for the Enhancement of Experiential Learning.* Retrieved from https://nccc.georgetown.edu/documents/NCCC-Learning-Table.pdf
- *Experiential Learning: Cultural and Linguistic Competence Checklist for MCH Training Programs.* Retrieved from https://nccc.georgetown.edu/documents/nccc_Learning_checklist_P4.pdf

These resources connect the experiential learning cycle to elements of cultural competence at the individual and organizational levels.

National Center for Cultural Competence. *Self-Assessments*. n.d. Retrieved from https://nccc.georgetown.edu/assessments/

Oregon State University Extension Service Outdoor School Program

Oregon State University has developed three self-evaluation tools of particular interest.

- **Cultural Responsiveness Self-Evaluation Tool**
  This self-evaluation tool is designed to support outdoor school programs in becoming more culturally responsive. The tool is intended to promote reflection and discussion among team members and move us toward our shared goal: every student in Oregon has a transformative outdoor school experience—one that is inclusive, meaningful, and high-quality....

- *How to Use This Self-Evaluation Tool*
  This self-evaluation tool is designed for organizational self-evaluation, reflection, and subsequent planning. Additionally, there are opportunities for individual self-reflection. The tool is arranged into three themes (Equity, Diversity, and Inclusion). Within each theme, there are four to five characteristics that describe aspects of the theme. Outdoor school program staff (and other stakeholders, as appropriate) qualify these characteristics as absent, emerging, or highly effective in their program. This evaluation process supports outdoor school programs in developing improvement plans for furthering Equity, Diversity, and Inclusion (EDI). All outdoor school programs should expect to have areas of growth, as cultural responsiveness is a continual learning and development process....

Brooks, S., S. Braun, K. Backe, and C.V. Jones. *Cultural Responsiveness Self-Evaluation Tool for Outdoor School.* Oregon State University Extension Service Outdoor School Program. 2020. Retrieved from https://outdoorschool.oregonstate.edu/about-us/research-evaluation-assessment/self-evaluation-tools/crset/

RESOURCES YOU CAN USE

Self-Evaluation Tools for Program Review, Reflection, and Improvement

• Special Education and Accessibility Self-Evaluation Tool

Students with exceptional needs have a right to attend outdoor school. Within the special education community, the term "exceptional needs" describes students with learning difficulties, physical or sensory impairments, and/or behavior needs who require specialized services, modifications, and/or physical accommodations to their education in order to help them learn and engage in school. Depending on an individual students' needs, their outdoor school experience may look different than the experience of their peers....

How to Use This Tool

This self-evaluation tool is designed for organizational self-evaluation, reflection and subsequent planning. The tool is arranged into three themes: Collaboration and Compliance (Inclusive Practices), Facility and Program (Inclusive Practices), and Teaching and Learning (Inclusive Practices). Within each theme, there are three to four characteristics that describe aspects of the theme. Outdoor school program staff (and other stakeholders, as appropriate) qualify these characteristics as absent, emerging, or highly effective in their program. This evaluation process supports outdoor school programs and school staff and the community to co-develop improvement goals for high-quality, accessible, and inclusive programming. All outdoor school programs should expect to have areas of growth....

Braun, B., S. Brooks, K. Backe, S. Arbuckle, and C. Jones. *Special Education and Accessibility Self Evaluation Tool.* Oregon State University Extension Service Outdoor School Program. 2021. Retrieved from https://outdoorschool. oregonstate.edu/about-us/research-evaluation-assessment/self-evaluation-tools/seaset/

• Instructional Resource Self-Evaluation Tool

Students' learning experiences at outdoor school depends on many factors including the setting, content, and manner of instruction. Additionally, the instructional resources used to facilitate these learning experiences are extremely important. An instructional resource, as defined in this document, is anything that describes what you are engaging students in "doing" and/or how you are engaging them in doing it. Instructional resources are the individual components used to help students learn (e.g., field studies, lesson plans, activities, etc.). Instructional resources may exist for experiences with explicit learning objectives (e.g., field studies) and without explicit learning objectives (e.g., supporting experiences like mealtimes, free time, songs, stories, etc.). All of the instructional resources combined make up the curriculum....

How to Use This Tool

This self-evaluation tool is designed to support the review, development and improvement of the range of instructional resources that make up curriculum used in Oregon's outdoor school programs. The tool is arranged into three themes (Context and Settings for Learning, Content and Integration, and Instruction and Pedagogy). Within each theme, there are 4-7 characteristics that describe aspects of the theme. Outdoor school program staff (and other stakeholders, as appropriate) qualify these characteristics as absent, emerging, and/or highly effective in an instructional resource. This self-evaluation process supports outdoor school staff, school districts and the community to co-develop goals to improve/develop instructional resources and curriculum....

Backe, K., S.M. Braun, and R.A. O'Neill. *Instructional Resource Self-Evaluation Tool*—Version 3.0. Oregon State University Extension Service Outdoor School Program, Corvallis, Oregon. 2021. Retrieved from https://oregonstate.app.box. com/s/24mkuwo3kfyj8n92uagc536yva1c32du

Plan

Key Characteristic #2

Design Instruction

Environmental Education Programs: Guidelines For Excellence
Key Characteristics and Guidelines

Plan

Key Characteristic #2
Design Instruction

Design instructional content and strategies with well-articulated goals and objectives that lead to environmental literacy, meet the needs of audience members, and address community concerns and aspirations. Build the program on a foundation of quality instructional materials and well-prepared staff. Purposefully co-design instruction in collaboration with stakeholders and other community partners.

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DID YOU KNOW?

Writing SMARTIE Goals and Objectives

Well-defined goals and objectives help program developers, partners and collaborators, instructors and the participants understand more fully what is expected. They guide instructional development and learning, provide a clear purpose, and assist in the development of meaningful assessments and evaluation strategies. In writing goals and objectives, many program developers have found a set of criteria, summarized by the acronym SMARTIE, to be helpful. The components of a SMARTIE goal or objective follow:

Strategic, Specific and Stretching: Describes an action, behavior, outcome, or achievement that is observable

Measurable: Details quantifiable indicators of progress towards meeting expectations and outcomes (e.g., 70% of participants, five or more)

Audience: Names the audience (e.g., workshop participants, community members, third grade students) and describes outcomes from the perspective of the audience (i.e., what the audience will be able to do)

Relevant: Is meaningful, realistic, and ambitious; the audience can (given the appropriate tools, knowledge, skills, authority, resources) accomplish the task or make the specified impact

Time-bound: Delineates a specific time frame (i.e., by the end of workshop, after completing the lesson, by the end of the program, within six months)

Inclusive: Invites traditionally excluded or marginalized people into activities and decision-making in ways that share power

Equitable: Designed to address systemic inequity and injustice

Additional Resources:

Carnegie Mellon University. Eberly Center. Teaching Excellence and Educational Innovation. *Articulate Your Learning Objectives*. n.d. Retrieved from https://www.cmu.edu/teaching/designteach/design/learningobjectives.html

Dubec, R. *SMART Verbs for Learning Objectives or Learner Outcomes.* 2017. Retrieved from https://teachingcommons.lakeheadu.ca/smart-verbs-learning-objectives-or-learner-outcomes

The Management Center. *SMARTIE Goals Worksheet.* n.d. Retrieved from https://docs.google.com/document/d/1u8QyjtUuAxlHO0c1DeHYu5O8BT3e-wL9TpaWiV5CZGQ/edit

University of California Irvine. *Writing Learning Objectives.* n.d. Retrieved from https://sites.uci.edu/medsim/files/2015/03/Writing-learning-objectives.pdf

You for Youth. *Activity and Program SMART Goals.* Continuous Education Through 21st CCLC Activities. 2017. Retrieved from https://y4y.ed.gov/tools/activity-and-program-smart-goals

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DID YOU KNOW?

Logic Model and Theory of Change

Logic models and theories of change both offer ways of analyzing what you hope to accomplish with your program. Both identify program inputs, outputs, and outcomes. And, although they can be used synergistically, they each fill a different need.

Logic Model

The logic model provides a visual representation of the program and its evaluation. It illustrates the relationships among the various program components: initial situation (e.g., degraded coastal areas with declining numbers of species); identified priorities (e.g., restoring coastal areas, increasing species diversity); inputs (i.e., resources needed to accomplish a set of activities); outputs (i.e., activities designed to accomplish the program goal, as well as the audiences that participate in those activities); and short-term (immediate), medium-term (2–3 years), and long-term (4–10 years) outcomes-impacts. The logic model can help guide program planning, implementation, and evaluation. It can serve as a tool for clarifying program elements, identifying evaluation questions and indicators, and conducting ongoing self-evaluation. It can provide a roadmap, describing where you want to go, how you will get there, what types of detours were taken along the way, and how you will know when you have arrived.

Logic Model, Evaluation Questions, and Indicators

Name of Program/Project:

Situation:

Priorities:

Inputs	Outputs		Outcomes		
	Activities	Participants	Short-term	Mid-term	Long-term
Staff Money Time Materials Partners Research	Workshops Publications Services Events Products	Teachers Youth Community members	Increased knowledge Increased level of skills	Increased knowledge and skills used in appropriate settings	Goal is reached and sustained

Evaluation Questions: What do you want to know?

Were the inputs sufficient and timely? Did they meet the program goals?	Did all activities occur as intended? What was the quality of the intervention? Was the content appropriate?	Did targeted community members participate? Who did not participate? Who else was reached?	Did knowledge increase? Did understanding of coastal restoration techniques increase? What else happened?	Are community members continuing to participate in restoration activities? Are they participating in other activities?	To what extent has the biodiversity of the targeted coastal area been increased? In what other ways has ecosystem quality increased?

Indicators: How will you know it?

# staff $ invested Delivery timetable	# workshops scheduled Publications printed # events	Actual vs. desired attendance #, % that attended per workshop or session	#, % with increased knowledge of coastal restoration	#, % using new knowledge and skills to monitor progress of restoration activities	# of species recovered Other positive environmental benefits

<div style="background:green">DID YOU KNOW?</div>

Logic Model and Theory of Change

Theory of Change

While the logic model tends to focus on the "what" of program development (What do you hope will happen?), the theory of change focuses attention on the "why" of program development. A theory of change asks why the program activities will result in the intended outcomes. Conservation International provides a useful description of theory of change, its purposes, and key characteristics:

> The theory of change approach is a process of project planning and evaluation which maps the relationship between a long-term goal of a project and the intermediate and early changes that are required to bring it about. It encourages a project team or group of stakeholders to explain how the project is understood to reach its goals, and the process through which changes will occur. The approach emphasizes the theory and assumptions underlying the pathway of change from the implementation of selected interventions and activities to intended outcomes….

> **Purpose**
> A theory of change approach can serve multiple purposes at different stages of the project management cycle including:
> - For strategic planning in guiding goal-setting and selection of interventions;
> - For validation of existing project plans, to check alignment of stated goals with proposed project activities;
> - As a communication tool to explain project priorities and management decisions;
> - For evaluation, to assess progress of project interventions towards long-term goals.

> **Key characteristics**
> The theory of change approach is characterized by several key features that distinguish it from other planning or evaluation strategies, tools or methodologies:
> - A structured and participatory process that guides project teams and/or groups of stakeholders to conceptualize and articulate the changes required to meet their long-term goals
> - Development of an outcomes framework—a mapping product that illustrates the intermediate steps required to achieve long-term goals from a set of interventions
> - The identification of assumptions that explain what is required to achieve the changes required
> - Elaboration of a set of indicators that are specific enough to track changes
> - Elaboration of a set of activities required to achieve the intermediate and long-term goals of the project

Conservation International. *Constructing Theories of Change for Ecosystem-Based Adaption Projects: A Guidance Document.* 2013. Retrieved from https://www.conservation.org/docs/default-source/publication-pdfs/constructing-theories-of-change-for-ecosystem-based-adaptation.pdf?Status=Master&sfvrsn=1fd83348_3

DID YOU KNOW?

Logic Model and Theory of Change

Additional Resources:

Allen, W. *Using a Theory of Change (ToC) to Better Understand Your Program*. 2016. Retrieved from https://learningforsustainability.net/post/theory-of-change/

Bey, G., C. McDougall, and S. Schoedinger. *Report on the NOAA Office of Education Environmental Literacy Program Community Resilience Education Theory of Change.* 2020. National Oceanic and Atmospheric Administration, Washington, DC. doi:10.25923/mh0g-5q69

Braus, Judy, Ed. *Tools for Engagement: A Toolkit for Engaging People in Conservation.* New York, NY: National Audubon Society. 2011. Retrieved from https://naaee.org/sites/ default/files/eepro/resource/files/ toolsofengagement.pdf

Learning for Sustainability. *Theory of Change.* n.d. Retrieved from https://www.learningforsustainability.net/evaluation/theoryofchange.php

My Environmental Education Evaluation Resources Assistant (MEERA). *Step 2. Clarify Program Logic*. n.d. Retrieved from https://meera.snre.umich.edu/step2

NOAA Performance, Risk and Social Science Office. *Logic Models.* 2021. Retrieved from https://www.performance.noaa.gov/program_evaluation_guide_reference_2/

NOAA National Marine Sanctuaries. *Education Project Evaluation—Plan an Evaluation.* n.d. Retrieved from https://sanctuaries.noaa.gov/education/evaluation/evaluation.html

W. K. Kellogg Foundation. *Logic Model Development Guide.* 2004. Retrieved from https://wkkf.issuelab.org/resource/logic-model-development-guide.html

2.1 Goals and objectives.

Articulate specific, measurable goals and objectives that foster the development of environmental literacy, align with the organization/agency's goals, address applicable Sustainable Development Goals, support academic objectives, enhance learning opportunities for people with different backgrounds, experiences, abilities, and perspectives, and address community concerns and aspirations. Use justice, equity, diversity, and inclusion as a lens when writing goals and objectives. Develop a detailed logic model and/or theory of change.

Indicators:
- Base the program on clearly delineated, environmental literacy performance objectives, such as those detailed in *K–12 Environmental Education: Guidelines for Excellence* (NAAEE 2019).
- State how the program contributes to environmental quality, social equity, economic prosperity, and cultural vitality.
- Reflect the Sustainable Development Goals, as appropriate.
- Address environmental justice issues, as appropriate.
- Ensure that program goals and objectives:
    - Address priorities identified through the self-assessment and front-end evaluation process (Key Characteristic #1)
    - Align with the organization/agency's mission and/or strategic goals
    - Describe accurately and specifically what the program is designed to accomplish
    - Are attainable and measurable
    - Reflect the value of long-term commitments by the organization, partners, and collaborators
    - Relate specifically to the needs and interests of the community and identified audience(s)
    - Address any applicable standards or mandates of the organization
    - Consider relevant aspects of state/provincial, tribal, or federal planning documents and, for school focused youth programs, are consistent with applicable national, tribal, state, and local educational goals, objectives, and standards
    - Are consistent with the purposes for which the program was funded and responsive to intended uses specified by the funder
- Develop program goals and objectives collaboratively with partners, collaborators, and other stakeholders.
- Specify evaluation criteria and indicators of success for the program. Tie evaluation criteria to program goals and objectives. Establish a system for monitoring indicators of success.
- Develop a program logic model and/or theory of change that illustrates the relationship among key program components, including program goals, objectives, and evaluation indicators.

RESOURCES YOU CAN USE

Designing Instruction

There are dozens of different instructional design models and tools available—from the ADDIE model to Gagne's nine events of instruction and Merrill's First Principles of Instruction to the Hilda Taba model. Each has its strengths, depending on your purposes and your instructional philosophy. However, two models of particular interest for environmental educators are Understanding by Design, also known as Backward Design, and the 5 E Instructional Model.

Backward Design

In their book, *Understanding by Design*, Grant Wiggins and Jay McTighe offer a framework for curriculum design they called Backward Design. The following, excerpted from Bowen (2021), provides a quick overview of the three-stage design process:

Backward design innately encourages intentionality during the design process. It continually encourages the instructor to establish the purpose of doing something before implementing it into the curriculum. Therefore, backward design is an effective way of providing guidance for instruction and designing lessons, units, and courses. Once the learning goals, or desired results, have been identified, instructors will have an easier time developing assessments and instruction around grounded learning outcomes.

The incorporation of backward design also lends itself to transparent and explicit instruction. If the teacher has explicitly defined the learning goals, then they have a better idea of what they want the learners to get out of learning activities. Furthermore, if done thoroughly, it eliminates the possibility of doing certain activities and tasks for the sake of doing them. Every task and piece of instruction has a purpose that fits in with the overarching goals and goals of the course.

The Three Stages of Backward Design

Stage One: Identify Desired Results
In the first stage, the instructor must consider the learning goals of the lesson, unit, or course. Wiggins and McTighe provide a useful process for establishing curricular priorities. They suggest that the instructor ask themselves the following three questions as they progressively focus in on the most valuable content:

- **What should participants hear, read, view, explore or otherwise encounter?**
  This knowledge is considered knowledge worth being familiar with. Information that fits within this question is the lowest priority content information that will be mentioned in the lesson, unit, or course.
- **What knowledge and skills should participants master?**
  The knowledge and skills at this substage are considered important to know and do. The information that fits within this question could be the facts, concepts, principles, processes, strategies, and methods students should know when they leave the course.
- **What are big ideas and important understandings participants should retain?**
  The big ideas and important understandings are referred to as enduring understandings because these are the ideas that instructors want students to remember sometime after they've completed the course.

By answering the three questions presented at this stage, instructors will be able to determine the best content for the course. Furthermore, the answers to question #3 regarding enduring understandings can be adapted to form concrete, specific learning goals for the students, thus identifying the desired results that instructors want their students to achieve.

RESOURCES YOU CAN USE

Designing Instruction

Stage Two: Determine Acceptable Evidence

The second stage of backward design has instructors consider the assessments and performance tasks students will complete in order to demonstrate evidence of understanding and learning. In the previous stage, the instructor pinpointed the learning goals of the course. Therefore, they will have a clearer vision of what evidence students can provide to show they have achieved or have started to attain the goals of the course. Consider the following two questions at this stage:

1. How will I know if students have achieved the desired results?
2. What will I accept as evidence of student understanding and proficiency?

At this stage it is important to consider a wide range of assessment methods in order to ensure that students are being assessed over the goals the instructor wants students to attain. Sometimes, assessments do not match the learning goals, and it becomes a frustrating experience for students and instructors.

Stage Three: Plan Learning Experiences and Instruction

The final stage of backward design is when instructors begin to consider how they will teach. This is when instructional strategies and learning activities should be created. With the learning goals and assessment methods established, the instructor will have a clearer vision of which strategies would work best to provide students with the resources and information necessary to attain the goals of the course. Consider the questions below:

1. What enabling knowledge (facts, concepts, principles) and skills (processes, procedures, strategies) will students need in order to perform effectively and achieve desired results?
2. What activities will equip students with the needed knowledge and skills?
3. What will need to be taught and coached, and how should it best be taught, in light of performance goals?
4. What materials and resources are best suited to accomplish these goals?

Excerpted with permission from Bowen, R.S. *Understanding by Design*. Vanderbilt University. Center for Teaching. 2021. Retrieved from https://cft.vanderbilt.edu/guides-sub-pages/understanding-by-design/

RESOURCES YOU CAN USE

Designing Instruction

5 E Instructional Model
The 5 E instructional model, developed by Biological Sciences Curriculum Study (BSCS) in 1987, promotes active, collaborative learning in which participants ask questions, observe, analyze, and draw conclusions. Designed to facilitate conceptual change, the instructional model centers around five phases: engagement, exploration, exploration, elaboration, and evaluation. Bybee, et. al. summarize the five phases as follows:

Engagement—The teacher or a curriculum task accesses the learners' prior knowledge and helps them become engaged in a new concept through the use of short activities that promote curiosity and elicit prior knowledge. The activity should make connections between past and present learning experiences, expose prior conceptions, and organize students' thinking toward the learning outcomes of current activities.

Exploration—Exploration experiences provide students with a common base of activities within which current concepts (i.e., misconceptions), processes, and skills are identified and conceptual change is facilitated. Learners may complete lab activities that help them use prior knowledge to generate new ideas, explore questions and possibilities, and design and conduct a preliminary investigation.

Explanation—The explanation phase focuses students' attention on a particular aspect of their engagement and exploration experiences and provides opportunities to demonstrate their conceptual understanding, process skills, or behaviors. This phase also provides opportunities for teachers to directly introduce a concept, process, or skill. Learners explain their understanding of the concept. An explanation from the teacher or the curriculum may guide them toward a deeper understanding, which is a critical part of this phase.

Elaboration—Teachers challenge and extend students' conceptual understanding and skills. Through new experiences, the students develop deeper and broader understanding, more information, and adequate skills. Students apply their understanding of the concept by conducting additional activities.

Evaluation—The evaluation phase encourages students to assess their understanding and abilities and provides opportunities for teachers to evaluate student progress toward achieving the educational objectives.

