Sierra Club of Canada – BC and Atlantic Chapters
People and the Planet Conference

Expanding Your Environmental Education Toolkit Workshop
Workshop Handouts

Greetings,

Thank you for joining us in our *Expanding Your Environmental Education Toolkit Workshop* at the *Sierra Club of Canada's People and the Planet Conference 2006*. As promised, we are sending you a collated version of the various handouts and resources (or links to resources) as mentioned during our workshop. Each of the following documents accompanies our Power Point Presentation, which is also being sent to you as a separate file.

Included in this package are the following documents, resources and tools to help you in your Environmental Education Program planning, delivery and evaluation. These resources come from a variety of sources and are referenced to their original sources individually:

Teaching Controversial issues in the Classroom
Addressing the Fears of Teaching EE in the Classroom (for Teachers)
Green Street Benchmarks in Environmental Learning and Sustainability, and Student Engagement
Green Street Excellence in Environmental Education Guidelines
NAAEE Environmental Education Programs: Guidelines for Excellence
Lessons Learned by the Atlantic Canada and BC Chapter Education Programs
Planning Templates for Environmental Education Programs
Competencies and Standards for EE Program Delivery Staff
Resources for Action Learning
Age-Appropriate Teaching Chart
Measuring the Success of Environmental Education Programs
Checklist for Program Evaluation Planning
Pro's and Con's of Various Evaluation Tools and Techniques Chart
Tips for Conducting an Evaluation

The following documents are just a sample of the accessible resources that exist out there. Whether your particular interest is in training your environmental education staff, improving the evaluation of your programs, bettering your program planning, learning new activities or teaching techniques, or building capacity for your programs (or all of the above) there are a multitude of resources out there to assist you. Throughout this document various organizations and their websites are referenced; we encourage you to visit their sites and learn more about the other resources they have available.

On behalf of the BC and ACC Chapters of the Sierra Club, thank you for all of the time, energy and passion that you put into your various environmental education endeavours. Whether it be working in schools, with youth, teachers, the general public or specialized populations, the work that you do is extremely valuable. We hope that some of these resources we're sending your way will help you continue to grow and build on the success you've already had.

If you have questions, comments, or require further information please contact us at:

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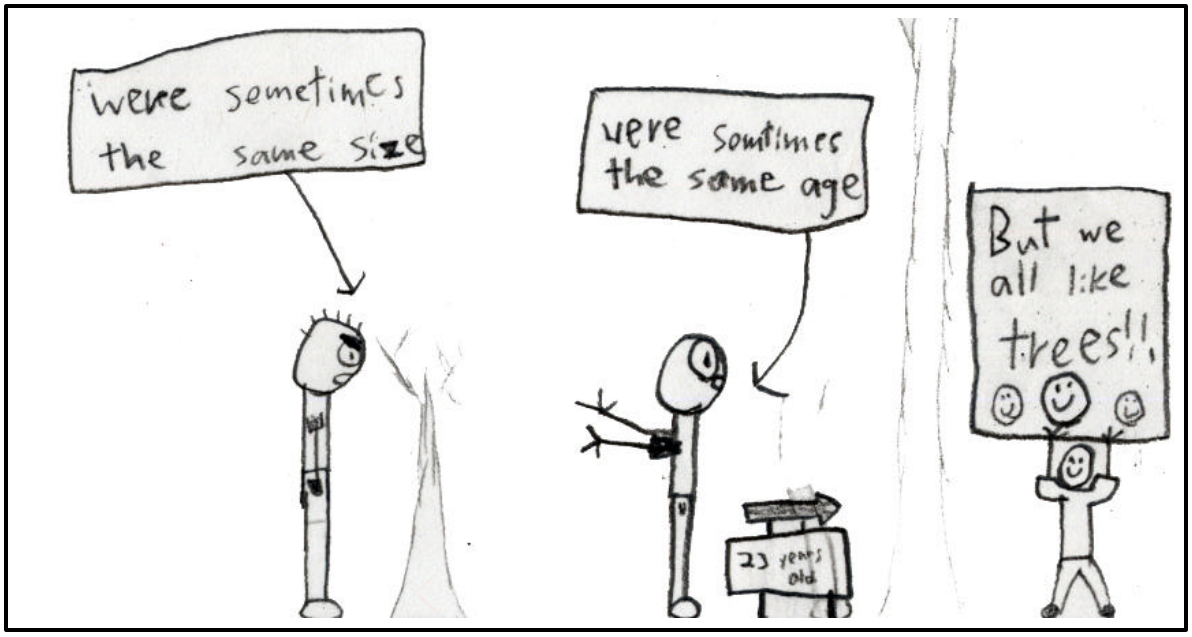