Bybee, R., J. Taylor, et al. *The BSCS 5E Instructional Model: Origins and Effectiveness.* Colorado Springs, CO: BSCS. 2006. Retrieved from https://media.bscs.org/bscsmw/5es/bscs_5e_full_report.pdf

Additional Resources
Gulzar, A.A. *Taba Model of Curriculum Development*. 2021. Retrieved from https://www.educarepk.com/taba-model-of-curriculum-development.html

Kaur, D. & Sayali. *Grand Unified Learning Theory: A New Learning Landscape*. University of British Columbia. n.d. Retrieved from https://blogs.ubc.ca/gult/instructional-cycles/

Levesque, S. *ADDIE Model*. University of Washington, Bothell. 2019. Retrieved from https://www.uwb.edu/it/service-catalog/teaching-learning/hybrid-and-online-learning/instructional-design/addie

Lohman, L. *Applying Merrill's First Principles of Instruction.* Center for the Advancement of Faculty Excellence. Queens University of Charlotte. n.d. Retrieved from https://my.queens.edu/cafe/Best%20Practices%20Documents/Applying%20Merrill%27s%20First%20Principles%20of%20Instruction.pdf

McTighe & Associates Consulting. *Design Tools*. n.d. Retrieved from https://jaymctighe.com/resources/#1521225059545-3fe59c79-239c

McTighe, J. & G. Wiggins. *Understanding by Design Framework.* 2012. Retrieved from https://files.ascd.org/staticfiles/ascd/pdf/siteASCD/publications/UbD_WhitePaper0312.pdf

Northern Illinois University Center for Innovative Teaching and Learning. *Gagné's Nine Events of Instruction*. In Instructional Guide for University Faculty and Teaching Assistants. 2020. Retrieved from https://www.niu.edu/citl/resources/guides/instructional-guide

DID YOU KNOW?

Useful Definitions: Culturally Relevant Teaching, Culturally Responsive Teaching, and Culturally Sustaining Teaching

Culturally Relevant Teaching

Proposed by Gloria Ladson-Billings,[1] Culturally Relevant Pedagogy is an asset-based approach that engages learners by connecting to their experiences, cultural backgrounds, and interests throughout instruction. According to the California Department of Education (2020):

> Culturally Relevant Pedagogy is a theoretical model that focuses on multiple aspects of student achievement and supports students to uphold their cultural identities. Culturally Relevant Pedagogy also calls for students to develop critical perspectives that challenge societal inequalities.

> Ladson-Billings proposed three main components of Culturally Relevant Pedagogy: (a) a focus on student learning and academic success, (b) developing students' cultural competence to assist students in developing positive ethnic and social identities, and (c) supporting students' critical consciousness or their ability to recognize and critique societal inequalities. All three components need to be utilized.

California Department of Education. *Culturally Relevant Pedagogy*. 2020. Retrieved from https://www.cde.ca.gov/pd/ee/culturalrelevantpedagogy.asp

Culturally Responsive Teaching

> ... the behavioral expressions of knowledge, beliefs, and values that recognize the importance of racial and cultural diversity in learning. It is contingent on . . . seeing cultural differences as assets; creating caring learning communities where culturally different individuals and heritages are valued; using cultural knowledge of ethnically diverse cultures, families, and communities to guide curriculum development, classroom climates, instructional strategies, and relationships with students; challenging racial and cultural stereotypes, prejudices, racism, and other forms of intolerance, injustice, and oppression; being change agents for social justice and academic equity; mediating power imbalances in classrooms based on race, culture, ethnicity, and class; and accepting cultural responsiveness as endemic to educational effectiveness in all areas of learning for students from all ethnic groups.

Geneva, G. *Culturally Responsive Teaching: Theory, Research, and Practice*. 2010. New York: Teachers College.

Culturally Sustaining Teaching

> Culturally sustaining practices (CSP) allow, invite, and encourage students to not only use their cultural practices from home in school, but to maintain them. CSP allows students to exist not only in the culture of their school, but also in the culture of their home.

Chajed, A. *Culturally Sustaining Pedagogy: An introduction*. 2020. Retrieved from https://cpet.tc.columbia.edu/news-press/culturally-sustaining-pedagogy-an-introduction

[1] Gloria Ladson-Billings, G. (1994). The Dreamkeepers. San Francisco: Jossey-Bass Publishing Co. and Ladson-Billings, Gloria J. "Culturally Relevant Pedagogy 2.0: a.k.a. the Remix." *Harvard Educational Review* 84 (2014): 74-84.

Additional Resources:

Brown University. *Culturally Responsive Teaching.* 2021. Retrieved from https://www.brown.edu/academics/education-alliance/teaching-diverse-learners/strategies-0/culturally-responsive-teaching-0

Howard, T. Seven *Culturally Responsive Teaching Strategies and Instructional Practices.* 2021. Retrieved from https://www.hmhco.com/blog/culturally-responsive-teaching-strategies-instruction-practices

Sci Girls. *Culturally Responsive Teaching.* 2019. Retrieved from https://www.youtube.com/watch?v=Y22JGwU1Upc&feature=youtu.be

2.2 Instructional materials and techniques.

Employ high quality instructional materials and techniques designed to meet environmental literacy learning goals and objectives. Build in opportunities for experiential learning, social and emotional learning, and time for reflection. Design instruction to be responsive and accessible to those with linguistic, physical ability, neurological (e.g., Alzheimer, multiple sclerosis), hearing, visual, developmental (e.g., autism spectrum, ADHD), and age differences.

Indicators:
- Use established guidelines for developing and selecting high-quality environmental education instructional resources, such as those outlined in NAAEE's *Environmental Education Materials: Guidelines for Excellence* (2021).
- Design instructional materials to clearly address program goals and objectives, including the topics covered, skills and concepts developed, and key questions considered.
- Ensure that instructional materials are accurate and inclusive in describing environmental conditions, concepts, attitudes, processes, challenges, and decisions, including environmental justice issues, and in reflecting diverse perspectives.
- Design activities that encourage 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.
- Apply instructional principles and techniques that create effective, culturally responsive, developmentally appropriate, and inclusive learning environments for all learners. Include, with respect and equity, the assets and strengths of a broad array of peoples, such as people of different races, ethnic groups, cultures, sexual orientations and gender identities, abilities, ages, social groups, classes, language groups, and religious traditions.
- Base instructional design on learner interest, different ways of knowing, and an assessment of learner readiness for the concepts and skills to be presented.
- Ensure that materials and activities are developmentally appropriate for the range of learners within the designated age groupings.
- Design instruction to meet the needs of people with disabilities and exceptionalities such as those recognized by the Individuals with Disabilities Education Act (IDEA) (e.g., autism, blindness and visual impairment, deafness and hearing impairment, deaf/blindness, developmental delay, emotional disturbance, intellectual disability, multiple disabilities, orthopedic impairment, and epilepsy).

Watershed Chronicles—Training Teachers to Bring the Outside In

Written by Meredeth Dash

When my son asked me the other day, "Mom, why do you have to teach teachers? Don't they already know how to teach?" I had to pause to think about how to answer that in 12-year-old terms. I said, "Well, you know how you update your favorite video games? It's still the same game but with new characters, items to collect, and new ways to earn points. I'm like the software update for teachers! I give them new ways to teach the same thing."

This school year, educators Penelope Gorman and Tyler Twyford from the James River Park System (JRPS) and I teamed up for an eight-part training series called Come Outside to Teach in which teachers learn how to incorporate the outdoors into whatever subject matter they are teaching. Each part of the series has been designed to be appropriate in a virtual world but can be adapted for in-person instruction. Until that return, our role in supporting teachers is vital. With COVID-19 causing disruptions to regular classroom experiences, we want teachers to view the outdoors as an accessible extension of their virtual world. Even from behind our screens, we must find creative ways to do as author Deborah Underwood writes and bring the "Outside In."

The target audience for Come Outside to Teach reaches beyond formal classroom teachers of Richmond Public Schools to nonformal teachers called "providers," who specialize in teaching after-school enrichment classes such as sewing, yoga, or cooking. After the first session, one participant wrote, "Thank you for providing this platform and challenging us all to be comfortable with teaching and facilitating discussions outside. It provided me with knowledge and skills that I can incorporate when working outside, as well as through virtual sessions." A seventh grade English teacher reflected, "I really enjoyed the session on Saturday. I came with no expectation but left energized and [with] strategies to implement with my kids." Additional sessions featured an in-person field trip to the Science Museum of Virginia, as well as sessions linking the outdoors to history and the arts. A final field session, held in June 2021, allowed teachers to visit and explore their local watershed at the James River Park.

Overall, the series has the potential to help 160 teachers build their confidence in teaching outdoors. In spring 2021, the Alliance and James River Park System offered an after-school student program that complemented the work being done with the teachers. Students learned about the outdoors virtually through a Meaningful Watershed Educational Experience (MWEE).[1] Everyone is hopeful for in-person student sessions in the coming months.

Adapted with permission from eeBLUE Watershed Chronicles. Dash, M. Virginia Environmental Education Specialist for the Alliance for the Chesapeake Bay. 2021. To read the full case study and others in the series, visit: https://naaee.org/our-work/programs/eeblue/21CCLC

eeBLUE is a five-year partnership between the NOAA Office of Education and NAAEE, dedicated to increasing environmental and science literacy among NOAA's partners and external networks. For more information about eeBLUE, visit: https://naaee.org/our-work/programs/eeblue

[1] NOAA's Meaningful Watershed Educational Experiences (MWEE) are learner-centered experiences that focus on investigations into local environmental issues that lead to informed stewardship actions. They are composed of multiple elements that include learning both outdoors and in the classroom, and are designed to increase the environmental literacy of all student participants. All students, regardless of where they live or their social or economic status, should have the opportunity to participate in and benefit from MWEEs. To learn more about MWEEs, visit: https://www.noaa.gov/education/explainers/noaa-meaningful-watershed-educational-experience

2.3 Instructional staff.

Ensure the participation of highly qualified, prepared staff and volunteers. Train staff and volunteers to create a supportive, engaging, and interactive learning environment that meets the needs of all learners. Use a justice, equity, diversity, and inclusion lens when recruiting, selecting, and preparing staff and volunteers.

Indicators:

• Confirm that all staff foster an equitable and inclusive learning environment that welcomes people of different races, ethnic groups, cultures, sexual orientations and gender identities, abilities, ages, social groups, classes, language groups, and religious traditions.

• Assess competencies and professional development needs of staff, volunteers, and other presenters or educators. Use criteria such as those outlined in NAAEE's *Professional Development of Environmental Educators: Guidelines for Excellence* (2019).

• If needed, design and implement a professional development program. Professional development may include content background and instructional techniques as well as safety and emergency preparedness, differentiated instruction, equity and inclusion, behavior management strategies, and culturally relevant and responsive instruction.

• Include a performance review system for staff and volunteer evaluation in the organization's personnel policies and procedures. Draw from and support specific program goals and objectives in developing the review system.

• Encourage educators to employ a range of instructional strategies to support different ways of knowing and learning. These may include strategies such as experimentation, observation, lecture, discussion, creative expression, service learning, field studies, use of technology, role playing, independent work, civic science, cooperative learning, and cross-age teaching.

• Confirm that educators convey important concepts through a variety of sensory modes (e.g., visual, auditory, tactile) and in more than one format (e.g., text, video, experiential) so that all learners are engaged.

• Perform appropriate background checks on prospective staff or volunteers.

• Verify that program staff and volunteers can communicate why the program is important and how activities meet specific goals and objectives.

<div style="background-color:green; color:white; text-align:center;">RESOURCES YOU CAN USE</div>

Facilitating Civic Engagement and Community Action

Instructional design is a complex, iterative process. Among other tasks, you and your partners will want to determine what you want to accomplish (program goals and learning objectives) and how you will achieve those aims (instructional strategies). Designing instruction with well-articulated goals, objectives, and instructional strategies that contribute to the development of environmental literacy is essential to the overall program development process.

Below are some suggested resources you can use as you (1) consider your civic engagement goals, (2) develop learner expectations, and (3) develop instructional strategies for civic engagement and community action.

1) Civic Engagement Goals

If your programmatic purposes include facilitating engagement in a community action process, you will want to further define your civic engagement goals; that is, what you hope to accomplish through civic engagement. Defining goals will help clarify what type(s) of engagement might be best.

The International Association for Public Participation (IAP2) has developed a "spectrum of engagement" for public participation projects that provides a starting point for environmental educators thinking about engagement goals.

Developed primarily for public participation projects such as community planning or policy development, the IAP2 spectrum delineates different levels of public impact or involvement, from no opportunity to influence (Inform) to complete control over decision making (Empower).

- **Inform:** Providing the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities, and/or solutions
- **Consult:** Obtaining public feedback on analysis, alternatives, and/or decisions
- **Involve:** Working directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered
- **Collaborate:** Partnering with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution
- **Empower:** Placing final decision making in the hands of the public

International Association for Public Participation. *IAP2 Spectrum of Public Participation.* Louisville, CO:IAP2, 2007. Retrieved from: https://cdn.ymaws.com/www.iap2.org/resource/resmgr/pillars/Spectrum_8.5x11_Print.pdf

Additional Resources

City of Fort Saskatchewan. *Public Engagement Framework.* 2021. https://www.fortsask.ca/en/your-city-hall/resources/Documents/Public-Engagement-Framework.pdf

Monroe, Martha C., Elaine Andrews, and Kelly Biedenweg. A Framework for Environmental Education Strategies. *Applied Environmental Education and Communication.* 6, no. 3-4 (2008): 205-16. doi:10.1080/15330150801944416.

Westheimer, J. and J. Kahne. What Kind of Citizen? The Politics of Educating for Democracy. *American Educational Research Journal.* Volume 41 No. 2, Summer 2004, 237-269.

RESOURCES YOU CAN USE

Facilitating Civic Engagement and Community Action

2) Learning Frameworks

Learning frameworks are useful tools for homing in on applicable learner objectives. The following learning framework, produced through a partnership between NAAEE and the Kettering Foundation, focuses on Civic Engagement for Environmental Issues (CEEI).

Civic Engagement for Environmental Issues (CEEI) The learning framework outlines a critical set of participant outcomes, including learner performance objectives, that can be used to develop comprehensive and cohesive education programs focused on facilitating civic engagement for environmental issues. The framework is organized around four learning domains:

CEEI Knowledge:

Individuals develop an understanding of the processes and systems that impact environmental decision-making, including human social, cultural, political, and economic systems. Individuals understand how changes in one system results in changes in another. They understand the reciprocal interrelationship between humans and the environment, including how human activities affect environmental quality and long-term sustainability at varying, interconnected levels (e.g., local, tribal, national, and global). They use their knowledge to understand power relationships and policy options.

CEEI Skills:

Individuals define, learn about, evaluate, and act on environmental and other community issues that impact well-being. Individuals investigate these issues; consider evidence from differing ways of knowing, viewpoints, and value positions; and evaluate proposed action plans, including policy options. They analyze the intended and unintended consequences of their own actions, actions taken by other individuals and groups, and actions that impact policy on long-term environmental, social, and economic sustainability.

CEEI Dispositions:

Individuals develop a sense of personal and civic responsibility. They are willing and able to act on their own conclusions about what should be done to ensure environmental quality, social equity, and economic prosperity. They demonstrate self-efficacy and agency, understanding that what they do individually and in groups can make a difference.

CEEI Participatory Action:

Individuals gain direct experiences in participatory action taking. They work individually and collectively, applying the knowledge, skills, and dispositions necessary for taking action that addresses environmental and community issues, including policy issues.

Simmons, B. and M. Monroe. The Promise of Civic Engagement for Environmental Issues: Synergy of Environmental Education and Civic Education. 2020. North American Association for Environmental Education. Retrieved from: https://cdn.naaee.org/sites/default/files/eepro/resource/files/promise_of_ee_and_civic_education__0.pdf

Additional Resources

Simmons, B. et. al. *K–12 Environmental Education: Guidelines for Excellence.* Washington, DC: NAAEE. 2019. https://cdn.naaee.org/sites/default/files/eepro/resource/files/k-12_ee_guidelines_for_excellence_2019_3.pdf

Educating for American Democracy. *Roadmap to Educating for American Democracy.* 2021. Retrieved from: https://www.educatingforamericandemocracy.org/the-roadmap/

RESOURCES YOU CAN USE

Facilitating Civic Engagement and Community Action

3) Instructional Strategies

Civic engagement and community action rarely result from one event or activity. Often, a series of integrated strategies is necessary. Once you've identified your civic engagement or community action program goals and learner objectives, you can begin the process of mapping out various instructional strategies, using resources such as *Placemaking with Children and Youth*.

Placemaking with Children and Youth

Placemaking with Children and Youth provides the tools educators need to actively involve young people in planning and designing their local communities. In addition to offering background information on the history of children's rights, suggestions on how to build programs and partnerships, and a discussion of the ethics of participation, *Placemaking with Children and Youth* devotes five chapters to step-by-step guidance on how to engage young people in investigating and making positive change in their local environments.

The book offers "how to" descriptions for nearly 100 participatory methods that facilitate community investigations—from using maps and historical documents to interviews and drawings to bioblitz inventories and learning expeditions to intergenerational workshops. Each participatory method is described in detail with guidance offered on ages, time to complete, and materials needed.

Step-by-step instructions are given, along with variations on how the method has been used in different settings.

Case studies, drawn from around the globe, illustrate how others have worked with children and youth to move from investigation and evaluation to action in their own communities. For example, case studies describe a community visioning program for multi-racial youth; a project that involved young people in exploring environmental health issues among farmworker families; and work by an architectural collective to involve children in designing and building new community spaces that serve them.

Additional chapter topics include organizing, analyzing and reporting ideas, reflection and evaluation, and putting it together and taking action.

Derr, V., L. Chawla, and M. Mintzer. *Placemaking with Children and Youth: Participatory Practices for Planning Sustainable Communities*. 2018. New York: New Village Press. https://nyupress.org/9781613321003/placemaking-with-children-and-youth/

Additional Resources

National Coalition for Dialogue and Deliberation (NCDD). *Resource Guide on Public Engagement.* Boiling Springs, PA: NCDD, 2010. Retrieved from: https://www.ncdd.org/uploads/1/3/5/5/135559674/ncdd2010_resource_guide.pdf

Earth Force. *Earth Force Process.* 2021. Retrieved from: https://earthforceresources.org/efprocess/

Plan

Key Characteristic #3

Design Program Structure and Delivery

Key Characteristic #3
Design Program Structure and Delivery

Develop a program format and delivery system that supports instructional goals and objectives and meets audience needs. Build program planning on a foundation of thorough preparation, including budget planning, facilities management, and concern for health and safety. Create a supportive, safe, culturally relevant, culturally responsive, accessible, and welcoming learning environment. Coordinate instructional delivery in collaboration with stakeholders and other community partners.

RESOURCES YOU CAN USE

Designing Outdoor Science and Environmental Education Distance Learning Experiences

Written by Emilie Lygren, Kevin Beals, and Jedda Foreman, BEETLES Project, Lawrence Hall of Science, UC Berkeley

What can effective virtual outdoor science experiences look like? Amid school closures and the suspension of in-person programming during the Covid pandemic, this is a pressing question in the field of outdoor science and environmental education. Like many others, we are just starting to dip our toes into best practices in distance learning. While we know distance learning can't replicate every aspect of an in-person experience, we can still use research on how people learn to guide our design of virtual offerings. The insights below are from our experiences and expertise in teaching and learning in general, doing distance learning with adults, watching lots of videos aimed at learners, and talking to many folks about their distance learning experiences with kids. This document is a work in progress as we, like many of you, get more and more familiar with emerging best practices in distance learning.

Note: When we say "distance learning," we are referring to learning offered at a distance, including videos, online discussions, interactive virtual discussions, printed materials distributed, etc.

Identifying a Goal and an Audience

What are the goals and intended audience(s) of your distance learning or online communication? Thinking about the purposes or goals and the intended audience(s) is an important first step. The format, content, tone, and focus of the distance learning experience may look different depending on your goals. Focusing on the intended audience(s) as you're designing a virtual learning experience can guide you in making sure your offering will be accessible to those you hope to reach. Possible purposes or goals for distance learning include the following:

- Replacing content or experiences that would have taken place during in-person programming
- Keeping the brand of your program alive and in the consciousness of schools, families, and learners
- Offering a new kind of programming, virtually
- Supporting classroom instruction
- Creating resources that can be used post-pandemic as pre/post outdoor experiences
- Gaining new followers or engaging new audiences and potential clients

If you're designing distance learning experiences and hope to primarily engage an audience of individuals who would have attended in-person programming, think about how to equitably and effectively engage that audience. What are existing pathways of communication, or established groups who are already communicating with families, with whom you might collaborate?

RESOURCES YOU CAN USE

Designing Outdoor Science and Environmental Education Distance Learning Experiences

If you are an organization that typically coordinates with classroom teachers or school districts to bring learners to your program, you'll probably be able to reach your intended audience more effectively and more equitably by reaching out through schools and districts, rather than by reaching out to individual learners and families. Schools and districts have systems in place for distance learning. How can you build on what schools are already doing to support equitable access to distance learning? Some organizations are working with their county offices of education to engage learners through interactive "classroom visits," pre-recorded video content, or live streams on social media pages. Working with schools,

teachers, districts, or community organizations can benefit your audience by streamlining how they are receiving distance learning; this promotes equity by building on distance learning methods and systems already being designed to meet the needs of a community and can benefit you by offering a direct connection to the audience you hope to engage. Additionally, consider equity in terms of what learners will need in order to participate fully. Consider what a learner might need in order to access your learning experience, including guidance/support from an adult, and how you are going to ensure equity of access to those resources.

RESOURCES YOU CAN USE

Designing Outdoor Science and Environmental Education Distance Learning Experiences

Distance Learning Format	Considerations
Pre-Recorded Videos *Videos that a learner could watch any time*	• Can reach large audience • Can be viewed multiple times by different individuals, at any time • Video can be edited to mix in close up footage of organisms or parts of nature • Participation requires access to device and the internet
Interactive Live Experiences *Experiences in which instructors and learners can be in conversation via video phone, or text*	• Requires participant attendance at a specific time • Challenges include privacy concerns and restrictions on how educators can interact with minors in an online setting • Best with smaller groups to support direct interaction with an instructor • Participation requires access to a device and the internet
Self-Guided Printed Activities *Materials and instructions/activities learners can engage with on their own*	• If distributed effectively, can increase access because participation doesn't require a device • On its own, doesn't offer opportunity for interaction with an instructor • Needs to include support and guidance for the student • May require support from adults at home, unless written directly or student
Collaborative Online Tools and Platforms *Platforms in which instructors and learners can engage in discussion or collaboration, including online learning communities, virtual whiteboards, discussion forums, or chat features (e.g., Seesaw Padlet, gmind, Mighty network, Google classroom, etc.)*	• Offers opportunities for interaction and sharing (of ideas, images, resources, etc.) among learners and instructors • Offers another mode of engagement for learners (beyond engaging with a video) • Offers lasting resources for reference and engagement • Privacy concerns need to be addressed • Participation requires access to a device and the internet • Can be challenging to promote ongoing use if it's a platform learner's don't have another reason to access
Hybrid *Any combination of the above formats*	• Combining distance learning methods could include: – Printed materials or virtual handouts offered to learners that support their participation in an online video or moment – A pre-recorded video focused on student observation, followed by interactive discussion groups – An interactive, in the moment experience that is offered as a recording later – A website that offers a variety of activities, including videos, discussion prompts, readings, and printable handouts

Excerpted, by permission, from Lygren, E., K. Beals, and J. Foreman. *Designing Outdoor Science and Environmental Education Distance Learning Experiences*. BEETLES (Better Environmental Education, Teaching, Learning & Expertise Sharing). 2020. Retrieved from http://beetlesproject.org/

For more information, including considerations for applying BEETLES instructional design principles to distance learning, visit http://beetlesproject.org/principles-for-distance-learning/.

3.1 Format and delivery.

Design a program format and delivery system that successfully reaches the target audience(s) and ensures an effective, culturally relevant and responsive, inclusive, safe, and accessible learning environment for all participants. Revisit the program logic model or theory of change. Develop a work plan and program budget, including a timeline of tasks, responsibilities, and associated costs.

Indicators:

• Verify that the format (e.g., workshop, demonstration area, community forum, online course, festival, webinar) is appropriate to meet program goals and objectives. For instance, consider whether the program is a stand-alone event or activity, infused throughout other programs or curricula, inserted into an existing program as a module or unit, or included as part of a regular community event (e.g., farmer's market).

• Design the program's scope and duration to meet the stated goals and objectives.

• Confirm that the program format and how it is delivered (e.g., virtual or in-person) meets the needs of the intended audience.

• Ensure that the program format and delivery system provide a safe, comfortable, respectful, and welcoming atmosphere for audience members of different races, ethnic groups, cultures, sexual orientations and gender identities, abilities, ages, social groups, classes, language groups, and religious traditions.

• Detail how the program fits within a larger scope and sequence for environmental education and learner readiness for the concepts and skills presented.

• Design evaluation strategies to provide feedback on identified needs. Use assessment strategies that are developmentally appropriate, culturally and linguistically responsive, and accommodate people wit special needs, including those with differing physical abilities. Develop ways of monitoring the evaluation and assessment results.

• Construct a program work plan and budget that details the tasks to be accomplished, the relationship among tasks, timeline and sequencing, and who is responsible for implementation. Identify resource needs and funding sources associated with work plan tasks.

RESOURCES YOU CAN USE

Best Practices for LGBTQ+ Inclusive Youth Programming

Creating an inclusive and welcoming environment does not start and end with instruction. Attention is required throughout the program planning and implementation process. To help you in this work, OUT Maine has created a set of actions designed to ensure that LGBTQ+ (lesbian, gay, bisexual, transgender, queer or questioning) participants feel welcome and safe. The guide carefully outlines background information, actions, potential challenges, and case studies. The following is a brief overview and excerpt of the considerations detailed by OUT Maine (2020):

Inclusive Registration Processes
Outreach and Recruitment Materials
Outreach and recruitment materials should include pictures of LGBTQ+ families and youth, as well as other visual statements of support and inclusion for LGBTQ+ participants, such as rainbows.
Forms
Registration forms should provide space for transgender, non-binary, and intersex participants to accurately report their own gender, sex, name and pronouns.

Safe and Accessible Bathrooms
Transgender and non-binary participants should
1. be allowed to use the restroom that corresponds with their gender identity
2. have access to gender-neutral restrooms with public ways' access
3. have their rights protected under the organization's policies

Inclusive Language and Signage
All language and signage on campus, and all publications, outreach, and Internet-presence related to the organization, should reflect an awareness of LGBTQ+ identities and issues, and should not be complicit in homophobia or transphobia. Avoid reinforcing ideas about gender roles and the gender binary in your materials, signs, or programs.

Affirming, Inclusive Facilitation and Curricula
Facilitators, educators, and program leaders should be consistent in their use of gender-neutral terminology and program design. Avoid reinforcement of the gender binary and stereotypes. Recognize that some activities or conversations may be more difficult for LGBTQ+ youth.

Inclusive Organizational Policies, Procedures and Training
The organization should have specific policies in place to protect its LGBTQ+ staff, participants, and visitors. There also should be specific organization policies to deal with homophobia and transphobia. All staff members should receive adequate training and should know how to respond to potential homophobic and/or transphobic acts on campus.

Safe and Gender-Affirming Sleeping Arrangements
Residential programs should provide all LGBTQ+ participants with housing options that feel comfortable, safe, and gender-affirming

OUT Maine. *Best Practices for LGBTQ+ Inclusive Youth Programming*. 2020. Retrieved from https://outmaine.org/

RESOURCES YOU CAN USE

Best Practices for LGBTQ+ Inclusive Youth Programming

Additional Resources:

Anderson, G., K. Harris, D. Levoit, and J. Madosky. *Considerations for Inclusive Convenings.* Doris Duke Charitable Foundation. 2019. Retrieved from https://theavarnagroup.com/wp-content/uploads/2020/06/Considerations-for-Inclusive-Convenings-1.pdf

4-H Program Leaders Working Group. *Practices for Inclusion of Individuals of All Genders and Sexual Orientations.* 2020. Retrieved from https://access-equity-belonging.extension.org/wp-content/uploads/2020/02/Inclusion-Practices-Gender-and-Orientation-Final-2-20-2020.pdf

Gender Spectrum. *12 Easy Steps on the Way to Gender Inclusiveness...,* 2020. Retrieved from https://drive.google.com/file/d/1pvg3Q3m4SAY1WMe1e3c0UZOBPVC78hB7/view

Incluseum. *Including the 21st Century Family.* 2014. Retrieved from https://incluseum.com/2014/07/07/including-the-21st-century-family/

OUT Maine. *8 Steps to Inclusive Language in the Classroom*. n.d. Retrieved from https://drive.google.com/file/d/1R5VSja8Ew7fKLp0ieR5rAtssm-CyxwFG/view

Unitarian Universalist Association. *Inclusive Language Guidance.* 2021. Retrieved from https://www.uua.org/lgbtq/welcoming/ways/200008.shtml

University of Minnesota Extension. *Inclusive Youth Development Programs for LGBTQ+ People.* 2020. Retrieved from https://extension.umn.edu/equity-culture-and-identity/inclusive-youth-development-programs-lgbtq-people

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3.2 Facilities.

Confirm that safe and accessible facilities (such as meeting rooms, outdoor spaces, restrooms, food preparation areas, and computer/Internet access) are available and ready for use. Select and configure facilities to support the program's learning goals and objectives, welcoming different races, ethnic groups, cultures, sexual orientations, gender identities, abilities, ages, social groups, classes, language groups, and religious traditions.

Indicators:

- Comply with both the spirit and letter of the Americans with Disabilities Act (ADA), the Individuals with Disabilities Education Act (IDEA), and Section 504 of the Rehabilitation Act, as appropriate.
- Support instructional goals and objectives, providing safe and comfortable spaces for exploration, observation, hands-on learning, and discussion.
- Reserve or rent needed facilities.
- Ensure that facilities and areas to be used for the program are free of medical or safety hazards.
- Obtain permits and permissions, as appropriate.
- Verify that facilities, including meeting rooms, signage, and bathrooms, are welcoming to people of different races, sexual orientations and gender identities, abilities, ages, ethnic groups, cultures, social groups, classes, language groups, and religious traditions.
- Confirm that assistive technology and adaptive equipment is available for use by people with impairments, such as vision, mobility, and hearing. Examples include all terrain wheelchairs, all terrain rolling walkers, trekking poles, scooters, Braille displays, large-print signage and brochures, screen reading software, text-to-speech systems, closed captioning, hearing loops, and magnifiers.

DID YOU KNOW?

A Comparison of ADA, IDEA, and Section 504

Accessibility is not only a program goal but also a legal requirement in many cases. Three laws are of particular importance—the Americans with Disabilities Act (ADA), Section 504 of the Rehabilitation Act of 1973, and the Individuals with Disabilities Education Act (IDEA). The following descriptions, from the US Department of Justice, provide a legal overview:

Americans with Disabilities Act (ADA)

The ADA prohibits discrimination on the basis of disability in employment, state and local government, public accommodations, commercial facilities, transportation, and telecommunications. It also applies to the United States Congress.

To be protected by the ADA, one must have a disability or have a relationship or association with an individual with a disability. An individual with a disability is defined by the ADA as a person who has a physical or mental impairment that substantially limits one or more major life activities, a person who has a history or record of such an impairment, or a person who is perceived by others as having such an impairment. The ADA does not specifically name all of the impairments that are covered.

Individuals with Disabilities Education Act (IDEA)

The Individuals with Disabilities Education Act (IDEA) (formerly called P.L. 94-142 or the Education for All Handicapped Children Act of 1975) requires public schools to make available to all eligible children with disabilities a free appropriate public education in the least restrictive environment appropriate to their individual needs.

IDEA requires public school systems to develop appropriate Individualized Education Programs (IEP's) for each child. The specific special education and related services outlined in each IEP reflect the individualized needs of each student.

IDEA also mandates that particular procedures be followed in the development of the IEP. Each student's IEP must be developed by a team of knowledgeable persons and must be reviewed at least annually. The team includes the child's teacher; the parents, subject to certain limited exceptions; the child, if determined appropriate; an agency representative who is qualified to provide or supervise the provision of special education; and other individuals at the parents' or agency's discretion.

Section 504 of the Rehabilitation Act of 1973 (Section 504)

The Rehabilitation Act prohibits discrimination on the basis of disability in programs conducted by federal agencies, in programs receiving federal financial assistance, in federal employment, and in the employment practices of federal contractors. The standards for determining employment discrimination under the Rehabilitation Act are the same as those used in Title I of the Americans with Disabilities Act.

Section 504 states that "no qualified individual with a disability in the United States shall be excluded from, denied the benefits of, or be subjected to discrimination under" any program or activity that either receives federal financial assistance or is conducted by any executive agency or the United States Postal Service.

US Department of Justice. *A Guide to Disability Rights Laws*. 2020. Retrieved from https://www.ada.gov/cguide.htm#anchor65310

DID YOU KNOW?

A Comparison of ADA, IDEA, and Section 504

What does this mean for your effort?

The American Bar Association (2015) has produced a series of checklists to help in organizing meetings that are inclusive, including considerations of:

– Exterior building features (e.g., barrier free entrances, easy to open doors, crosswalks with audible and visual signals)
– Interior building features (e.g., Braille and tactile signage at elevators and exits, wheelchair accessible doorways)
– Meeting room features (e.g., visible space for interpreters to stand, display tables accessible by those in wheelchairs or on scooters, toileting space, and water for service animals)
– Registration materials (e.g., request for accommodations included, ADA compliant website, staff member or volunteer identified to assist those with disabilities)
– Presentations (e.g., avoid strobe lights, face the audience, visually describe slides and other presentation materials)
– Meeting materials (e.g., prepare meeting handouts to accommodate individuals with visual impairments)

Additional Resources

American Bar Association. *Planning Accessible Meetings and Events: A Tool Kit, 2015.* Retrieved from https://www.americanbar.org/content/dam/aba/administrative/commission-disability-rights/accessible-meetings-toolkit.pdf

Bullard, E., H. Gallagher, and A. Protonentis. *Say "Yes!" to Kids with Disabilities: Stories and Strategies for Including ALL Kids.* Seattle, WA: Seattle Children's PlayGarden. 2021. Retrieved from https://childrensplaygarden.org/wp-content/uploads/2020/09/Say-_Yes_-to-Kids-with-Disabilities_-Stories-and-Strategies-for-Including-ALL-Kids-compressed.pdf

Earth Force. *Including Special Education Students in Earth Force Field Work.* Denver, CO. Retrieved from https://cdn.naaee.org/sites/default/files/eepro/resource/files/including_special_education_students_in_earth_force_field_work_march_2016_2.pdf

Snow, K. *Examples of People First Language.* 2007. Retrieved from http://www.inclusioncollaborative.org/docs/Person-First-Language-Article_Kathie_Snow.pdf

United States Access Board. *Outdoor Developed Areas: A Summary of Accessibility Standards for Federal Outdoor Developed Areas*. 2014. Retrieved from https://www.access-board.gov/files/aba/guides/outdoor-guide.pdf

US Department of Justice. *ADA Standards for Accessible Design.* 2010. Retrieved from https://www.ada.gov/regs2010/2010ADAStandards/2010ADAStandards.pdf

3.3 Health and safety.

Create a plan that provides for the health and safety of all participants and staff.

Indicators:

- Confirm that staff members are certified in first aid and cardiopulmonary resuscitation (CPR), as appropriate.
- Verify that staff members:
    - Know whom to contact for medical assistance and to report an emergency such as a fire and know where the nearest phone or radio is to make the contact
    - Recognize and know how to avoid hazards such as venomous animals and toxic plants
    - Know how to respond to all emergency situations they might reasonably be expected to encounter, such as missing persons
- Design and implement a system to warn staff of severe weather or other emergency situations. Confirm that staff members know where to go for shelter or how to evacuate.
- Provide participants with relevant information about the program, including level of physical activity, appropriate clothing, equipment needed, accessibility, and safety concerns.

GUIDELINES IN PRACTICE

Photo: © API Forward Movement

Asian Pacific Islander Forward Movement (APIFM)[1] Air Quality Workshops for Urban Students

In Southern California's San Gabriel Valley, more than 25 schools are located within 500 feet of the Los Angeles basin's notoriously clogged freeways, exposing students to high levels of air pollution. In 2013, the Asian Pacific Islander Forward Movement (APIFM) began working with some of these schools to educate and empower students to work toward changes in the air quality on and around their school campuses.

The mission of APIFM is to cultivate healthy, long-lasting, and vibrant Asian and Pacific Islander (API) communities through grassroots organizing. APIFM works on a range of issues focused on health, food, and environmental justice for API communities in LA County. APIFM and its partners knew that issues such as air and noise pollution affected people living in urban areas, and that many people in their community lived near pollution sources such as freeways, busy streets, rail lines, and airports. As they learned more, they realized that many types of air pollution—especially the particulates emitted by vehicle traffic—are linked not only to lung problems but also to other health issues such as obesity and diabetes.

To address these issues, APIFM began working with Los Angeles County high school students. What started as a special project with the senior honor society at Mark Keppel High School (MKHS) has now been adopted by the school's youth advocacy club. APIFM supports club members in this predominantly Asian and Latino school as they work to improve air quality on and around their school campus. APIFM has built on this work in 10 other schools by engaging more than 150 students in one- or two-day air quality monitoring workshops. During the 2016-2017 school year, APIFM began working with Abraham Lincoln High School to increase the program's impact, expanding its focus to include student ideas for action on other environmental issues that disproportionately affect communities of color.

To engage students with air quality issues, APIFM relies on two key program components: One- or two-day, hands-on air quality monitoring workshops Ongoing, customized engagement with school clubs, teachers, and classes that engages students in further investigation and action, and in exploration of environmental justice issues.

[1]Formerly known as Asian and Pacific Islander Obesity Prevention Alliance (APIOPA)

GUIDELINES IN PRACTICE

Asian Pacific Islander Forward Movement (APIFM) Air Quality Workshops for Urban Students

To develop and implement its approach to engaging students in hands-on learning about air quality and the link to health issues, APIFM worked with a variety of partners, including Sonoma Technology, Inc.; HabitatMap; South Coast Air Quality Management District (SCAQMD); University of Southern California's (USC) Environmental Health Centers (EHC); NAAEE; local schools and teachers; local journalists; and community groups such as the Asian Americans Advancing Justice (AAAJ-LA), Asian Pacific Policy and Planning Council (A3PCON), San Gabriel Mountains Forever, and Educated Men with Meaningful Messages. APIFM is also working with a long-time teacher to refine its classroom curriculum (Kids Making Sense) and is developing a train-the-trainer program to expand its reach.

Evaluation Plan

To evaluate its programs—including its workshops and its longer-term, customized interaction with school groups—APIFM has adopted a multi-part evaluation plan. For short-term workshops, formal evaluation has consisted largely of pre- and post-workshop participant surveys. APIFM tested the survey in an early workshop, making revisions to both the workshop curriculum and the survey itself based on responses. Informally, APIFM has drawn on its experiences working with communities, educators, and young people in these workshops to chart its next steps, including plans for longer-term involvement with a small number of schools.

With its longer-term engagement with school groups, APIFM is evaluating its work over the course of the school year. They are conducting pre- and post-tests with students, with post-tests administered several months after completion of programming to help determine longer-term impact of the program. APIFM is also conducting focus groups with teachers, school officials, parents, students, and local elected officials to investigate these key stakeholders' perspectives on the youth-led air pollution work. These approaches are intended to help program staff identify what worked well and what changes are needed to ensure that the work is sustainable. Finally, to continuously improve the *Kids Making Sense* curriculum and website, staff at Sonoma Technology, Inc. are using evaluation data and observations from workshops. Taking an adaptive approach to this work, they see the *Kids Making Sense* curriculum and website as works in progress.

Adapted with permission from the Global Environmental Education Partnership (GEEP)[2] Case Studies. Chan, S. and K. Tsukahira. *Asian and Pacific Islander Obesity Prevention Alliance (APIOPA) Air Quality Workshops for Urban Students.* 2019.

You are encouraged to read the full case study at: https://thegeep.org/sites/default/files/2021-03/APIForward.GEEPcasestudy.pdf

[2] The GEEP is a partnership of the US Environmental Protection Agency, the Environmental Protection Administration of Taiwan, and the North American Association for Environmental Education. For more information, visit: www.thegeep.org

3.4 Communication.

Develop a promotion, communication, marketing, and dissemination plan to ensure that the program reaches its target audience(s) and achieves its goals and objectives.

Indicators:

- Communicate the availability and content of the program to target audiences. Confirm that members of the target audience(s) know how they can participate in the program and where they can obtain additional information about the program.
- Detail media contacts and publicity strategies for use on an ongoing basis.
- Coordinate event schedules with partners, collaborators, and relevant service-oriented and community-based groups to avoid conflicts. To the extent possible, schedule events so as not to compete with other programs for the target audience(s) and to maximize opportunities for the target audience(s) to participate.
- Implement marketing and promotion efforts in collaboration with partners and other stakeholders.
- Coordinate programs and promotion strategies with other environmental education programs to maximize effect and opportunities for integration.
- Publicize the program in ways that are sensitive to, and inclusive of, cultural, racial, ethnic, gender, age, and other differences appropriate to the situation.
- Collect participant quotes, case studies, photographs that reflect the diversity of program participants and other forms of documentation to facilitate marketing and sharing of information gained. Collect signed releases from participants depicted in photos, granting their permission to publish or otherwise use the photographs.