HANDOUT TO POWER POINT SLIDE PAGE 6

TEACHING CONTROVERSIAL ISSUES: A four-step classroom strategy for clear thinking on controversial issues

By Pat Clarke

Foreword: Pat Clarke is a highly regarded educator from B.C. who has a background in social justice education and teaching controversial issues in the classroom. The following article has been widely embraced by a variety of educators in BC, and offers many valuable tips for teaching issues often found controversial within the classroom. It is reprinted from the *BCTF/CIDA Global Classroom Initiative 2005 website (www.bctf.ca/Social/GlobalEd/GlobalClassroom/).*

This article was also printed in the Summer 2000 edition of *Green Teacher* magazine (www.greenteacher.com) another valuable resource for environmental educators.

For the past decade, one of the most popular workshops offered by the B.C. Teachers' Federation has been "Teaching controversial issues—Without becoming part of the controversy." The popularity of the workshop reflects a growing awareness of the need to teach social issues. Yet the motivation for teaching about environmental sustainability, limits to growth, animal rights or euthanasia is tempered by an understandable wariness of controversy. So while our workshop on teaching controversial issues is well subscribed, we know that the pedagogical danger zone social issues present is one many teachers avoid.

The reasons teachers may avoid controversial issues as classroom topics are as complex as teaching itself. The issues are complicated. Teachers may be discouraged, not so much by complexity, but by lack of familiarity with the topic: they are uncomfortable if they do not feel "expert" or at least well versed. Furthermore, teachers may be concerned that complicated issues would take too long to cover and regular curriculum would be neglected. With increasing standardization and calls for "accountability," teachers are not inclined to venture down the side roads of learning, where social issues can so often lead. We also live in a time of general decline in the protocols of civil discourse. Television talk shows bristle with outrageous behaviour, which teachers are understandably reluctant to see reproduced in their classrooms. Also, we sense that we are living in particularly cantankerous times when our actions as teachers are under close and often uninformed scrutiny. If we teach about an issue, we can easily find ourselves accused of bias or ulterior political motives. In other words, in teaching about a controversy, we become the controversy. Teachers in the Pacific Northwest experience this when they address sustainability issues and find themselves accused of being anti-logging.

But the fact remains that contemporary teaching presents certain challenges, not the least of which is relevance. The value of a formal education is increasingly measured according to the degree that it is future oriented.

Further, there is a growing belief that a good contemporary education is a global education, an education that concentrates on helping students understand connections and interdependence, develop an awareness of the planetary condition, and be well prepared to act as effective, responsible citizens in a complex world. In that context, the relationship between education and public issues is apparent: Global education in practice turns to contemporary issues for its content. We could well ask: What are our chances of becoming global educators if we remain averse to taking on controversial public issues as part of our teaching practice?

What is needed is an approach to teaching issues that overcomes the obstacles—specifically, a concern for the influence of a teacher's own biases, a fear of becoming a lightning rod for controversy oneself simply because a controversial issue is discussed in a class, and a lack of confidence because of unfamiliarity with an issue.