RESOURCES YOU CAN USE

Features of Positive Youth Development

Photo: © Rocking the Boat

Positive Youth Development (PYD) is often discussed as combining positive experiences, positive relationships, and positive environments. According to the Interagency Working Group on Youth Programs (IWGYP), PYD is more formally defined as

> …an intentional, prosocial approach that engages youth within their communities, schools, organizations, peer groups, and families in a manner that is productive and constructive; recognizes, utilizes, and enhances young people's strengths; and promotes positive outcomes for young people by providing opportunities, fostering positive relationships, and furnishing the support needed to build on their leadership strengths.

Feature of Positive Youth Development

Promoting PYD requires attention and planning. The National Research Council (2002) has developed a provisional list of characteristics of settings that support PYD:

Physical and Psychological Safety

Safe and health-promoting facilities, and practices that increase safe peer group interaction and decrease unsafe or confrontational peer interactions

Appropriate Structure

Limit setting, clear and consistent rules and expectations, firm-enough control, continuity and predictability, clear boundaries, and age-appropriate monitoring

Supportive Relationships

Warmth, closeness, connectedness, good communication, caring, support, guidance, secure attachment, and responsiveness

Opportunities to Belong

Opportunities for meaningful inclusion, regardless of one's gender, ethnicity, sexual orientation, or disabilities; social inclusion, social engagement, and integration; opportunities for sociocultural identity formation; and support for cultural and bicultural competence

Positive Social Norms

Rules of behavior, expectations, injunctions, ways of doing things, values and morals, and obligations for service

Support for Efficacy and Mattering

Youth-based, empowerment practices that support autonomy, making a real difference in one's community, and being taken seriously. Practices that includes enabling, responsibility granting, and meaningful challenge. Practices that focus on improvement rather than on relative current performance levels

Opportunities for Skill Building

Opportunities to learn physical, intellectual, psychological, emotional, and social skills; exposure to intentional learning experiences; opportunities to learn cultural literacies, media literacy, communication skills, and good habits of mind; preparation for adult employment; and opportunities to develop social and cultural capital

Integration of Family, School, and Community Efforts

Concordance; coordination; and synergy among family, school, and community

Interagency Working Group on Youth Programs (IWGYP). *Positive Youth Development*. n.d. Retrieved from https://youth.gov/youth-topics/positive-youth-development

National Research Council. *Chapter 4: Features of Positive Youth Development, in Community Programs to Promote Youth Development.* (Washington, DC: The National Academies Press, 2002). Retrieved from http://www. nap.edu/openbook.php?record_id=10022

RESOURCES YOU CAN USE

Features of Positive Youth Development

Enhancing the Development of Life Skills

In addition to creating a supportive setting for PYD within your program, instruction can be specifically designed to enhance the development of life skills that will help youth transition to adulthood. The Targeting Life Skills Model (Hendricks 1998), widely used by 4-H, offers a set of competencies organized around the four categories of the 4-H Pledge (Head, Heart, Hands, and Health):

HEAD	HEART	HANDS	HEALTH
Thinking	*Relating*	*Giving*	*Living*
• Learning to learn	• Communications	• Community service-volunteering	• Healthy life-style choices
• Decision making	• Cooperation	• Leadership	• Stress management
• Problem solving	• Social skills	• Responsible contribution to group	• Disease prevention
• Critical thinking	• Conflict resolution		• Personal safety
• Service learning	• Accepting differences		
Managing	*Caring*	*Working*	*Being*
• Goal setting	• Concern for others	• Marketable/useful skills	• Self esteem
• Planning/organizing	• Empathy	• Teamwork	• Self responsibility
• Wise use of resources	• Sharing	• Self motivation	• Character
• Keeping records	• Nurturing relationships		• Managing feelings
• Resiliency			• Self discipline

Norman, M.N. and J.C. Jordan. *Targeting Life Skills in 4-H*. University of Florida, IFAS Extension. n.d. Retrieved from https://4-h.org/wp-content/uploads/2016/02/101.9_Targeting_Life_Skills.pdf

Additional Resources:

Hendricks, P.A. *Developing Youth Curriculum Using the Targeting Life Skills Model: Incorporating Developmentally Appropriate Learning Opportunities to Assess Impact of Life Skill Development* (Iowa State Extension Publication 4H-137A, 1998). Ames, IA: Iowa State University.

Interagency Working Group on Youth Programs (IWGYP). Retrieved from https://www.air.org/project/interagency-working-group-youth-programs-iwgyp

Oregon State University Extension Service. 4-H Youth Development. *Positive Youth Development.* 2021. Retrieved from https://extension.oregonstate.edu/4h/positive-youth-development

US Department of Health & Human Services. Family and Youth Services Bureau. *Positive Youth Development*. 2017. Retrieved from https://www.acf.hhs.gov/fysb/positive-youth-development

YouthPower2. *Positive Youth Development (PYD) Framework*. n.d. Retrieved from https://www.youthpower.org/positive-youth-development-pyd-framework

YouthPower2. *Promoting Positive Youth Development.* n.d. Retrieved from https://www.youthpower.org/positive-youth-development

Plan

Key Characteristic #4

Develop an Evaluation Plan

Key Characteristic #4
Develop an Evaluation Plan

Develop an evaluation plan, including guiding questions for each phase of the program development cycle. Design data collection methods, documenting relevant program inputs, outputs, outcomes, and impacts. Build in ways to monitor and use evaluation results throughout program implementation.

DID YOU KNOW?

Types of Evaluation

Evaluation is integral to the overall program planning process. But, what is evaluation?

> Program evaluation is a systematic method for collecting, analyzing, and using information to answer questions about projects, policies, and programs, particularly about their effectiveness and efficiency. In both the public and private sectors, stakeholders will want to know if the programs they are funding, implementing, voting for, receiving, or objecting to are actually having the intended effect. ...equally important are questions such as how the program could be improved, whether the program is worthwhile, whether there are better alternatives, if there are unintended outcomes, and whether the program goals are appropriate and useful.

Definitions.net. *Program Evaluation.* 2021. Retrieved from https://www.definitions.net/definition/program+evaluation

Each program development phase and each type of evaluation helps you answer a different set of questions and each is designed to help you continuously improve your program. The following descriptions may help you sort through some of the different types of evaluation.

> **Front-End Evaluation**
> Front-end evaluation (sometimes referred to as a needs assessment or planning evaluation) is used to guide the development of a program. It often involves studying a problem, situation, or issue to find out if a program is needed or how it should be framed. Front-end evaluation also can be used to identify gaps between your audience's current level of knowledge, attitudes, skills, and behavior and the level that is desired. In addition, it can be used to guide the development of new programs by helping to determine the characteristic or needs of an audience, define program goals and objectives, and identify potential stakeholders. As its name suggests, a front-end evaluation usually takes place prior to or at the very early stages of developing a program. Front-end evaluations generally are conducted for or used by those who will be developing the program.

Ernst, J.A., M.C. Monroe, and B. Simmons. *Evaluating Your Environmental Education Programs: A Workbook for Practitioners*. Washington, DC: NAAEE. 2009

DID YOU KNOW?

Types of Evaluation

Goals-Based Evaluation

Often programs are established to meet one or more specific goals. These goals are often described in the original program plans. Goal-based evaluations are evaluating the extent to which programs are meeting predetermined goals or objectives.

Process-Based Evaluations

Process-based evaluations are geared to fully understanding how a program works—how does it produce the results that it does. These evaluations are useful if programs are long-standing and have changed over the years, employees or customers report a large number of complaints about the program, or there appears to be large inefficiencies in delivering program services. They are also useful for accurately portraying to outside parties how a program truly operates (e.g., for replication elsewhere).

McNamara, C. *Basic Guide to Program Evaluation (Including Outcomes Evaluation)*. n.d. Retrieved from https://managementhelp.org/evaluation/program-evaluation-guide.htm

Outcome Evaluation

Investigates to what extent the program is achieving its outcomes. These outcomes are the short-term and medium-term changes in program participants that result directly from the program. For example, EE outcome evaluations may examine improvements in participants' knowledge, skills, attitudes, intentions, or behaviors.

Zint, M. My Environmental Education Evaluation Resource Assistant. 2008. Retrieved from https://meera.snre.umich.edu/evaluation-what-it-and-why-do-it

Impact Evaluation

Determines any broader, longer-term changes that have occurred as a result of the program. These impacts are the net effects, typically on the entire school, community, organization, society, or environment. EE impact evaluations may focus on the educational, environmental quality, or human health impacts of EE programs.

Zint, M. My Environmental Education Evaluation Resource Assistant. 2008. Retrieved from https://meera.snre.umich.edu/evaluation-what-it-and-why-do-it

Assessment

... Assessment refers to the wide variety of methods or tools that educators use to evaluate, measure, and document the academic readiness, learning progress, skill acquisition, or educational needs of students.

... Formative assessments are commonly said to be for learning because educators use the results to modify and improve teaching techniques during an instructional period, while summative assessments are said to be of learning because they evaluate academic achievement at the conclusion of an instructional period.

Great Schools Partnership. *Assessment.* The Glossary of Education Reform. 2015. Retrieved from https://www.edglossary.org/assessment/

DID YOU KNOW?

Types of Evaluation

Additional Resources:

Clavijo, K. and K. Khalil. *Practical Evaluation for Conservation Education and Outreach: Assessing Impacts and Enhancing Effectiveness.* Rowman & Littlefield Publishers. 2020

eeVAL. https://evaluation.naaee.org/

Ernst, J., M. Monroe, and B. Simmons. *Evaluating Your Environmental Education Programs: A Workbook for Practitioners.* Washington, DC: North American Association for Environmental Education, 2009.

Frierson, H., S. Hood, G. Hughes, and V. Thomas. "A Guide to Conducting Culturally Responsive Evaluation. In *The 2010 User-Friendly Handbook for Project Evaluation.* National Science Foundation, Directorate for Education and Human Resources, Division of Research, Evaluation, and Communication. 2010. REC 99-12175 pp.75-96

McNamara, C. *Basic Guide to Program Evaluation* (Including Outcomes Evaluation). n.d.
Retrieved from https://managementhelp.org/evaluation/program-evaluation-guide.htm

Rossi R H., M. W. Lipsey, and H. E. Freeman. *Evaluation: A Systematic Approach.* Thousand Oaks, CA: Sage Publications, 2004.

University of Wisconsin Extension, National Water Outreach Education Extension. Water Outreach Self-Assessment. Retrieved from
http://fyi.uwex.edu/wateroutreach/water-outreach-education/accomplish-what/assess-yourprogram/.

W.K. Kellogg Foundation. *The Step-by-Step Guide to Evaluation: How to Become Savvy Evaluation Consumers.* 2017. Retrieve from https://www.wkkf.org/resource-directory/resources/2017/11/the-step-by-step-guide-to-evaluation--how-to-become-savvy-evaluation-consumers

Yarbrough, D.B., L.M. Shula, R.K. Hopson, and F.A. Caruthers. *The Program Evaluation Standards: A guide for evaluators and evaluation users* (3rd. ed). Thousand Oaks, CA: Corwin Press, 2010.

Zint, M. *My Environmental Education Evaluation Resource Assistant.* 2008. Retrieved from
http://www.meera.snre.umich.edu/.

4.1 Evaluation plan.

Develop and implement a plan that integrates evaluation (e.g., formative, process/implementation, outcome, impact evaluation) into key program stages. Determine who will conduct the evaluation (internal or external), the timeline, and how results will be documented and used. Tie evaluation phases to program goals and objectives and the program logic model or theory of change.

Indicators:

- Develop, up front and in cooperation with partners and collaborators, an evaluation plan appropriate for the program and its goals. Ask specialists in evaluation and assessment, learning theory, cultural competency, the environmental topics addressed by the program, environmental justice, and Traditional Ecological Knowledge to provide input into the evaluation plan, as appropriate.
- Integrate measurement of program outcomes and impacts into the evaluation process.
- Design assessment to be ongoing, tied to learning, and used as a tool for the instructor to plan, modify, and adapt teaching and learning. Assessment is integral to the instructional approach.
- Select program outputs, outcomes, and impacts (e.g., short-term, medium-range, and long-term) to be evaluated that are appropriate given overall program goals, objectives, and duration.
- Design the evaluation, including data collection and analysis strategies, to conform to accepted practices such as those detailed in the *Program Evaluation Standards*.
- Develop a plan for monitoring impacts on an ongoing basis, as appropriate for the scope of the program.
- Confirm that the evaluation will determine if the program addresses needs identified in the original self-assessment and front-end evaluation (Key Characteristic #1).
- Obtain Institutional Review Board (IRB) approval, as appropriate.[1]

[1]An Institutional Review Board is a group that has been formally designated to protect the rights and welfare of participants in research and evaluation studies.

DID YOU KNOW?

Key Considerations in Planning and Conducting an Evaluation

The following, by Carter McNamara, provides seven key questions to ask yourself when developing a program evaluation plan:

1. For what purposes is the evaluation being done, i.e., what do you want to be able to decide as a result of the evaluation?
2. Who are the audiences for the information from the evaluation, e.g., customers, bankers, funders, board, management, staff, customers, clients, etc.
3. What kind of information is needed to make the decision(s) you need to make and/or enlighten your intended audiences, e.g., information to really understand the process of the product or program (its inputs, activities and outputs), the customers or clients who experience the product or program, strengths and weaknesses of the product or program, benefits to customers or clients (outcomes), how the product or program failed and why, etc.
4. From what sources should the information be collected, e.g., employees, customers, clients, groups of customers or clients and employees together, program documentation, etc.
5. How can that information be collected in a reasonable fashion, e.g., questionnaires, interviews, examining documentation, observing customers or employees, conducting focus groups among customers or employees, etc.
6. When is the information needed (so, by when must it be collected)?
7. What resources are available to collect the information?

McNamara, C. *Basic Guide to Program Evaluation (Including Outcomes Evaluation)*. n.d. Retrieved from https://managementhelp.org/evaluation/program-evaluation-guide.htm

RESOURCES YOU CAN USE

Practitioner Guide to Assessing Connection to Nature

The *Practitioner Guide to Assessing Connection to Nature* provides environmental educators and others with a bank of vetted tools for measuring connections to nature. The guide provides background information and a decision tree to help practitioners choose an appropriate tool or approach given their needs, the length of their programs, and their audiences.

In the development of this guide, the authors reviewed a range of tools for measuring connections to nature and selected eleven that have appeared in the literature and have been tested for reliability and validity. In selecting tools for this guide, the authors chose ones that are easy to use and produce data that can be analyzed with commonly available software.

Each of the eleven tools includes essential background information describing what the tool measures, its format (e.g., interview, survey, journaling, drawing), how the tool has been used, and useful tips for employing the tool. In addition to providing a copy of the tool itself, the authors include suggestions for recording and analyzing data.

Salazar, G., K. Kunkle, and M.C. Monroe. *Practitioner Guide to Assessing Connection to Nature*. Washington, DC: North American Association for Environmental Education. 2020. Retrieved from https://cdn.naaee.org/sites/default/files/assessing_connection_to_nature.7.23.20.pdf

Additional Resources:

The Activation Lab. ACTAPP: *The Activation Lab Evaluation Toolkit.* 2019. Retrieved from http://activationlab.org/toolkit/

eeVAL. E*valuation Tools.* NAAEE. 2021. Retrieved from https://evaluation.naaee.org/tools
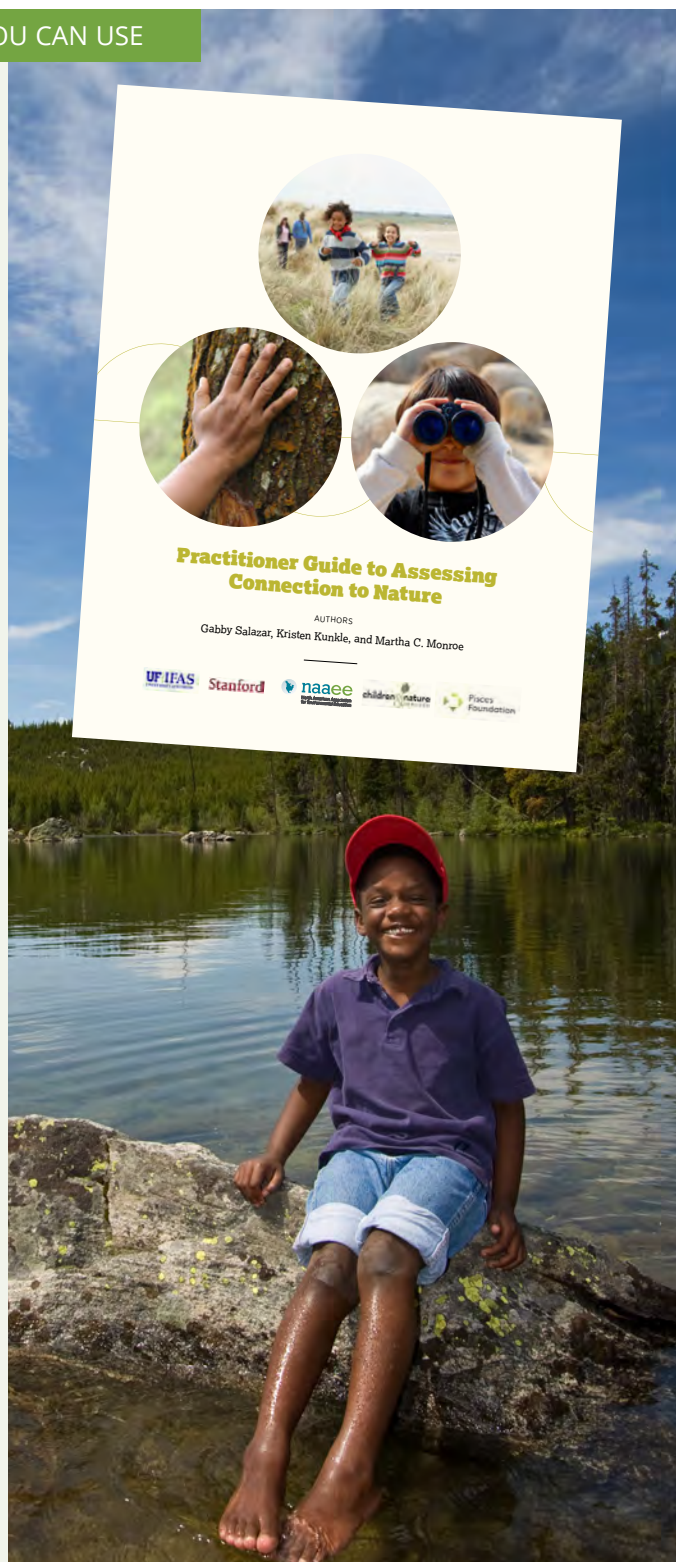
4.2 Evaluation strategies, techniques, and tools.

Design effective, culturally responsive, and developmentally appropriate evaluation strategies, techniques, and tools to measure program success. Link evaluation strategies and tools to specific program stages and evaluation goals. Pilot-test evaluation tools.

Indicators:
- Use evaluation strategies, techniques, and tools to measure the degree to which the program:
    – Contributes to overall environmental literacy
    – Meets stated goals, objectives, and learning outcome
    – Uses resources such as funds and supplies responsibly
    – Meets the needs of all learners
- Integrate assessment techniques and tools into the program early in the planning stages. Verify that assessment techniques for both content and skills are practical, efficient, meaningful, and appropriate. Develop scoring rubrics, as appropriate.
- Include evaluation strategies that capture and assess unanticipated outcomes.
- Use expected learner outcomes to develop performance-based assessments such as portfolios, open-ended questions, group or independent research, or other ways to indicate mastery, as appropriate.
- Ensure that evaluation strategies, techniques, and tools are culturally responsive and reflect the principles of equitable evaluation, accelerating progress towards equity and positioning equity at the center of evaluation efforts.
- Pilot-test evaluation tools and revise, if necessary.

4.3 Pilot test the program and revise.

Verify overall program effectiveness by pilot testing each component, including staff and volunteer training, educational materials, instructional strategies, and marketing. Confirm that instructional content and strategies meet program goals and objectives, including environmental literacy goals; are developmentally appropriate, linguistically responsive, and culturally relevant and responsive; and accommodate people with special needs, including those with differing physical abilities. Revise materials and strategies to improve effectiveness based on pilot test results.

Indicators:
- Pilot test instructional activities, materials, and strategies in the field with learners who represent the diversity of the target audience and under conditions like the intended use. Evaluate pilot test results in terms of the stated goals and objectives prior to wide-scale implementation.
- Include descriptions of learner demographics, implementation strategies, and the instructional setting when reporting pilot test results, as appropriate.
- Pilot test staff and volunteer training materials and strategies.
- Update, as needed, and implement the evaluation plan, based on pilot testing.
- Assemble or make readily available equipment, consumables, funds, and other tangible materials and online resources needed to conduct the program. Review and test items before they are needed for the program.
- Design pilot tests to determine the degree to which instructional materials and strategies are developmentally appropriate, culturally and linguistically responsive, and accommodate people with special needs, including those with differing physical abilities.
- Provide sufficient time and resources to analyze pilot test results and make appropriate program changes based on those results, including changes to staff and volunteer training, instructional materials and strategies, and marketing.

DID YOU KNOW?

Culturally Responsive Evaluation

Culturally responsive practices are not limited to instruction. According to Frierson, Hood, and Hughes (2002), an evaluation is culturally responsive if:

> ...it fully takes into account the culture of the program that is being evaluated. In other words, the evaluation is based on an examination of impacts through lenses in which the culture of the participants is considered an important factor, thus rejecting the notion that assessments must be objective and culture free if they are to be unbiased. Moreover, a culturally responsive evaluation attempts to fully describe and explain the context of the program or project being evaluated. Culturally responsive evaluators honor the cultural context in which an evaluation takes place by bringing needed, shared life experience and understandings to the evaluation tasks at hand.

Frierson, H.T., S. Hood, and G.B. Hughes. *"A Guide to Conducting Culturally Responsive Evaluation. Section IV: Strategies That Address Culturally Responsive Evaluation."* In National Science Foundation User-Friendly Handbook for Project Evaluation. 2002. Retrieved from https://www.nsf.gov/pubs/2002/nsf02057/nsf02057_5.pdf

Taking the notion a bit further, Dr. Arthur Hernandez suggests that practitioners and evaluators should consider the following when undertaking a culturally responsive evaluation:

- Aim to define culture within the context of the program. For example, it is crucial to get a sense of how students identify themselves, their aspirations, their capabilities, and their needs. All of these have an important bearing on the design of a program as well as the evaluation of it.
- Both program developers and evaluators need to take time to recognize their own values and sense of self. The values, expectations, and even biases, that we hold have the potential to influence how the program will be judged and measured.
- Have a sense of the purpose for the program and the evaluation. What issue is being addressed and why? Is it a strengths-based perspective? Who is being evaluated and for what purpose? What are the roles, relationships, and partnerships between key players such as evaluator(s), relevant stakeholders, community members, respondents, and participants in the program and evaluation?
- Be aware of and appreciative of the norms and language of a community. Never assume cultural responsiveness as a matter of cultural familiarity, heritage, or language. Never assume that experience in one culture and/or cultural context makes one an expert or knowledgeable about a culture or any other. Because you've done it before with a group that looks like, sounds like, or seems like the group you are working with now, that may not, in fact, be the case. Understanding that when it comes to language, there are elements and nuances which are not entirely translatable. How will language differences and nuances be addressed?
- Be aware of potential power differentials within the groups of people involved in the programming and in the evaluation. To what extent do these power differentials influence what is happening?
- Ask questions and share ideas! Communication is key. Sharing expectations, and investing the time to talk, can help to insure successful programs and evaluations....

NSF Includes. Practice Brief: Culturally Responsive Practices and Evaluation. 2019. Retrieved from https://www.includesnetwork.org/blogs/jenna-rush1/2020/03/06/commitment-to-culturally-responsive-evaluation-pri

DID YOU KNOW?

Culturally Responsive Evaluation

Additional Resources:

Centers for Disease Control and Prevention. *Practical Strategies for Culturally Competent Evaluation*. Atlanta, GA: US Department of Health and Human Services. 2014. Retrieved from https://www.cdc.gov/dhdsp/docs/cultural_competence_guide.pdf

Frechtling, J. *The 2002 User-Friendly Handbook for Project Evaluation.* National Science Foundation. 2002. Retrieved from https://www.nsf.gov/pubs/2002/nsf02057/nsf02057.pdf

Public Policy Associates, Inc. *Is My Evaluation Practice Culturally Responsive?* 2015. Retrieved from http://jordaninstituteforfamilies.org/wp-content/uploads/2018/06/Self-Assessment_6-pages.pdf

RESOURCES YOU CAN USE

eeVAL

eeVAL, sponsored by NAAEE, offers a series of web pages centered on increasing the capacity of the field of environmental education to produce and use quality, culturally responsive evaluation. The vision of this project is simple: improve environmental education through evaluation. According to the co-creators of eeVAL, a community of EE practitioners, evaluators, funders, and academics:

High quality evaluation practices drive excellence in programming. And to have program excellence, evaluation should be culturally responsive.... The eeVAL project offers a culturally responsive, equitable evaluation (CREE) framework, program models, and resources for individuals, organizations, and networks to create more just, inclusive, and healthy partnerships, programs, and communities. Such evaluation is essential to the continual improvement of environmental education—evaluation for learning and not simply reporting. CREE in EE can inform practice among educators, evaluators, communities, programs, and the field of environmental education generally.

eeVAL centers on a set of core values to guide evaluation efforts: collective evaluation, equity in motion, authentic engagement, deep curiosity, lifelong learning and critical reflection, and high-quality evaluation. In addition, a five-phase evaluation process is outlined. An evaluation tool section includes easy to access information on evaluation methods, tracking program metrics, how to share the story, process level evaluation and identifying outcomes. Various terms are defined in the glossary. Finally, a searchable tool library designed to help you select tools that are well-matched to your program and participants is provided.

The co-creators of eeVAL emphasize that it is a "living project" designed to evolve "as evaluation becomes more inclusive of the voices and experiences of persons who currently hold least power among us (e.g., youth, practitioners, non-degree holders, members of non-dominant cultural groups)."

For more information and to access these resources, visit: https://evaluation.naaee.org/

GUIDELINES IN PRACTICE

Photo: © Rocking the Boat

Rocking the Boat: Using Environmental Education to Promote Positive Youth Development

Rocking the Boat is a non-profit organization that provides positive youth development programs for 14–18-year old students in the South Bronx, New York City, United States. *Rocking the Boat* serves communities with high levels of poverty, historic disinvestment, and environmental injustice. *Rocking the Boat* engages teens in one of three youth development tracks—wooden boatbuilding, environmental science, or sailing—to enrich their experiences, help them advance their strengths and capacities, and provide psychological support during their formative years.

By building wooden boats, using them for ecosystem monitoring and environmental restoration of the Bronx River, and learning to sail in New York City waterways, students develop the technical, social, and emotional skills to succeed in their personal, academic, and professional lives. Each year, *Rocking the Boat* engages about 150 teens in its after-school, and summer youth development programs and another 3,500 community members through public outreach. By educating visiting school groups, offering weekend community rowing, birdwatching, and sailing programs, as well as other environmental and social events, *Rocking the Boat* recruits new participants, engages parents, and reconnects local communities with their natural environment.

Approach

Rocking the Boat's Youth Development Program works with high school students, beginning in the 9th grade, after school and during the summer through courses in one of three disciplines: wooden boatbuilding, environmental science, and sailing. In each program, students advance by semester through progressive levels of skills and responsibilities. By 11th or 12th grade, students who have mastered the requisite skills join an advanced job skills level in each of these programs as paid apprentices.

These apprentices tackle more complex projects, often collaborating with and accountable to outside partners. They assume increasing responsibility in running programs for the public and are supported with professional development training. The long-term nature of the projects and opportunities for advancement keep participants engaged and benefitting from a range of counseling services, academic coaching, and employment opportunities through high school and until they graduate from college or technical school.

<div style="text-align:center">GUIDELINES IN PRACTICE</div>

Rocking the Boat: Using Environmental Education to Promote Positive Youth Development

Outcomes

Rocking the Boat monitors the educational achievements among its alumni. The statistics demonstrate the program's success:

- 96% of *Rocking the Boat* students graduate from high school on time, as compared to the Bronx high school graduation rate of 72% (in 2018) and the national rate of 85% (2018).
- 97% of graduates enroll in college or technical schools immediately after high school.
- 57% of *Rocking the Boat* alumni have received their bachelor's degrees within six years of high school graduation.

Rocking the Boat students are self-selected and are not an exact reflection of the general population of Bronx high school students. That said, a great diversity of students with a wide range of academic achievement are attracted to *Rocking the Boat's* variety of programs and participants range from those barely succeeding in school to those at the top of their class.

Photo: © Rocking the Boat

Evaluation

Rocking the Boat has participated in multiple university-based studies related to students' identity, sense of place, and scientific literacy. For the past four years *Rocking the Boat* has used the Hello Insight youth development evaluation online survey (https://helloinsight.org), which is grounded in the latest research on social and emotional learning. Online surveys provided by Hello Insight have helped *Rocking the Boat* understand what kind of educational approaches and environments work best for their youth, which improvements to make, and how to communicate Rocking the Boat's unique impact.

Currently, *Rocking the Boat* is conducting pre-post surveys to collect multi-year evidence of its impact on the following students' capacities:

1. **Academic self-efficacy.** A young person's motivation and perceived mastery over school performance and their general sense of belief in their potential to attain success.
2. **Positive identity.** A young person's sense of who they are, their multiple identities, growing self-esteem, evolving self-definition, role formation, and achievements.
3. **Social skills.** The ability of a young person to take into account others' perspectives,
4. **Contribution.** Positive engagement with family, community, and society that is key to developing a young person's positive purpose and positive societal movement.
5. **Self-management.** The ability of a young person to regulate their emotions and behavior, take positive risks, and persist through life's challenges.
6. **Social capital.** The positive bonds young people have with other people and institutions such as schools, community centers, and youth-serving organizations.

<div style="text-align: center;">GUIDELINES IN PRACTICE</div>

Rocking the Boat: Using Environmental Education to Promote Positive Youth Development

Lessons Learned

After 20 years in operation, *Rocking the Boat* can share several lessons related to positive youth development, such as:

- *Rocking the Boat's* programs build on research and experiences showing that youth learn and develop best in an inviting, inclusive, warm, and compassionate environment.
- *Rocking the Boat* designs its programs primarily to advance youth development (as opposed to environmental knowledge or stewardship), which helped it to stay focused and achieve significant success in this area.
- Successful positive youth development programs allow students to discover a sense of their own power, self-esteem, efficacy, and awareness of opportunities for education and civic engagement—which enable them to improve their communities and their own lives.
- Educational projects that involve young people must create meaningful impacts on the world, and thus give teens a sense of purpose—which helps them to get through obstacles and work hard towards collective and personal goals.
- Partnering with scientific organizations with complementary environmental projects amplifies program impact. Rocking the Boat has collaborated with numerous local and regional private and governmental research and restoration organizations to provide real-world experience to students, while also furthering the organization's mission.

Adapted with permission from the Global Environmental Education Partnership (GEEP)[1] Case Studies. Russ, A. and A. Green. *Rocking the Boat: Using Environmental Education to Promote Positive Youth Development.* 2020. To read the full case study, visit: https://thegeep.org/learn/case-studies/rocking-boat-using-environmental-education-promote-positive-youth-development

[1]The GEEP is a partnership of the US Environmental Protection Agency, the Environmental Protection Administration of Taiwan, and the North American Association for Environmental Education. For more information, visit: www.thegeep.org
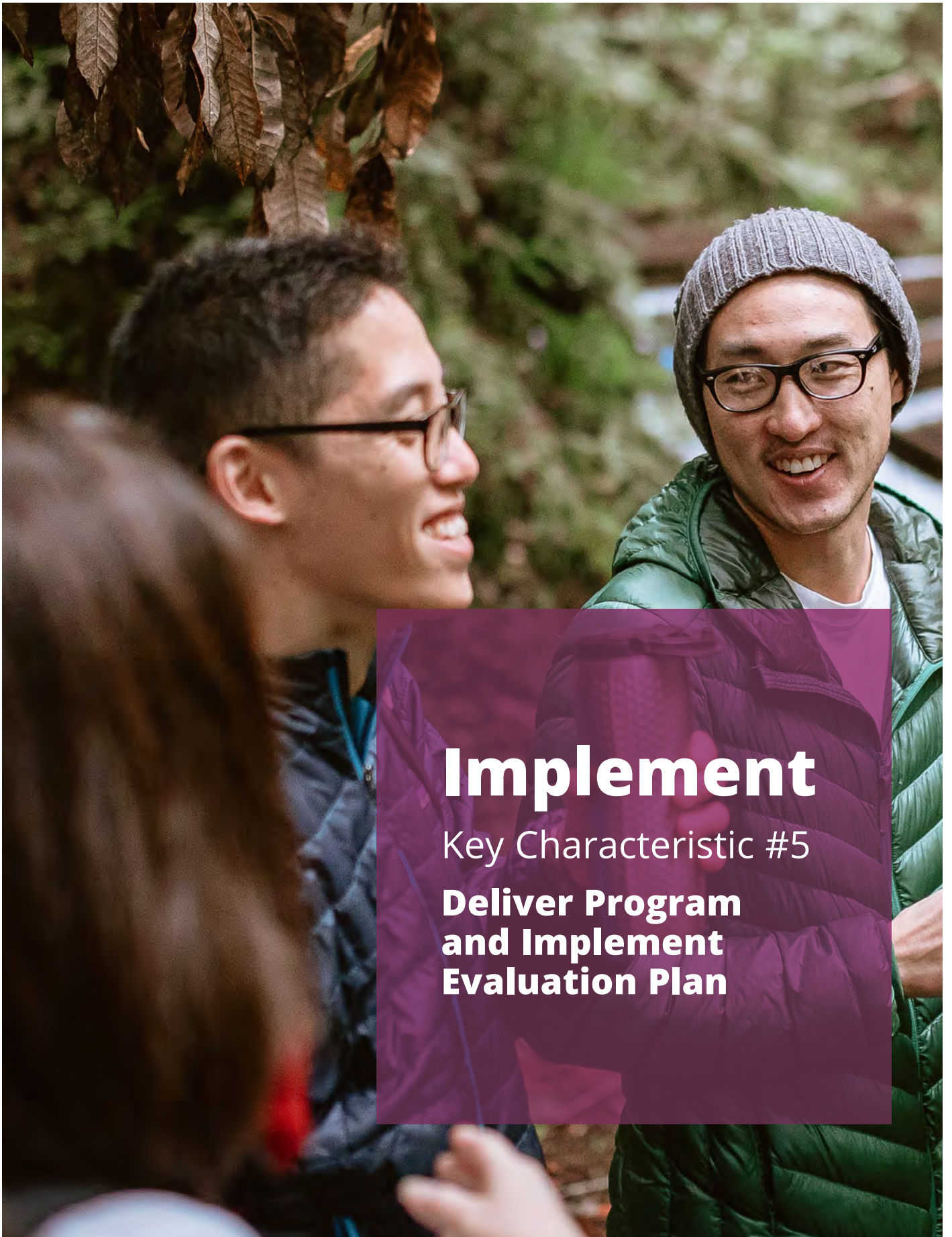

Photo: © Rocking the Boat

Photo: © Charles Berenguer

free community birding

Photo: © Rocking the Boat

Implement

Key Characteristic #5

Deliver Program and Implement Evaluation Plan

Implement

Key Characteristic #5
## Deliver Program and Implement Evaluation Plan

Deliver educational experiences that meet stated goals and objectives, including the development of environmental literacy. Provide a supportive, safe, culturally relevant, accessible, responsive, and welcoming learning environment. Implement the evaluation plan.

5.1 Instructional content

Deliver an instructional program that contributes to the understandings, skills, and dispositions (e.g., motivation, self-efficacy) associated with environmental literacy. Engage in culturally relevant and responsive open inquiry and investigation, especially when considering environmental issues that are controversial and require learners to reflect on their own and others' perspectives.

*Indicators***:**

- Confirm that learners use a broad range of skills, including those for exploring the environment, investigating different perspectives, decision-making, and addressing environmental challenges and opportunities.
- Engage learners in activities that develop the personal awareness and conceptual understandings needed for wise environmental decision-making and action.
- Promote a sense of personal and civic responsibility. Encourage learners to use their knowledge, skills, and assessments as a basis for environmental decision-making and action.
- Verify that instruction is accurate and inclusive in describing environmental conditions, concepts, attitudes, processes, challenges, and decisions, and in reflecting the diversity of perspectives on them.
- Ensure that content reflects current, accepted, and well-documented information from the sciences, social sciences, and other knowledge systems such as Traditional Ecological Knowledge.
- Present multiple perspectives on environmental concerns and questions, including those from different cultures, social and economic groups, identities, and traditions, as appropriate for the intended age level.
- Consider implications for environmental justice in investigations of environmental history, conditions, issues, decisions, and impacts.
- Give learners an opportunity to explore the world around them. Learners express an increased awareness of—and enthusiasm for—the natural and human designed environment.
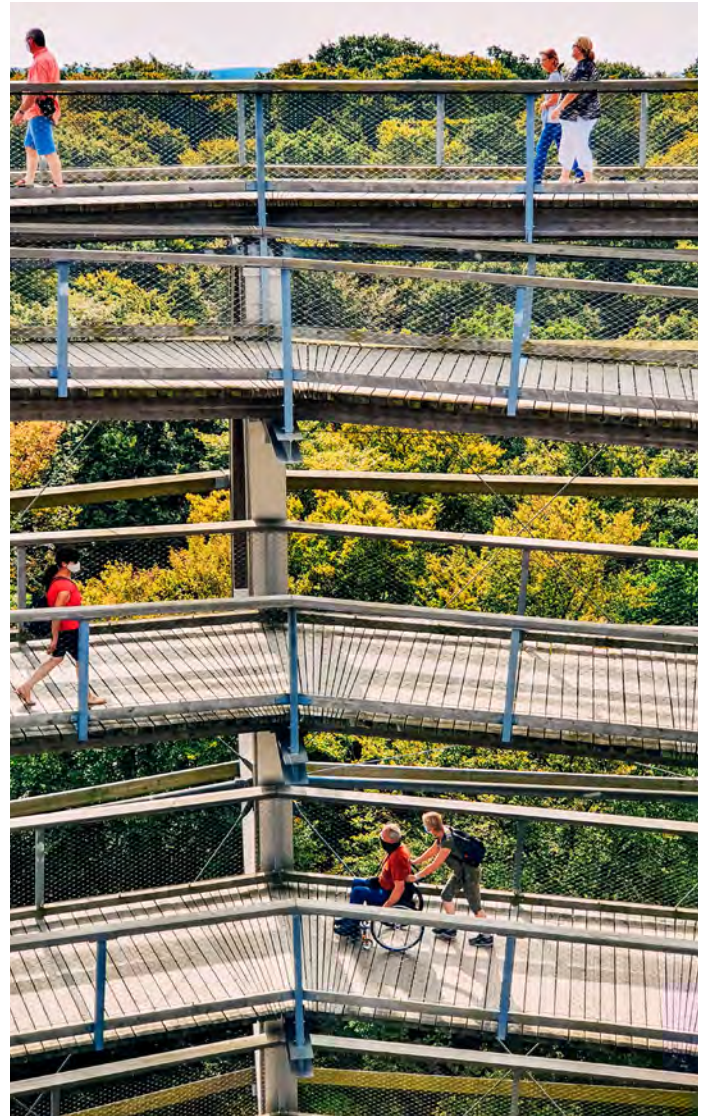
RESOURCES YOU CAN USE

Culturally Responsive Instruction Checklists

The following checklists are all designed to be used during instruction to gauge the degree to which lesson implementation fully addresses identified criteria and creates a culturally responsive learning environment.

Become, Inc. *Culturally Responsive Teaching Checklist.* 2017. Retrieved from http://www.fcsem.org/uploads/1/4/6/4/14649140/culturally_responsive_checklist_teachers.pdf

Coalition of Essential Schools. *CES Classroom Observation Tool.* 2015. Retrieved from http://essentialschools.org/wp-content/uploads/2015/01/Culturally_Responsive-ObservationTool.pdf

Educational Service Center of Northeast Ohio. *Culturally Responsive Observation Checklist.* Independence, OH. n.d. Retrieved from https://www.escneo.org/Downloads/EC%20-%20Culturally%20Responsive%20Observation%20Checklist.pdf

Hammond, Z. *A Quick and Easy School Visit Observation Guide.* n.d. Retrieved from https://crtandthebrain.com/wp-content/uploads/CRT-Walk-Through-Observation-Guide.pdf

Re-imagining Migration. *Culturally Responsive Teaching Checklist.* UCLA. 2019. Retrieved from https://reimaginingmigration.org/wp-content/uploads/2019/01/Culturally-Responsive-Teaching-Checklist_Re-Imagining-Migration.pdf

Staejr Femmer, D. and S. Snyder. *Culturally Responsive School Checklist and Goal Setting.* Unlocking English Learners' Potential: Strategies for Making Content Accessible. Thousand Oaks, CA: Corwin. 2017. Retrieved from https://getsupported.net/wp-content/uploads/Culturally_Responsive_Checklist_ELs.pdf

5.2 Learning climate.

Create a climate in which learners are engaged, intellectually stimulated, and motivated to learn about and explore the environment. Foster an instructional environment, including participant interactions, that is safe, inclusive, engaging, and conducive to learning.