The approach to teaching an issue put forward here tries to answer at least part of those concerns. It does not deal directly with the role of issues in prescribed curricula. The possibilities for teaching issues as permitted or encouraged by curricula vary from province to province. However, it would not be extreme to suggest that any teacher who wants to can find a way to integrate consideration of issues into regular course work.

I sometimes refer to this approach to teaching issues as a de-mystification strategy, offering students a way of making sense of a complex and confusing world. It is a method of analyzing an issue, considering the merits of an argument, and forming an opinion on the basis of critical analysis.

As an essentially inductive process, it is student centred, and the teacher's role is primarily that of monitor or resource person. The teacher's bias is therefore less of a concern. Public concern over teaching a controversial issue is addressed because the strategy is itself a demonstration of fair consideration. As an inquiry method, it provides a framework for classroom activity that discourages one-sided argument or ill-informed opinion.

The de-mystification strategy: A framework for teaching

Controversial public issues

The teaching strategy for controversial public issues is based on four steps or elements. Each provides students a set of questions that gives them a number of ways of looking at an issue as well as a sound basis for making a judgment.

To demonstrate how the strategy and related questions might work as applied to a controversial issue, we offer a lesson on this site by Steve Naylor entitled "Honour killings: What do we need to understand in looking for solutions?"

1. What is the issue about?

Identify the key question over which there is a controversy. Virtually every controversy turns around three types of questions: those relating to values—What should be? What is best?; those relating to information—What is the truth? What is the case?; and those relating to concepts—What does this mean? How should this be defined? In short, What is this controversy about: values, information, or concepts?

By responding to these questions, students begin analyzing an issue by identifying the nature of the controversy. In doing this, students can fairly quickly get to the heart of the issue. This element of the strategy helps students get past some frustration that can be experienced in trying to understand an issue. It also gives them a chance to analyze an issue dispassionately before any consideration of the merits of a case.

Applied to the honour killing question, the inquiry starts by determining if it is a values issue. Is it a controversy over what should be, or in recognition of differences in cultural values, can honour killings be excused? Is it an information issue? Is it an issue around which there is controversy because it is difficult to know what or whom to believe? Or is it be a question of what we mean by the concept of "honour killing?" Concept is very much a matter of cultural interpretation. What is considered murder in one culture may not be in another. If students gravitate toward that interpretation, how do they deal with the universal value that killing another person is wrong?

For this issue, students might conclude it is mostly a values issue with information and concepts related but not central to the main question, Is it right? In any event, such a discussion reveals that even a question as blunt as Honour killing, right or wrong? Has shades of complexity.

2. What are the arguments?

Once students have determined what the issue is about or the nature of the controversy, they consider the arguments supporting the various positions on the issue. The key concern here is determining just what is being said and whether there is adequate support for the claims being made.

This step is largely analytical in that it calls for some determination of the content of an argument. It is also judgmental to a degree. At this step, students can begin judging the validity of a position on a controversial issue. If students have determined that the controversy surrounding an issue involves information, then they should ask questions about the information available or provided. Is there adequate information? Are the claims in the information accurate? Is the information appropriate to the issue? Are the sources primary or secondary? In general, are the conclusions presented in the argument reasonable, given the information?

Most controversial issues are about values, and there are critical questions students can ask about the values stated or employed in an argument. Specifically, what criteria are being used to make a judgment? In general there are two: moral and prudential. Moral criteria for judgment are based on a concern for how all people will be affected. Prudential criteria are concerned mainly with how my group or I will be affected.

Other questions students can use to test the acceptability of values claims are well known and universal in application: Would you like that done to you? What if everybody did that? Are there any situations where you would feel different or disagree with this value? These questions give students a set of criteria for making judgments that can take them beyond relativism and, because of their universal application, help them reflect on the validity of dogmatic positions.

If the controversy involves definitions, meanings, or concepts, then students should try to determine if the arguments presented use meanings or definitions that are clear. Also they should test to see if meanings are used consistently or if they are appropriate and used in a proper context.