Indicators:

- Use ice breakers and other team-building exercises to enhance communication, build trust, and get to know one another.
- Demonstrate a positive mindset and enthusiasm for teaching and learning about the environment.
- Support and encourage learner voice by offering different ways for learners to influence and make choices about the educational process, express themselves, provide leadership, collaborate, share their knowledge, make decisions, take responsibility for their own learning, and reflect.
- Stimulate learners intellectually. Learners express a desire to learn about the environment. They lead investigations, ask questions, explore different perspectives, seek and use observational and evidenced-based information, form their own points of view, and communicate their reasoning.
- Validate each learner's social identity (e.g., race, ethnicity, sexual orientation, gender identity, ability, class) as an asset. Ensure that language is inclusive.
- Present a range of differing viewpoints, ethical positions, and interpretations where there are differences of opinion or competing scientific explanations.
- Display enthusiasm, respect, care, fairness, and warmth, and support the social, emotional, and physical needs of the learners.
- Demonstrate a concern for the learners' physical and emotional safety, especially during experiences that are hands-on, take place outside, or relate to controversial issues and strongly held beliefs.

5.3 Flexible and responsive instruction.

Demonstrate flexibility and modify instructional plans and approaches to take advantage of unexpected opportunities, including learner questions. Respond to learners' interests and ways of knowing, adjust to meet learner needs, and address misunderstandings. Integrate assessment strategies into instruction and use results to improve learning.

Indicators:

- Address individual differences among learners.
- Anticipate learners' needs, including their physical, social, and emotional needs. Respond to learner needs appropriately.
- Take advantage of learner questions, interests, and different ways of knowing as well as unexpected opportunities (e.g., teachable moments).
- Provide facilities that are welcoming, accessible, and supportive of all participants. Make accommodations, remove barriers, and offer assistive technology/adaptive equipment that meets individual needs, as appropriate.
- Anticipate the need to adapt the lesson plan (e.g., size of group, changes in the weather, learner background), prepare alternatives, and implement those changes, as appropriate.
- Integrate learner assessments and feedback into lessons and use the results to adjust instruction in real time.

DID YOU KNOW?

Addressing Learner Needs: Differentiated Instruction and Universal Design for Learning (UDL)

Whether your students are 3 years old, 13 years old or 83 years old, instruction should meet their learning needs. Two educational approaches, differentiated instruction and Universal Design for Learning (UDL), can help you determine if the instruction you are delivering meets the needs of diverse learners.

Differentiated Instruction

… differentiated instruction is an approach whereby teachers adjust their curriculum and instruction to maximize the learning of all students: average learners, English language learners, struggling students, students with learning disabilities, and gifted and talented students. Differentiated instruction is not a single strategy but rather a framework that teachers can use to implement a variety of strategies, many of which are evidence-based. These evidence-based strategies include:

- Employing effective classroom management procedures
- Grouping students for instruction (especially students with significant learning problems)
- Assessing readiness
- Teaching to the student's zone of proximal development[1]

IRIS Center, Peabody College Vanderbilt University. *Differentiated Instruction: Maximizing the Learning of All Students.* 2020. Retrieved from https://iris.peabody.vanderbilt.edu/module/di/cresource/q1/p01/

Additional Resources:

ASCD. *Differentiated Is-Is Not Infographic*. 2015. Retrieved from http://www.ascd.org/ASCD/pdf/siteASCD/publications/Differentiation_Is-IsNot_infographic.pdf

IRIS Center, Peabody College Vanderbilt University. *Differentiated Instruction: Maximizing the Learning of All Students.* 2020. Retrieved from https://iris.peabody.vanderbilt.edu/module/di/cresource/q1/p01/

Sousa, D. A. and C. A. Tomlinson. *Differentiation and the Brain: How Neuroscience Supports the Learner-Friendly Classroom* (2nd edition). 2018. Alexandria, VA: ASCD.

Tomlinson, C.A. *How to Differentiate Instruction in Academically Diverse Classrooms*. 2017. Alexandria, VA: ASCD.

[1] The Zone of Proximal Development … is a concept developed by Soviet psychologist and social constructivist Lev Vygotsky (1896–1934). Vygotsky stated that a child follows an adult's example and gradually develops the ability to do certain tasks without help or assistance. Vygotsky's often-quoted definition of zone of proximal development presents itas "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers. Quoted from: Innovative Learning. Zone of Proximal Development, http://www.innovativelearning.com/educational_psychology/development/zone-of-proximal-development.html#:~:text=Vygotsky's%20often%2Dquoted%20definition%20of,in%20collaboration%20with%20more%20capable

DID YOU KNOW?

Addressing Learner Needs: Differentiated Instruction and Universal Design for Learning (UDL)

Universal Design for Learning

Universal Design for Learning (UDL) is a framework to guide the design of learning environments that are accessible and challenging for all. Ultimately, the goal of UDL is to support learners to become "expert learners" who are, each in their own way, purposeful and motivated, resourceful and knowledgeable, and strategic and goal driven. UDL aims to change the design of the environment rather than to change the learner. When environments are intentionally designed to reduce barriers, all learners can engage in rigorous, meaningful learning….

CAST. *Universal Design for Learning Guidelines* (Version 2.2). 2018. Retrieved from http://udlguidelines.cast.org

Key Questions to Consider When Planning Lessons

Think about how learners will engage with the lesson.
Does the lesson provide options that can help all learners:
- Regulate their own learning?
- Sustain efforts and motivation?
- Engage and interest all learners?

Think about how information is presented to learners.
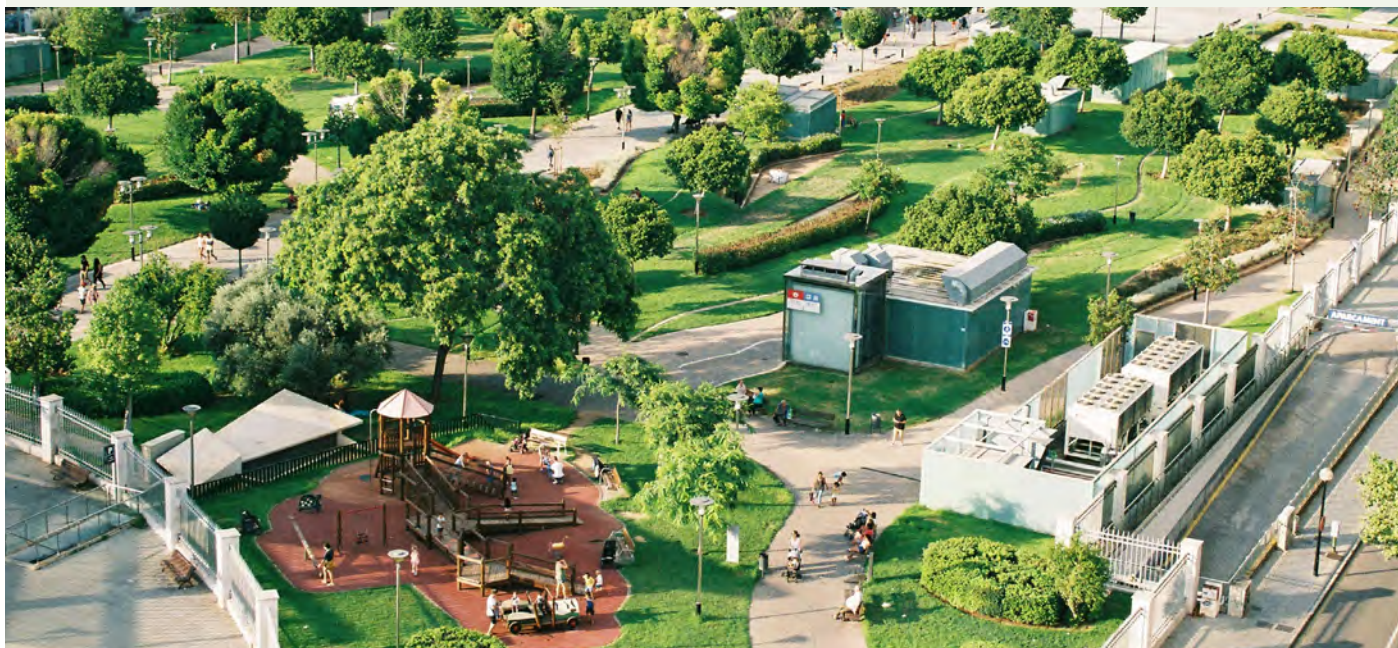Does the information provide options that help all learners:
- Reach higher levels of comprehension and understanding?
- Understand the symbols and expressions?
- Perceive what needs to be learned?

Think about how learners are expected to act strategically and express themselves.
Does the activity provide options that help all learners:
- Act strategically?
- Express themselves fluently?
- Physically respond?

Gordon, D., A. Meyer., and D. Rose. *Universal Design for Learning: Theory and Practice.* 2016. Wakefield, MA: CAST Professional Publishing. http://udltheorypractice.cast.org

DID YOU KNOW?

Addressing Learner Needs: Differentiated Instruction and Universal Design for Learning (UDL)

UDL Checklist

Take a moment to complete the following checklist, adapted from the Access Project at Colorado State University. Think about the delivery of your own lessons and the degree to which you address the Universal Design for Learning Guidelines:

Do you create a learning environment in which:

1. Ideas and information are represented in multiple ways?
- The program description clearly describes the content and expectations of the participants.
- Information is presented in multiple formats (e.g., lecture, text, graphics, audio, video, hands-on exercises).
- Each program begins with an outline of what will be covered.
- Key points are summarized throughout the program and tied to the larger program objectives.
- Handouts and reading assignments are posted in alternative formats such as audio and video.

2. Participants can express their comprehension in multiple ways?
- Participants demonstrate knowledge and skills in ways other than traditional tests and exams (e.g., written essays, projects, portfolios, journals).
- Assessments measure participants' achievement of the learning objectives.
- Technologies that facilitate class communication and participation are used.

3. Participants have multiple opportunities for engagement?
- Enthusiasm for each topic taught is expressed and its real-world significance explained.
- Participants are challenged with meaningful assignments and activities.
- Participant diversity is respected.
- Prompt and instructive feedback is given.
- Visual aids (e.g., photographs, videos, diagrams, interactive simulations) are provided….

Access. How *Do You Teach?* Colorado State University. 2010. Retrieved from https://durhamcollege.ca/cafe/wp-content/uploads/sites/5/2019/07/accessproject.colostate.edu_udl_documents_how_do_you_teach_checklist.pdf

Additional Resources:

Fisher, D. and N. Frey. Differences, Not Disabilities. *Educational Leadership.* 2017. Vol. 74, No. 7, pp 81-82.

Goalbook Toolkit. UDL-Aligned Strategies. 2021. Retrieved from https://goalbookapp.com/toolkit/v/strategies

5.4 Inclusion and collaboration.

Maximize learning by fostering an open, collaborative, inclusive, and equitable learning environment. Tailor instruction to meet the needs of, yet challenge, different learners, including people of different races, ethnic groups, cultures, sexual orientations and gender identities, abilities, ages, social groups, classes, language groups, and religious traditions.

*Indicators***:**

- Use people-first language by placing the person before the disability or difference (e.g., people with disabilities, not disabled people, people who are visually impaired, not visually impaired people).
- Respect different gender identities when using personal pronouns.
- Support all learners within the setting, including people with disabilities and those who are learning English.
- Recognize the cultural diversity of learners and celebrate it using music, literature, stories, language, food, contributors, the physical environment, histories, and current events.
- Respect learners as individuals with differing personal and family backgrounds, abilities, perspectives, and interests. Weave multiple perspectives, including learners' personal, family, and community and cultural norms, into the environmental education instruction.
- Organize instructional space to encourage collaboration and interaction among participants. Facilitate group work and collaboration and anticipate that groups will complete tasks at different rates.
- Connect instruction with the community and community concerns, reflecting different ways of knowing and different knowledge systems, such as Traditional Ecological Knowledge.
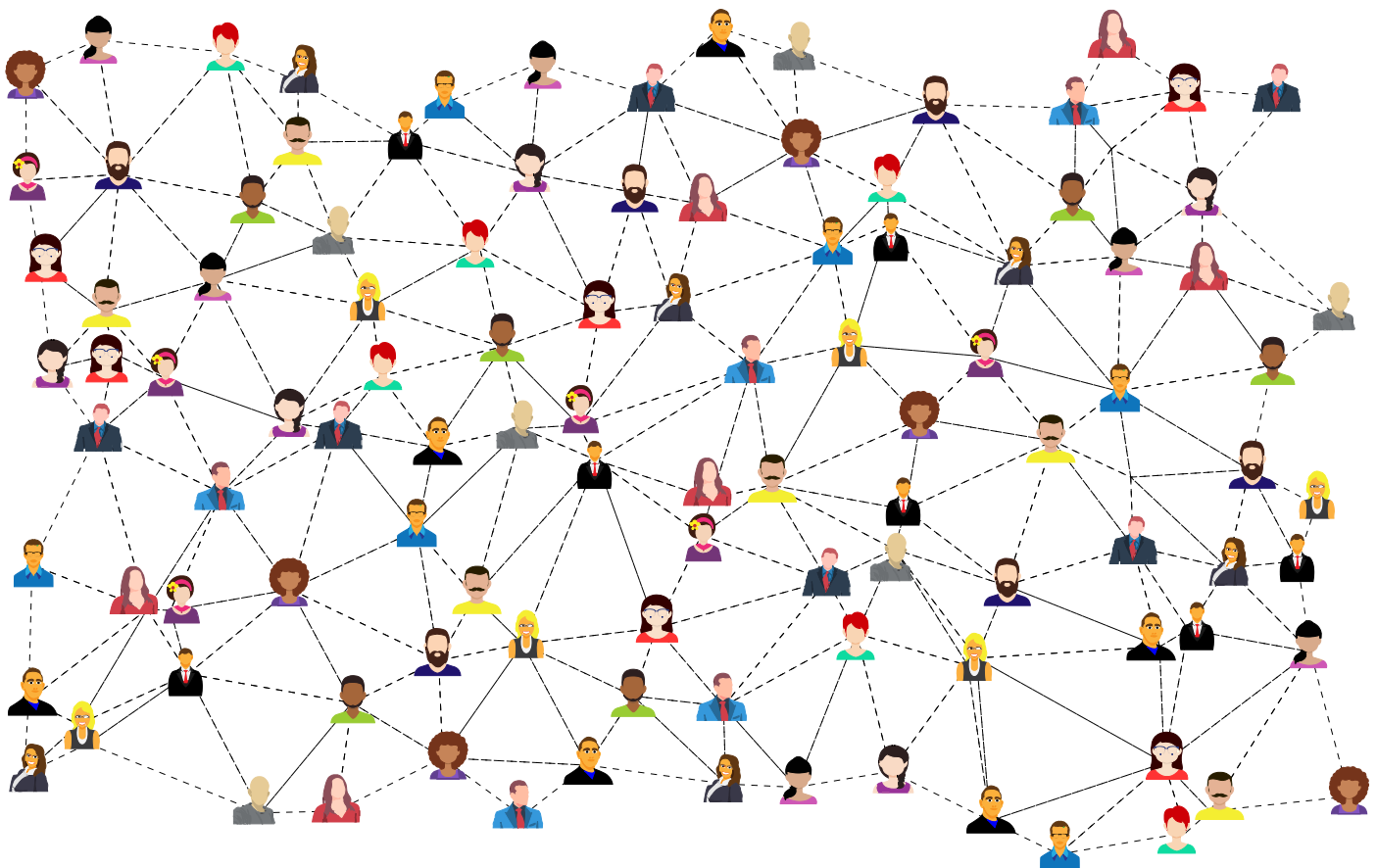
RESOURCES YOU CAN USE

Positive Learning Environment Observation Checklist

Assessing program delivery and instruction helps you and your staff gauge whether you are creating the desired learning environment. The following, adapted from You for Youth, provides an example of an observational checklist:

This checklist includes indicators of a positive learning environment across six program components: safety, interpersonal relationships, teaching and learning, learner engagement, staff interactions, and family and community engagement. ...The checklist can then be used as an observation tool to help identify challenges and areas of strength, reflect on findings, and set priorities as you seek to create a safe, supportive, welcoming space.

Safety
- Security procedures are implemented (e.g., securing entrances and exits, identifying visitors, taking attendance, monitoring participant movement).
- Program areas meet internal participant-to-adult ratio goals.
- Expectations for participant behavior and social interactions are clearly communicated orally as well as visually where all participants can see them (e.g., posted anchor charts, rules, or site guidelines).
- The environment appears safe and comfortable, with appropriate noise levels in each area.
- Students are included in program activities and are safe from verbal abuse and bullying from others.
- There are no visible safety hazards (e.g., unsecured rugs, cords or other tripping hazards, broken outlets).

Interpersonal Relationships
- Mutual respect is demonstrated for diverse needs and individual differences (e.g., gender, race, culture, ability).
- A staff member personally greets each participant at the door each day.
- Interactions among and between participants and others appear to be positive.

- Site staff have high expectations for participants' success, seem willing to listen to participants and get to know them as individuals, and exhibit concern for participants' challenges.
- Participant-to-participant relationships demonstrate friendships, teamwork, and positive one-on-one interactions.

Teaching and Learning
- The program area is clean, organized, and has adequate resources and materials.
- Program activities support participant character building and development skills (e.g., effective listening, conflict resolution, self-reflection, emotional regulation, empathy, personal responsibility, ethical decision making).
- Activities reflect alignment to the academic, social, emotional and physical needs of participants.
- Activities include enrichment experiences to help support program goals.
- Program staff regularly conduct assessments to ensure that necessary elements are in place to run the program effectively (e.g., barriers to effectiveness identified, staff training or curriculum in place, necessary tools and equipment present and in working condition).
- Program facilitators invite participants to explore and share problem-solving strategies (e.g., posing challenges that interest participants, asking probing questions, demonstrating enthusiasm for active participation, affirming participant effort).
- Program facilitators help participants make connections between program activities and their prior knowledge.
- Program staff use teaching practices that include at least some of the following: encouragement and constructive feedback, opportunities to demonstrate knowledge and skills, independent thinking, inquiry and dialogue.

RESOURCES YOU CAN USE

Positive Learning Environment Observation Checklist

Participant Engagement

- The program creates opportunities to acknowledge participant achievements, contributions and responsibilities (e.g., group presentations, reflections, exhibitions, performances, celebrations).
- Participants receive individual rewards, positive feedback, or verbal recognition for good behavior and/or successes.
- Participants have formal and informal opportunities to identify and express their emotions; as needed, they have opportunities to step away and process emotions before they re-engage.
- Participants consistently have opportunities to explain their perspectives.
- Participants have appropriate voice and choice in selecting and participating in activities.
- Participants regularly have opportunities to voice their concerns and to provide input on program improvement efforts.

Staff Interactions

- Staff members model positive interactions and respectful behavior with each other and with participants.
- Efforts to improve the program climate are discussed during regularly scheduled staff meetings and implemented as agreed.
- Staff members help to identify professional learning needs around creating a positive learning environment and attend professional learning events.
- Program leaders offer staff professional learning opportunities relevant to their duties.
- Staff members actively engage with youth and attempt to nurture a strong sense of community in the program.

Family and Community Engagement

- Program documentation and/or observation indicates that families and community members demonstrate they identify with the program (e.g., by using terms like "us" and "we" when referring to the program, by showing pride in being part of the program).
- Program documentation and/or observation indicates that families and community members show support for the program (e.g., by attending program events, sharing program information within the local community, participating in group activities, providing suggestions to program staff, leading program activities).
- Program documentation and/or observation indicates that families, community members and other stakeholders are invited to attend meetings to discuss partnership collaborations and program improvements.

You for Youth. *Positive Learning Environment Observation Checklist.* 2019. Retrieved from https://y4y.ed.gov/tools/positive-learning-environment-observation-checklist

Additional Resources:

The Avarna Group. *Instructor Bias Assessment.* Retrieved from https://theavarnagroup.com/wp-content/uploads/2017/04/Instructor-Bias-Self-Assessment.pdf

Causton, J. and K. MacLeod. *Building a Positive and Supportive Classroom* (Quick Reference Guide). Alexandria, VA: ASCD. 2020.

Waldman, C. *Four Elements for Creating a Positive Learning Environment.* Alliance for Excellent Education. 2016. Retrieved from https://all4ed.org/four-elements-for-creating-a-positive-learning-environment/

You for Youth. *Strategies for Creating a Positive Learning Environment.* 2019. Retrieved from https://y4y.ed.gov/tools/strategies-for-creating-a-positive-learning-environment

RESOURCES YOU CAN USE

Facilitating Group Discussions

The following questions, from the Harriet W. Sheridan Center for Teaching and Learning, can help you reflect on your preparation for and facilitation of group discussions:

Conducting the Discussion

Did I...

- Create an inclusive environment in which learners feel they can take risks?
- Do an initial assessment of the learners' levels of readiness?
- Initiate the discussion with an engaging, relevant topic or challenge?
- Use mainly open-ended questions or comments?
- Encourage active listening?
- Foster dialogue among the learners and help them to consider multiple points of view?
- Probe the learners' understandings and foster higher-level thinking and discussion?
- Help the learners digest what they are hearing?
- Monitor and facilitate the flow of the session?
- As needed, help the group reach a satisfactory closure?
- Encourage learners to participate:
    - Allow sufficient "wait-time" when learners or I ask questions?
    - Listen actively and non-judgmentally, and encourage learners to do likewise?
    - Use strategies for involving all the learners, including the quiet ones?
    - Keep the discussion from being dominated by a subset of learners?
    - Build what learners say into the discussion?
    - Make clear that my statements are open to further discussion?
- Help learners communicate clearly:
    - Model being patient and encourage learners to do likewise?
    - Ask for clarification and encourage learnersto do likewise?
    - Help learners reframe their ideas and comments, when needed?
    - Help learners focus or expand their ideas, as needed?

The Harriet W. Sheridan Center for Teaching and Learning. *Tips on Facilitating Effective Group Discussions*. Brown University. 2021. Retrieved from https://www.brown.edu/sheridan/teaching-learning-resources/teaching-resources/classroom-practices/learning-contexts/discussions/tips

5.5 Instructional methods.

Employ a range of interactive and participatory instructional methods and activities to meet instructional objectives, address different ways of knowing, and elicit learner thinking. Engage all learners by embracing cultural, linguistic, physical, and developmental differences. Make smooth transitions from one instructional method or activity to another. Work collaboratively with other instructors, adapting instructional approaches as needed to blend or complement instructional styles and meet shared goals.

Indicators:

• Encourage learners to explore different perspectives, form their own opinions, and explain their beliefs. Adapt instructional approaches to respond to the varying cultural perspectives present in the group of learners and use them as an educational resource.
• Demonstrate responsible, respectful, and reasoned behavior during instruction.
• Model the process of inquiry and the application of environmental investigations in instruction.
• Apply methods for presenting the environment or environmental issues in appropriate and engaging ways for learners of different ages, backgrounds, levels of knowledge, and developmental abilities.
• Accommodate different approaches to learning.
• Use instructional methods that are developmentally appropriate; support the learning objectives; and match time requirements, available resources, and the instructional setting.
• Confirm that instruction reflects community member involvement, community dynamics, and relevant policies.
• Link content to learners' immediate surroundings and experience, then expand learners' horizons as appropriate to larger environmental issues and contexts.

GUIDELINES IN PRACTICE

Watershed Chronicles—Adjusting Instruction During COVID-19 Center for Alaskan Coastal Studies: Kenai Watersheds

Written by Katie Gavenus

I remember the building enthusiasm during spring 2020, as the Center for Alaskan Coastal Studies, Kenai Watershed Forum, and Boys & Girls Clubs of the Kenai Peninsula prepared to begin a new partnership for meaningful watershed education.[1] Connecting the central and southern Kenai Peninsula, from headwaters to the ocean, this exciting watershed learning endeavor includes two environmental education and stewardship nonprofits, alongside the Nita M. Lowey 21st Century Community Learning Centers of the Boys & Girls Clubs of the Kenai Peninsula. One of the unique aspects of this new program is the diversity in habitats, different human communities, and overall geographic expanse it touches, with a focus on providing meaningful outdoor learning throughout the watersheds of the Kenai Peninsula. The place-based curriculum is especially exciting because it strives to bring together different knowledge, experiences, and perspectives of the watershed by including guest presenters and educators from local communities, tribes, conservation organizations, harvest groups, and scientific research.

Of course, the COVID-19 pandemic forced us to rethink how we provide meaningful watershed education experiences. When in-person school closed in 2020, and in-person summer programs had to be canceled, our partners at the Boys & Girls Clubs of the Kenai Peninsula rapidly pivoted their work to ensure that all participants in their clubs had access to necessities and enrichment activities for learning. Due to concerns about disparities in technology and internet access, as well as worries that students were experiencing "Zoom fatigue," the Boys & Girls Clubs of the Kenai Peninsula decided that virtual learning was not a good fit for them. Instead, they have created weekly take-home learning packets that were distributed alongside nutritious snacks for families. These packets were available in June and July 2020, and again starting in September 2020 as schools came back into session with a mix of in-person and distance learning. By the end of 2020, the Boys & Girls Clubs were sending out approximately 185 packets per week to participants in the 21st Century Community Learning Centers (CCLC) program. Participants range from kindergarten to high school, so the Boys & Girls Clubs staff have been individually curating each packet to best match the interests, needs, and developmental stage of each participant or family of participants!

[1] NAAEE, in partnership with the National Oceanic and Atmospheric Administration (NOAA) and supported by the U.S. Department of Education, awarded $2.45 million to 30 environmental education organizations that will partner with NOAA to provide enriching after school watershed-related STEM (science, technology, engineering, and mathematics) projects. These grants will support programming for a total of 100 local Nita M. Lowey 21st Century Community Learning Centers (21st CCLC) sites and their students, many of whom live in high-poverty and underserved areas.

GUIDELINES IN PRACTICE

Watershed Chronicles—Adjusting Instruction During COVID-19 Center for Alaskan Coastal Studies: Kenai Watersheds

Given this change, the Center for Alaskan Coastal Studies and Kenai Watershed Forum shifted our priorities for the grant's first year. As we develop activities, we keep two core questions in mind:

How can we best support the Boys and Girls Club staff without adding a significant additional burden? Their efforts to plan for and prepare weekly take-home learning kits are herculean, so our primary goal is to make it as straightforward as possible for them to incorporate watershed education components.

How can we best encourage participants to engage in multi-disciplinary, place-based, experiential learning about their watershed? This, as you can imagine, takes some real creativity when our only contact with the students comes through the take-home learning kits. Add the extra challenge of dark days and cold winter weather, and it almost seems insurmountable! To meet this challenge, educators have created activity instructions and materials that include outdoor exploration and nature observation, art-based activities, hands-on experiments, data collection, interviews with family members or friends, and innovative ways to use technology to connect. From solo spots to pH tests, map-making to documenting water usage, we've created a suite of thematic activities and materials that students can use to develop their understandings of watershed science and their relationships with the local watershed.
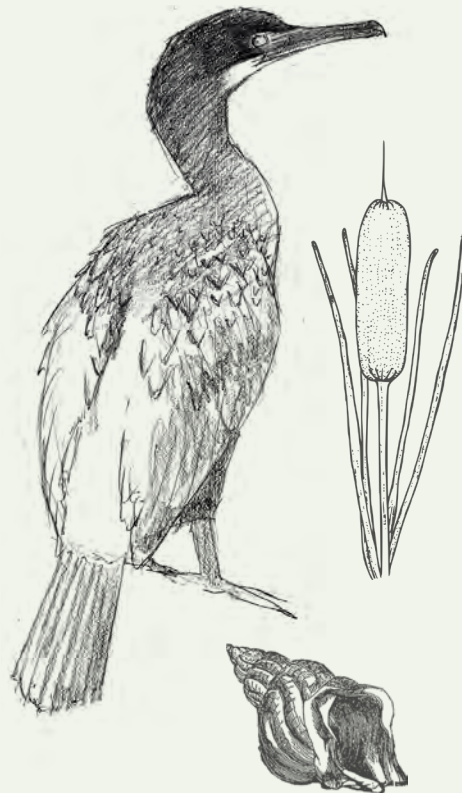
We included a postage-paid card in our first set of take-home materials introducing the topic of watersheds. Students were encouraged to paint or draw a favorite spot in their watershed on a pre-addressed card and mail it back to us. As we dove deeper, the materials focused on specific themes and investigations. For example, to explore the impacts of salinity in the watershed, we sent home seeds, salt, and other materials to test the effects of salt on seed germination and the freezing point of water. While we'd rather be tromping to the river with the kids, we've designed the activities to build curiosity about and connection to the watershed. We hope this will allow us to jump into deeper learning once we can meet in person in the watershed.

As we move forward, we are optimistic that we'll engage directly with participants in meaningful ways, if it is a good fit for the Boys & Girls Clubs. We're hoping to provide some optional online learning opportunities and in-person, socially distanced outdoor activities like snowshoeing on local lakes and water quality testing at the Kasilof and Kenai rivers. It has been a challenging year, but we are excited to be working with such a creative, flexible, and committed team of partners, making cool things possible!

Adapted with permission from eeBLUE Watershed Chronicles. Gavenus, K. Center for Alaskan Coastal Studies. 2021. To read the full case study and others in the series, visit: https://naaee.org/our-work/programs/eeblue/21CCLC

eeBLUE is a 5-year partnership between the NOAA Office of Education and NAAEE, dedicated to increasing environmental and science literacy among NOAA's partners and external networks. For more information about eeBLUE, visit: https://naaee.org/our-work/programs/eeblue

5.6 Implement evaluation.

Review the program logic model or theory of change, evaluation plan, and work plan. Make necessary adjustments to evaluation tools and data collection schedules. Implement the revised evaluation plan.

Indicators:

- Obtain informed consent from those participating in the evaluation, as appropriate. Participants understand what they are agreeing to do and voluntarily give their permission. Communicate the benefits of participation.
- Confirm the data collection schedule, including a review of what data collection tools are being used, what/who the source(s) of the data are (e.g., program participants, administrators, community members), who will collect the data, and when the data will be collected.
- Disseminate evaluation tools (e.g., surveys, tests), observation checklists, interview guides, and other data collection instruments to those collecting data.
- Collect, organize, log in, and store evaluation forms and other documents for data analysis. Implement protocols that ensure data security.
- Maintain consistency in how data is collected.
- As appropriate, ensure confidentiality or anonymity of evaluation participants.
- Provide opportunities for staff and volunteers to reflect and provide feedback on program implementation and instruction.
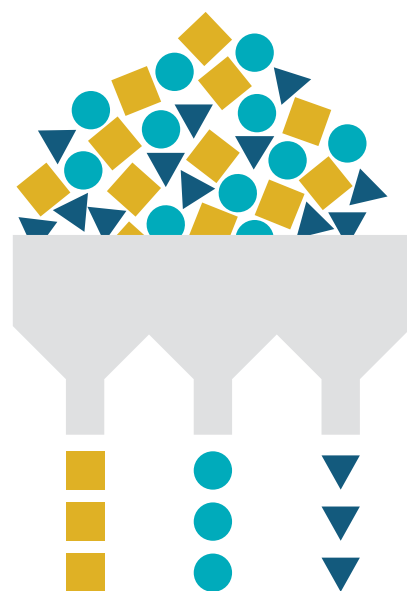
<div style="text-align:center">RESOURCES YOU CAN USE</div>

Implementing With Fidelity Guide

The following, adapted from You for Youth, provides a guide for evaluating the implementation of four key programmatic elements: adherence, dosage, engagement, and delivery. They argue that "mindfully implementing with fidelity enables you to evaluate each component of your activity and adapt and adjust instruction based on participant responses." Below are areas to measure for fidelity of implementation, along with a few key tools that will help.

What Do We Measure?

Adherence

Definition	*Example*
Focuses on how well you stick to the plan. Ask yourself: Are we implementing as we intended overall?	If you are using a service learning approach, do participants use academic knowledge and skills as they carry out the service project?

Dosage

Definition	*Example*
How often a participant attends an activity designed to have an impact. This looks at the frequency or the number of times they attend and how long they participate in each session.	If you've designed your activity to meet twice weekly for 60 minutes each session, you'll measure whether that is the actual dosage participants get.

Engagement

Definition	*Example*
Learners actively participating, asking questions, using critical thinking skills, getting positive feedback from instructors and solving problems in group discussions are a few ways to describe "engagement."	Learners work cooperatively, address the problem and brainstorm solutions. They are not preoccupied with something else or seem bored.

Delivery

Definition	*Example*
Refers to how the facilitator guides the learning. Is the facilitator effectively using guiding questions to help participants move to higher levels of thinking, embedding opportunities to apply new skills, or differentiating the learning	The facilitator poses guiding questions to help participants advance their learning, uses different teaching techniques such as scaffolding, and delivers content through blended learning opportunities.

Adapted with permission from: You for Youth. *Implementing with Fidelity Guide*. Continuous Education Through 21st Century CCLC Activities. 2017. Retrieved from https://y4y.ed.gov/tools/implementing-with-fidelity-guide

Implementing With Fidelity Guide

What Do We Measure With?

Observation Checklists

Conducting observations takes time, but it is the most reliable means of determining if the activity is being implemented with fidelity.

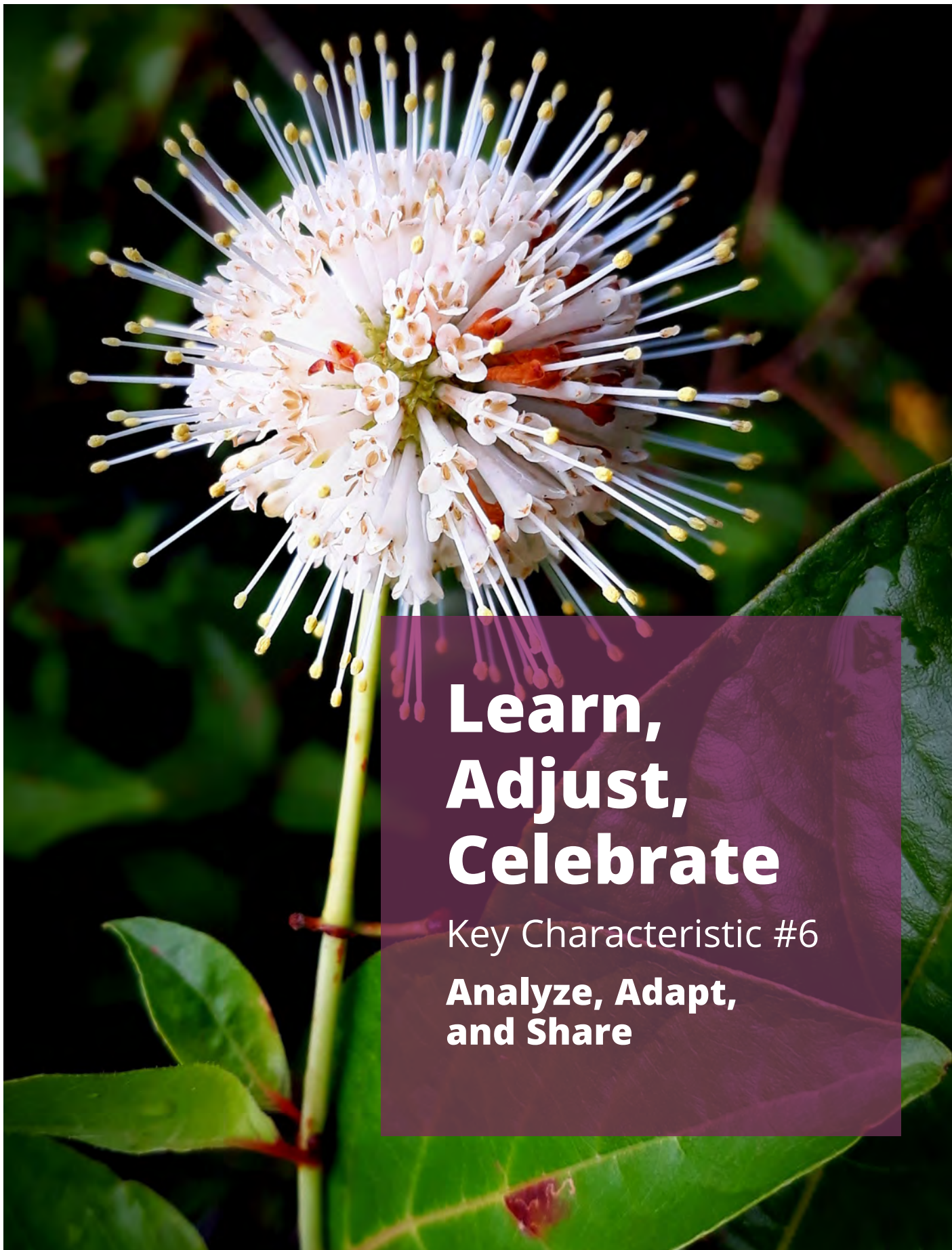| *Why use them?*	*What do they measure?*	*When should we use them?*
The most reliable way to tell if an activity is being implemented with fidelity is by **observing.**	Observations will measure the critical implementation areas. (adherence, dosage, engagement and delivery).	Use observation checklists when you make regular visits to the activity, do spot checks, conduct peer observations and provide follow-up coaching.

Rubrics

Rubrics define expectations and help ensure consistency in the evaluation process.

Why use them?	*What do they measure?*	*When should we use them?*
Rubrics are great tools for checking on the skills you want learners to develop as they define and measure performance in any type of program activity.	If an instructor uses a scale of 1 to 4 to measure the learner's performance toward completion of an activity, the rubric would detail what is needed to earn that 1, 2, 3 or 4.	Use rubrics for any of your activities! They are versatile and can be used for almost any aspect of an activity. Hint: Give the rubrics to learners before the activity so they know what they need to do to receive a high score.

Portfolios

Why use them?	*What do they measure?*	*When should we use them?*
Participant portfolios are often used to help learners demonstrate their thinking and development processes.	Portfolios can help you document learner progress toward activity objectives. You can capture answers to questions such as these: • Does the learner demonstrate an understanding of the content? • Do they collaborate? • Do they make progress toward the goal?	Portfolios are effective when the learners have multiple projects or deliverables within one activity. For example, if the activity requires a participant to write a story, develop a presentation and design a newsletter ad, a portfolio would be easy for the participant to keep organized and for the facilitator to see progress made.

Learn, Adjust, Celebrate

Key Characteristic #6

Analyze, Adapt, and Share

Environmental Education Programs: Guidelines For Excellence
Key Characteristics and Guidelines

Learn, Adjust, Celebrate

Key Characteristic #6
Analyze, Adapt, and Share

Take time to document, analyze, learn, and reflect. Examine evaluation results and consider what they mean in terms of how the program can be improved and whether it should be continued. If the program is ongoing, adjust the program, as necessary, and plan for its long-term sustainability. Celebrate successes, including partnerships, and share the results so others can learn from program efforts.

6.1 Evaluation results.

Analyze and document evaluation results. Monitor and document progress, showing successes and acknowledging areas needing improvement. Use evaluation findings throughout program stages to prompt modifications, ensure accountability and maximize effectiveness. Share evaluation results and implementation recommendations with staff, partners, stakeholders, and others.

Indicators:
- Specify, in advance, intended uses and dissemination methods of the information developed during the evaluation process.
- Review evaluation results to determine whether the needs of the participants, organization, partners, sponsors, and funders have been met. Provided feedback to program partners and the audience(s) involved so that learning is not unidirectional.
- Use evaluation results:
  - To help determine areas of strength and potential opportunities, how work has impacted the community, and how to function more effectively
  - To identify strengths and achievements to be celebrated, to identify areas needing attention or improvement, to help clarify issues and/or build consensus, to provide direction, and to inform group decision-making
  - To promote the program with community groups, to increase understanding of the organization's work, to communicate within one's own agency or organization, to use in funding requests, to build group visibility, and to recruit other participants.
- Ensure that staff can speak knowledgeably about evaluation results.
- Include measurements of the efficiency and effectiveness of staff, instructors, and volunteers in the evaluation.
- Include attempts to measure the overall impact of the program and document numbers served in the evaluation.
- Make recommendations for program revision and improvement.

GUIDELINES IN PRACTICE

Community Voices, Informed Choices: Indian River Lagoon

Written By Carol Roberts and Mandy Baily

Community Voices, Informed Choices (CIVIC) brings together the expertise for working with communities of Florida Agricultural and Mechanical University (FAMU) and the University of Florida (UF), both land grant universities. A community-based statewide effort, CIVIC facilitates opportunities for people to work collectively to craft realistic solutions to community challenges. CIVIC programs provide science-based information through platforms that engage discussion, share perspectives, and create momentum to address concerns.

In December 2020, CIVIC team members met virtually with community members from Fort Pierce, Florida for a deliberative forum focusing on water quality issues related to the Indian River Lagoon. Community members throughout the area rely on the Indian River Lagoon for subsistence and recreation. However, once a vibrant estuary along the east coast of Florida hosting thousands of different species of marine life, the Indian River Lagoon has been damaged by pollutants to a point that habitats for manatees and other marine life, wild birds, and plant life are nearly impossible to sustain.