If students have decided that the honour-killing question is about values, then they will have to respond to a moral question and then decide if it has a universal application. So they may decide that honour killing has to be accepted because of cultural considerations and that in certain cultures such a practice has a prudential value because it assures the broader well being of a family? The obvious question then is, Is this a good enough reason? and we turn to the moral question, What if everyone did it? If they decide on the moral imperative I wouldn't want this for me or this is a practice that would have terrible consequences if everyone did it, then they also have to think about the consequences of applying this value in a culture which does not hold to it.

3. What is assumed?

Once students have considered the arguments in an issue, the critical question becomes what are the assumptions or what is taken as self-evident in the presentation of arguments. It is at this stage that crucial matters of principle are employed to determine the validity of a position. This framework or process has at its heart a fundamentally important aspect and that is that there is no values relativity.

It is not true that any opinion, position, or point of view is acceptable or legitimate. If assumptions taken to justify an argument are based in prejudice, if the attitudes behind arguments are ethnocentric, racist, or parochial, then the assumptions are grounds for criticism and reduce the legitimacy of an argument. The question for students to pose is what are the assumptions behind the argument? Is it based on a prejudice or on some other attitude contrary to universally held human values such as those set out in the United Nations Declaration of Human Rights.?

A second element students can use to evaluate assumptions or what is behind an argument is the voice of the argument. Who is saying this? Insiders or outsiders? Insiders may have

particular information and interests that could give an argument a certain shape or orientation. If the voice is that of an outsider, do they know the issue or is being an outsider an advantage in this case since they have no special interest? Often the assumptions behind an argument can best be tested by hearing views of both insiders and outsiders.

The honour-killing question has obvious application to the UN Declaration. It can be analyzed from the Who is advocating this? perspective. Are the people who make a case for honour killing mostly self-serving and conducting the killings for their own benefit or to accommodate their own distorted notions of truth? Or are there such deeply imbedded cultural reasons for the practice that prohibiting it in those cultures would have consequences such as the destruction of traditional cultures, which, in turn, could lead to more death and destruction?

Once the arguments have been analyzed and the assumptions scrutinized, the final step has to do with how the issue or the arguments pertaining to it are presented or manipulated. The final question in the process then tries to help students judge the quality of the information they are receiving.

4. How are the arguments manipulated?
This is the stage of the process when questions are asked on the politics of the issue. This step is particularly important for students because it can help them understand how information can be used to influence opinion.

To determine how an argument is being manipulated students must first determine who is involved and what their particular interests are in the issue. What is the rationalization for their position? What are their reasons for taking the position they advance?

By considering these questions, students begin to see how information can be selected, emphasized, or ignored according to its value to various positions on an issue. The degree to which the parties involved are acting in self-interest and use information only to support that interest could affect the legitimacy of a position. On the other hand, a strongly supported position or one with strong moral reasons could add credibility to an argument. A growing contemporary concern is the role of media in controversial issues and how media can engage in argument manipulation. It is very important for students to have an appreciation of how media are involved in issues. Media literacy has become an essential survival skill as the influence of the media increases. The question for students to address is, How can the media both reflect and create reality? To what extent on any given controversial issue is the media either creating the issue or manipulating the arguments?

Argument manipulation is usually accomplished through such strategies as scapegoating, false analogies, extreme examples, and others. The degree to which media or advocates of a position rely on such strategies is an indication to students of the validity of an argument. Detecting such tactics gives students a useful tool for assessing an argument and making a judgment on an issue.

As far as the honour-killing question is concerned, there is lots of argument manipulation to go around and in the end it may not lead to a conclusion, only an awareness that manipulation happens. That in itself is a worthy learning outcome. Nevertheless, for this issue, it is evident that some time spent looking at examples of statements on either side should allow an informed opinion on where the manipulation is found and if one side is more prone to it than the other.