Forum attendees included a candidate for city commission, a brewery owner from the next city to the north, a local pastor, and the leader of the local Black Chamber of Commerce among others. Participation from representatives of the historically black community of Fort Pierce was especially appreciated as it had been difficult to form partnerships with members of that community in the past. An influencing factor for participation might have been CIVIC's partnership between the University of Florida (UF) and Florida A&M University (FAMU). Several of the participants graduated from FAMU, a historically Black college.

As discussion ensued and perspectives were shared during the forum, it became clear that participants came with different agendas. At one point in the discussion, the city commission candidate realized that his concerns focused on water quality issues faced by those in his community who relied on fishing for their subsistence. This was very different from that of the brewery owner whose major concern was the cleanliness of the water for recreation and tourism. The commissioner raised questions about access, relaying a story of a subsistence fisher who was recently killed while fishing from a railroad bridge over a Lagoon tributary. The brewery owner expressed a concern for access to convenient kayak launches. Everyone in the virtual room was surprised and perhaps relieved when the brewery owner realized, "People are eating the fish they catch in those canals? That's not safe!"

GUIDELINES IN PRACTICE

Community Voices, Informed Choices: Indian River Lagoon

Having started the process of developing a common understanding of the issue, the group determined that before holding more deliberative forums on this topic, it was important to find out which waterways were being tested and what those results indicated. To that end, CIVIC worked with the community and recruited staff from the Ocean Research Conservation Alliance (ORCA) to organize a youth fishing event. Youth participants could catch fish from specific waterways for ORCA to test as part of their ongoing fish monitoring program.

As the group continued to work out details, plans changed. Instead of fishing the tributaries, the team decided it was easier for youth to catch fish directly from the Indian River Lagoon. The venue was relocated. Since the caught fish were needed for testing, a trade was set up. Community feedback made it clear that the youth families would be unlikely to clean and cook a single fish even if those caught were traded for farm-raised fish, so the youth could trade their catch for a freshly cooked, farm-raised tilapia fish sandwich or a hot dog.

On the day of the event, the community offered an informative and fun experience for local youth who were each given a new fishing pole and tackle box to take home. Despite rainy weather, twelve "keepers" were caught and donated to ORCA for testing. Thirty-five youth learned fishing skills and waterway protection methods they can carry with them into adulthood. More than $2,000 in equipment and supplies was donated and most donors indicated a desire to contribute again for such as worthwhile event. In the end, however, the community leaders who suggested the need for the event did not participate in any way.

To improve upon engagement methods, reflect on participant feedback, and consider the variables involved in creating change in communities throughout Florida, a CIVIC team member interviewed five of the six participants from the October 2020 deliberative discussion. Although respondents were unanimous in their positive feedback about the opportunity to engage with others and learn new perspectives on this topic, they raised questions about who was invited to join the group and the ultimate goal of CIVIC-sponsored dialogue forums. Participants expressed a sense of confusion about their roles and what they might be expected to do post-forum. They wanted to know how to plan further engagement in their community. They said that although the forum is a "great platform to learn from one another and assess issues together," they were left pondering the end goal of the dialogue if no one picks up the task or takes the lead. On a positive note, one respondent wondered whether deliberative dialogues might broaden the scope of perspectives, creating a snowball effect that brings in others, potentially community leaders, to participate in creating next steps encouraging "cross-pollination."

These interviews confirm that CIVIC's deliberative dialogue forums provide a method of community engagement that has the capacity to promote new relationships among community members, offer new understandings or perspectives on issues, and motivate participants to take actionable steps of improving their community. The CIVIC deliberative forum and subsequent youth fishing clinic were successful in raising awareness of water quality issues related to the Indian River Lagoon with adult and youth audiences. But more needs to be done. It will be important to identify why community participation lagged and where efforts to improve these relationships can be bolstered.

For more information about CIVIC, visit https://programs.ifas.ufl.edu/civic/

Additional Resources:
Kettering Foundation, https://www.kettering.org/
National Issues Forums Institute, https://www.nifi.org/
Environmental Issues Forums, https://naaee.org/our-work/programs/environmental-issues-forums

Post-Implementation Reviews: Making Sure That What You Delivered Actually Worked

Your program is over. The participants have all gone home, staff and volunteers have been thanked, and equipment and meeting areas have been cleaned. It's time to pat yourselves on the back and move on to your next project, right? Not exactly. Conducting a post-implementation review (PIR) will help you reflect on what you accomplished, think about lessons learned, and make improvements in future programs. During your review, you will want to ask yourself:

- Did we accomplish what we set out to accomplish?
- Did we meet our goals and objectives?
- How satisfied were our partners and stakeholders?
- Did we stay within budget?
- How can we extend the benefits of the program into the future?
- What lessons did we learn?
- How are we going to communicate our learnings to others?

Mind Tools (2018) provides an overview of the benefits of conducting a post-implementation review as well as the following useful tips:

When to Review

A good time to start thinking about the Post Implementation Review is when members of the project team remember the most—shortly after the project has been delivered. Start to list ideas and observations while they are still fresh in people's minds.

However, to adequately assess the quality of the implementation and complete this process, you'll need to wait long enough for the changes caused by the project to truly take effect.

What to Review

Here are some tips for conducting the PIR:

- **Ask for openness**—Emphasize the importance of being open and honest in your assessment, and make sure that people aren't in any way punished for being open.
- **Be objective**—Describe what has happened in objective terms, and then focus on improvements.
- **Document success**—Document practices and procedures that led to project successes, and make recommendations for applying them to similar future projects.
- **Look with hindsight**—Pay attention to the "unknowns" (now known!) that may have increased implementation risks. Develop a way of looking out for these in future projects.
- **Be future-focused**—Remember, the purpose is to focus on the future, not to assign blame for what happened in the past. This is not the time to focus on any one person or team.
- **Look at both positives and negatives**—Identify positive as well as negative lessons....

Mind Tools. *Post-Implementation Reviews: Making Sure That What You Delivered Actually Works.* 2018. Retrieved from https://www.mindtools.com/pages/article/newPPM_74.htm

Additional Resources:

Australian National University. *Post Implementation Review.* n.d. Retrieved from https://services.anu.edu.au/planning-governance/project-management-framework/post-implementation-review

ProjectManagement.com. *Project Post-implementation Review Checklist.* 2021. Retrieved from https://www.projectmanagement.com/contentPages/checklist.cfm?ID=232352&thisPageURL=/checklists/232352/Project-Post-Implementation-Review-Checklist#_=_

University of Western Sydney. *Post Implementation Review.* n.d. Retrieved from https://www.uws.edu.au/__data/assets/word_doc/0006/113955/Post_Implementation_Review.doc

6.2 Plan for long-term sustainability.

Adjust plans, as necessary, for the ongoing implementation of the program based on evaluation findings and input from collaborators, partners, and others. As appropriate, determine if the program should be continued or discontinued. For continuing programs, make a long-term commitment to program sustainability, including ongoing access to funding and other resources, investment in relationship-building with partners, stakeholders, community members, and others, opportunities for professional development for staff and volunteers, and continued implementation of the evaluation plan.

*Indicators***:**

- Document how the program contributes to comprehensive environmental education in the local area, state/province, and region.
- Verify that evaluation results indicate that the program's goals and objectives are valid and appropriate for the entire length of the program cycle. If not, revise program components appropriately.
- Implement a long-term funding strategy for the program that details how the program will be continued after initial funding is exhausted. Incorporate alternatives such as fees for services and charging for materials, as appropriate.
- Include partnerships and other "ownership" possibilities in strategies for sustaining the program.
- Compile accurate records, including program goals, objectives, content, participants, training, resources, work plan, budget, and evaluation results, and keep them for the organization's institutional memory.
- Use evaluation results to document successes and consider opportunities for growth.

RESOURCES YOU CAN USE

Creating Your Program Sustainability Plan

The following, adapted from You for Youth (2018), outlines key questions and strategies for creating a comprehensive program sustainability plan:

Before you create your plan, identify your program's key elements and the ways in which they contribute to the program's overall strength. Determine which elements are essential, which parts are great but not integral, and which areas you'd like to expand if additional funding is secured. You may find it helpful to use a logic model to do this. In addition, these questions can help you focus on your program's key elements and essentials.

Key Questions for Initial Program Sustainability Planning
- How many learners do you currently serve?
- How many family members do you currently serve?
- What are your program's vision, mission, and goals?
- What are the main components of your program?
- What program elements are solely funded by a grant? (staff salaries and benefits, recreational materials, curricular materials, etc.)
- What parts of your program can be sustained without grant funding? (snacks supplied by the USDA program, pencils supplied by the school, in-kind craft donations, etc.)
- Which partnerships can potentially assist you in sustaining your program? (recreational partner is part of a national organization and may be a source of funding, etc.)
- Who will be on your sustainability planning team? Consider which staff, partners, planning team members and volunteers have relevant expertise.

RESOURCES YOU CAN USE

Creating Your Program Sustainability Plan

Building a Program Sustainability Plan

Once you have answered some of the introductory questions, identify team members to help you plan. Start with your program planning team but think about engaging other stakeholders specifically for your sustainability planning team. Consider who is vested in the success and continuation of your program, such as community partners, families, and others who are passionate about your program.

Once you form your sustainability team, start to meet and begin building a sustainability plan. Be sure to assign action items to each team member and regularly review progress toward goals during future meetings.

1. Program Sustainability Goals

Everyone on your sustainability team should share the same vision and agree on what you are trying to sustain. Work together to determine what the key elements of your current program are, which pieces are vital to sustain, and which pieces you would like to sustain but could continue without. It can be overwhelming to think about how to sustain a large, multifaceted program, so break it into components and approach each component individually. Use these key questions to start the conversation with your team. Be sure to take time to address important action steps that result from these conversations.

Key Questions
- What is your vision for your program?
- What are the key elements of your program?
- What must you sustain for your program to be viable?
- Ideally, what would you like to sustain?
- What sustainability SMARTIE goals do you want to establish?
- How will you measure progress toward a viable plan?

2. Financial Plan

Now that you know exactly what you want to sustain, calculate how much funding you need. To understand program costs, look across multiple years (if available) to get the clearest picture of expenses. Also, include expenses such as personnel benefits, facility fees and training, not just payroll and supplies. Once you have the full program cost, break out the costs for key components. Remember, you are creating a plan to address each component, so you need to know exactly what you need to sustain each component. At the same time, document any additional monetary or in-kind resources and determine whether this support will continue after your funding ends.

Key Questions
- How much does your program cost?
- How much does each key component of your program cost?
- How much will it cost to accomplish your sustainability goals?
- What resources do you currently have?
- What additional resources do you need?
- How do you access those funding sources?
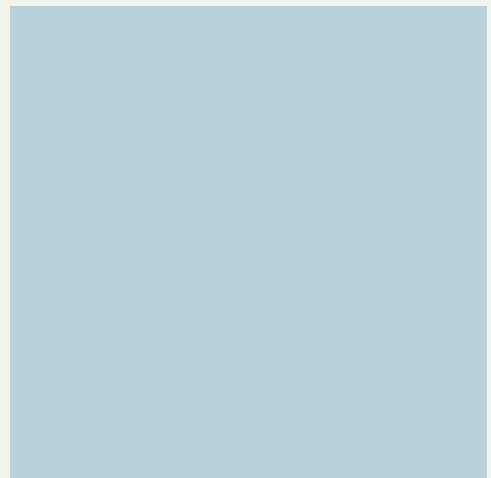
RESOURCES YOU CAN USE

Creating Your Program Sustainability Plan

3. Capacity Building

Now you can determine how best to accomplish sustainability. No one strategy or method will solve the complex puzzle of sustainability, so your team will need to determine the best combination of strategies to achieve your goals. In this step, you will begin exploring funding options, community support and champions, and your organizational capacity. Make this an ongoing activity as you determine the building blocks of your sustainability plan. Think about each program component and consider which strategy would work best to sustain it.

Use the next key questions to begin targeting each component individually. Use the Strengths, Opportunities, Aspirations, Results (SOAR) Analysis to ensure you explore all angles and possible hurdles to success. Be sure to take time to document your next action steps, as they will be vital to your sustainability success.

Key Questions

- What resources related to community support, key champions, and organizational capacity do you need to accomplish your sustainability goals?
- What resources do you already have?
- What funding sources exist that match your program or one of its components?
- Consider federal funding, state funding, local funding, private foundations and organizations, and in-kind contributions.
- What are your program's strengths, opportunities, aspirations, and results?
- How can you build organizational capacity to leverage and address these?

4. Long-Range Strategic Planning

To achieve program sustainability, look at your program with a long-range lens. Think about what you will need to do throughout your current funding cycle to set your program up for success, and what you will need to do beyond this funding cycle to ensure continued success. Approach each year with a planning focus to make progress and stay on track for program sustainability.

As you launch your program, focus on planning. You will spend much of your time developing your high-quality program. At the same time, work with your sustainability planning team to research available funding sources, map your assets, and begin your plan for the next several years. Continue to build relationships with the community and your partners to ensure that they buy into your program vision and mission. Build relationships by highlighting the many ways your program benefits the community, and drawing connections between other organizations' visions and your vision. Recruit community members and partners onto your sustainability planning team. Move toward connecting with new funding sources as you prepare for possible future funding reductions. Your sustainability team will be integral, and you may want to identify a subcommittee that can focus solely on identifying and securing new funds.

RESOURCES YOU CAN USE

Creating Your Program Sustainability Plan

Many programs experience funding reductions after the initial implementation phase. To maintain your established level of programming, you will want to make up for the reductions. Determine where you can make cuts without greatly disrupting programming, and know which additional or increased funding sources you have available.

Your sustainability team should begin applying for funds or approaching new funding sources. This is a perfect time to build new, mutually beneficial partner relationships, formalize agreements with partners and any available local supports, and line up additional funding opportunities. Your team should finalize the sustainability plan, which includes determining what program components can be sustained at this time.

Your sustainability plan should be an ongoing, working document that always looks five years ahead. Maintain planning momentum and keep your program sustained!

You for Youth. *Creating Your Sustainability Plan*. 2018. Retrieved from https://y4y.ed.gov/tools/creating-your-sustainability-plan

RESOURCES YOU CAN USE

Interpreting Evaluation Results

You conducted a program evaluation as planned, gathering the appropriate data and analyzing it. As part of the process, you compared the evaluation results to your program goals and expected outcomes. Now, you must make sense of what you found. The following, from the W.K. Kellogg Foundation, offers a series of questions to ask yourself as you interpret the results:

- Did any of the patterns and themes surprise you?
- What are the factors that might explain the deviations?
- If you collected both quantitative and qualitative data, do the qualitative findings support the quantitative findings? If not, what are the factors that could explain the differences (e.g., sampling, the way the questions were asked in the survey compared to the interviews, etc.)?
- Do any interesting stories emerge from the responses?
- Do the results suggest any recommendations for improving the program?
- Do the results lead to additional questions about the program? Do they suggest additional data could be needed?
- Do you need to change the way the data are collected next time?

Be thoughtful when you are making sense of the data. Don't rush to conclusions or make assumptions about what your participants meant to say. Involving other people (e.g., program staff) or working with your evaluator to discuss what the findings mean will help you make sense of the data.

W.K. Kellogg Foundation. *The Step-by-Step Guide to Evaluation: How to Become Savvy Evaluation Consumers.* 2017. Retrieved from https://www.wkkf.org/resource-directory/resources/2017/11/the-step-by-step-guide-to-evaluation--how-to-become-savvy-evaluation-consumers

6.3 Share learnings.

Celebrate progress, embrace learnings, and share results with program staff, administrators, collaborators and partners, community members, the environmental education community, and other stakeholders. Use opportunities to share learnings to strengthen essential relationships.

Indicators:

• Plan systematic activities to communicate program learnings, including evaluation results and recommendations, with the larger environmental education community so that successes, challenges, and unintended outcomes can be used as learning tools by others.

• Build in opportunities to celebrate progress, relationships, and contributions made by program staff, collaborators, partners and community members.

• Recognize achievements and contributions of staff, volunteers, collaborators, and partners at key points throughout program planning and implementation. Provide letters of recognition or certificates of appreciation as appropriate.

• Use a broad range of media and other communications techniques to continuously nurture relationships with collaborators, partners, and community members.

• Tell the story of your program, including critical collaborations and partnerships.

RESOURCES YOU CAN USE

Summarizing Evaluation Findings

The following, from the W.K. Kellogg Foundation, offers guidance on summarizing and communicating your evaluation results:

You can use many strategies to summarize and communicate your findings. Sometimes, you could have much more data than you can possibly share effectively. Therefore, you should begin by asking the following questions before putting the findings together:

- Are you required to submit an evaluation report to the funder about the results and impact of the strategy, initiative, or program?
- What are the reporting requirements (where and when the report is due, questions to be answered, sections that must be included, page limitations, inclusion of graphs and tables, etc.)?
- Who else needs to know the results and impact of the effort and why?
- Do you want to inform them about their investments, give them tools to make decisions, encourage support for the effort, or inform them for other reasons?
- Depending on why they're being informed, which aspects of the results and impact could be particularly interesting to them?
- When is the best time to share the findings and impact with the intended audience?
- How much does each intended audience know about the effort?

- How interactive do you want the communication to be for each intended audience? For example, written and print materials are least interactive while discussions and working sessions are most interactive. Verbal and video presentations fall somewhere in the middle.
- What are the risks in sharing findings that could lead to bad consequences for your organization and the community you serve?
- Can the findings be taken out of context and harm the organization or community?
- What can you do to mitigate the risks and consequences?
- What roles do you, your staff, your board members, and your internal or external evaluator have in summarizing and communicating the findings and insights?
- Who are the most effective messengers for the information?
- Do you need a facilitator skilled in adult learning techniques to assist with discussions, working sessions and verbal presentations?

Your answers to these questions will help determine the content and format for summarizing and communicating the results and impact of the program.

W.K. Kellogg Foundation. *The Step-by-Step Guide to Evaluation: How to Become Savvy Evaluation Consumers.* 2017. Retrieved from https://www.wkkf.org/resource-directory/resources/2017/11/the-step-by-step-guide-to-evaluation--how-to-become-savvy-evaluation-consumers

The National Project for Excellence in Environmental Education

The North American Association for Environmental Education (NAAEE) launched the National Project for Excellence in Environmental Education to help educators develop and deliver high-quality education programming. The project works to create more environmentally literate community members with the knowledge, skills, and inclinations to make informed choices and exercise the rights and responsibilities of members of a community.

To date, NAAEE has published six sets of guidelines that promote the use of balanced, scientifically accurate, and comprehensive environmental education materials and programs that advance environmental literacy and civic engagement. Publications created by the National Project for Excellence in Environmental Education include:

Environmental Education Programs: Guidelines for Excellence (2022). A set of recommendations to be used in the development of comprehensive environmental education programs or to inform improvements in existing ones.

Environmental Education Materials: Guidelines for Excellence (2021). A set of recommendations for developing and selecting environmental education instructional materials.

K–12 Environmental Education: Guidelines for Excellence (2019). A comprehensive framework for environmental education, demonstrating benchmarks towards environmental literacy.

K–12 Environmental Education: Guidelines for Excellence Executive Summary (2019). An easy-to-use outline listing the guidelines that can be used to compare performance expectations across grade levels.

Professional Development of Environmental Educators: Guidelines for Excellence (2019). A set of competencies for educators preparing to teach environmental education in a variety of job settings.

Community Engagement: Guidelines for Excellence (2017). This set of guidelines focuses on community wellness and is designed to help environmental educators create inclusive environments that support effective partnerships and collaborations.

Early Childhood Environmental Education Programs: Guidelines for Excellence (2016). A set of recommendations to be used in the development of comprehensive early childhood environmental education programs or to trigger improvements in existing ones.

Hard copies and free downloadable pdfs of the *Environmental Education Guidelines* publications can be ordered from NAAEE at https://naaee.org/our-work/programs/guidelinesexcellence

RESOURCES YOU CAN USE

eePRO

eePRO is NAAEE's online platform for environmental education professional development, offering a searchable bank of resources (lesson plans, journal articles, reports, videos), a listing of learning opportunities (webinars, on-line courses, workshops, conferences), a higher education database and much more.

eeBLUE

A partnership between NOAA and NAAEE to increase environmental and science literacy

eePRO Groups

A discussion platform where individuals can join special interest groups, network, and discuss key issues related to environmental education

eeLEARN

A series of online learning modules exploring the foundations of environmental education

eeNEWS

A biweekly e-newsletter, providing the latest news, opportunities, and resources for the environmental education community

eeRESEARCH

A searchable library of environmental education research

eeWORKS

Research reviews and tools for illustrating the benefits of environmental education

PRO Picks

A curated listing of educational resources recommended by experts in environmental education

Access all these eePRO resources by visiting https://naaee.org/eepro

North American Association
for Environmental Education

Education We Need for the World We Want

NAAEE uses the power of education to advance environmental literacy and civic engagement to create a more equitable and sustainable future! We wok with educators, policymakers, and partners throughout the world.

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naaee.org