Conclusion

At the end of such an inquiry or de-mystification process, students may be less certain of their position than when they began. That is entirely an outcome of having more information and going through a process that requires critical reflection and open mindedness. Most importantly, they will have arrived at their conclusions through their own deliberation, and we teachers will have provided the lamp of learning not the pointer and the answer book.

Common strategies for manipulating arguments

ad hominem strategy: Judgment based on who said something rather than on the merit of the statement.
either-or tactic: Forcing a choice by presenting only two possibilities when there may be others.
extreme examples: Used to prove a point, to slant an argument, to support a prejudice.
false analogies: An analogy that makes an inappropriate connection or comparison.
irrelevant appeals: appeals to emotion, patriotism, tradition.
leading statements, slogans : Designed to damage credibility, encourage hostility, create a false impression.
polarized thinking: Us/them, strong/weak, rich/poor, good/bad; encourages distrust, suspicion; presents limited and false choices.
scapegoats: Assigning blame.
straw person: Creating a caricature of a person or group.

Acknowledgment: This article and the BCGEP workshop Teaching Controversial Issues is based on The *Media and Public Issues: A guide for teaching critical mindedness*, by Walter Werner and Kenneth Nixon, 1990, ISBN 0-920354-27-0, Althouse Press, 1137 Western Road, London, ON, N6G 1G7.

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Addressing the Fears Of Teaching Environmental Education in the Classroom

By the Sierra Club of Canada, BC Chapter

Over the years the BC Chapter has heard several concerns from teachers surrounding teaching environmental concepts and issues in the classroom. Together with our *Teacher Steering Committee* we identified six broad statements that represented the most common fears and concerns around teaching environmental education in the classrooms. We then came up with some tips and techniques on how to overcome them. We hope you find this useful!

Common Concern #1: I don't know enough!

Possible solutions*:*

a) Collaborate with your colleagues.
   i. Exchange activities/units that you've already tried
   ii. Have a planning session together – two brains equal an increased creativity power
b) Ask parents and community members if anyone has skills to share (and someone will!) and bring them in as a guest speaker.
c) Lead the students using the inquiry process – focus on teaching them how to ask better questions, and how they can use observation and low-tech experiments to draw their own conclusions
d) Have your students do the research!
e) Jump in anyway! Environmental education relies on the concept that children develop, (in the words of Rachel Carson,) "a sense of wonder". A hands-on experience will teach us far more than a page of facts! Take a look through the activities from various organizations (in BC, see the Sierra Club Education Program Web Links section for contact information). Many are easy to set up and quick to do.
f) Arrange a workshop for your school or community – Wild BC, the Sierra Club of Canada, BC Chapter, Ducks Unlimited and many others have both resources and workshops for educators and for youth.
g) Sign your class up for a Green Street program – they have a great variety of topics and partnership organizations. Your class will benefit from a visiting presenter, or take part in a "do-it-yourself" project with online/phone support if needed. Their web address is www.green-street.ca.

Common Concern #2: I have too much to teach already.

Possible solutions:

a) Focus on ways to integrate environmental themes into subjects that you already teach (ex. novel study, art, debating, statistics). *Environmental Education In the Classroom: A Guide For Teachers* (http://www.bced.gov.bc.ca/environment_ed/), is

an excellent guide on how to assist teachers of all subjects and grades to integrate environmental concepts into their daily lesson plans.

b) b) Reassure yourself that you don't have to "re-invent the wheel"! There are many well prepared, creative, accessible resources out there. All you have to do is implement them! See the Sierra Club of Canada, BC Chapter Education Program's **Web Links** and **Downloadable Resources** for suggestions.

c) Remember that the province-specific curriculum's regularly deal with topics directly related to the environment. Many others are open (ex. "propose and compare options when making decisions or taking action") and you can put an "environmental twist" on them.

Common Concern #3: I don't know how to deal with controversial issues (ex. forestry: conservation vs. industry)

Possible Solutions:

a) Read an article or take a course such as one by Pat Clark workshop through the BCTF, or the Sierra Club of Canada, BC Chapter's Teacher Training workshop. The most important thing to remember is to choose your issue carefully. Pat Clark suggests you to choose an issue that
   i. has no clear resolution that people would agree on right away, and
   ii. has had public prominence and received media attention over a period of time (i.e. it is not just an issue that you are close to).

b) Focus on the goal of critical thinking. Questioning, synthesizing, and drawing conclusions are valuable skills for our students to learn.

Common Concern #4: It takes too much time to organize!

Possible Solutions:

a) Start small! Environmental education doesn't have to be complex. A consistent vision and regular exposure to the natural world can have just as much impact as an elaborate field study- maybe even more! Try to develop routines (ex. weather station; weekly walks).

b) Go for activities that require fewer materials.

c) Get some parents involved and delegate.

d) See Concern #2. a) & b) above.

Common Concern #5: There's no green space around my school!

Possible Solutions: (a little trickier, but still possible!)

a) Make the site come to you! *Green Teacher Magazine*, for example, has some good articles about setting up a terrariums, hydroponic gardens, and ponds. See the **Web Links** section of the Sierra Club of Canada, BC Chapter Education Program's web site for contact information.

b) Transform an area in your classroom into an ecosystem – murals and models can bring a rainforest or underwater haven to "life

c) Get involved in a *Growing Schools* program and put in a garden. Hundreds of curricular topics can be explored using the garden as a "spring board". From plant life cycles to seasons, P.E. to a potential market, the possibilities are endless!
d) Take advantage of environmental education programs that are already established, such as the *Sea to Sky Outdoor School* (Sunshine Coast), *North Vancouver Outdoor School,* or the *From the Forest to the Sea Watershed Project* (Galiano Conservancy)
e) Plan for one to two camping trips. Especially at the beginning or end of the year, this adventure can be a wonderful "bonding" time for your class. There are opportunities for astronomy, ecology, biology, geology, wide games – you name it!
f) Explore the "issues" side of the environment- land use, urbanization, pollution, climate change, species conservation, off-shore drilling etc. You can hold debates and community meetings, start awareness campaigns, or build models (ex. solar oven).

Common Concern #6: I'm concerned about safety when we leave the school grounds.

Possible Solutions:

a) Visit the *Outdoor Classroom* article on the **Downloadable Resources** section of the Sierra Club of Canada, BC Chapter Education Program's web site for tips and techniques for planning an outdoor field trip.
b) Know your site! Do a pre-site check to assess potential hazards, learning opportunities and materials or resource needs for the day (ex. dip nets, Ziploc bags for pond studies, etc.)
c) And finally, ask parents to get involved – invite them along on the field trip too!

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Green Street Benchmarks in Environmental Learning and Sustainability, and Student Engagement

Background:
Green Street is a national initiative that endeavours to provide opportunities to actively engage students and teachers in environmental learning and sustainability education. The Program links schools in Canada to reputable Environmental Education organizations across the country. Green Street aims to deliver credible, accessible and affordable programs that are relevant to students' concerns, curriculum-linked, encourage a sense of personal responsibility for the environment, foster a commitment to sustainable living, and promote an enduring dedication to environmental stewardship.

As follows are **Benchmarks** as developed by Green Street that help ensure environmental education programs meet high standards. The standards fall into three main categories:

the themes,
the goals and objectives of Environmental Sustainability Learning, and
the actual Pedagogy, or the practice of ELS.

Programs that meets all or most of the following Benchmarks is actively engaging youth in environmental stewardship over time. While developed specifically for environmental education providers affiliated with the Green Street roster, many of the principles and practices below are universal, and can be applied to many different types of environmental education programs.

Benchmarks are available on line at the Green Street website (www.green-street.ca).

A. CURRENT THEMES OF INTEREST

In expanding it's themes of interest, Green Street has referred to the United Nations Decade of Education for Sustainable Development, Draft International Implementation Scheme, UNESCO 2005, and the Canadian youth priority concerns for sustainable development, "Mapping the Mind Maze" survey of youth by the United Nations Association in Canada (2002). Green Street's initial program theme areas included Biodiversity, Climate Change, Ecosystems, Energy, and Water. These have been expanded to include the following themes.

1. Environment

Biodiversity

Biodiversity, the variety of life on Earth and the natural patterns it forms, creates the web of life of which we are an integral part and upon which we depend. Human impact threatens individual species and all living things that depend on interaction of life forms

Climate Change

The harmful impact of climate change is of worldwide proportions. To limit damage to the atmosphere requires awareness and action from individual to international levels.

Ecosystems

The interaction of individual components of every ecosystem results in an effect that is greater than the sum of the individual parts. All aspects of society and economy are dependent on ecosystems and their functions.

Energy

Much of the world currently depends on inexpensive fossil fuels to heat homes, operate transportation systems and drive the economy. Meanwhile significant portions of the world's residents do not have the luxury of a single light switch. Both ends of this energy use spectrum challenge the environment's capacity to absorb the results of human energy use.

Water

Freshwater is a critical component of ecosystems and an essential human resource. Awareness and management challenges are critical environment and development issues.

2. Economy

Lifestyle and Sustainable Consumption

Sustainable lifestyles and ways of working are required to overcome poverty and protect the natural resource base for all forms of life

Food and Agriculture

A healthy environment provides humans with the food needed to sustain healthy populations. Current practices and dependencies challenge this capacity requiring that sustainable food production be achieved without compromising other environmental functions.

3. Society

Peace and Human Rights

Skills and values for peace and human rights enable people to live with human dignity and avoid insecurities and conflicts that undermine sustainable development.

Human Health and the Environment

Healthy individuals are dependent upon healthy environments, both important pre-conditions for sustainable development.

Governance and Citizenship

The full participation of citizens in decision making as part of transparent government structures and processes provides the best context for addressing sustainable development challenges.

Sustainable Urbanization and Transportation

Cities pose threats to sustainability but also offer opportunities to address the challenges faced by both urban and rural citizens. With more than half the world's population located in urban areas, cities are the context through which many social, economic and environmental challenges will be met.

Indigenous and Local Knowledge

Local and indigenous, including language, naming and classification systems, resource use practices, ritual, spirituality and worldview, are an important resource in achieving sustainable practices.

B. PROGRAM DESIGN AND CONTENT

Green Street benchmarks are based on our current understanding of the ways in which students learn best - they are used to select and evaluate program provides for Green

Street support. In order to gain that support, Green Street requires that programs have clear goals and objectives that are explicitly stated and reflected throughout. These include:

Knowledge Components: The program must be based on well-founded significant concepts and must be appropriate for the age, abilities, and skill level of the participants. Also, it must fall in line with local curriculum, and be *relevant to the community, culture and place*. Finally, it should be organized so that new learning is built on a foundation of students' previous knowledge.

Skills: Students must have opportunities to *practice critical thinking and processes* (i.e. hypothesis making; collecting, organizing and assessing data; inferring, analyzing, problem-solving; and investigating controversial issues) and to address skills that ensure safe learning.

Values: The program must promote increased sensitivity to and *appreciation of the environment*, cultures, and views of others and include an ethic of care, consensus building, and responsible citizen action. It must also support the personal and societal capacity to *take action* necessary for sustainability.

C. PEDAGOGICAL METHODS

Rigor, Critical Thinking, Active Learning, Self-Expression and Authenticity are seen as essential to attaining high levels of student engagement. The pedagogical methods that support this goal include the following:

1. **Accommodating Diverse Learners:** Activities address a range of learning styles and teach to both cognitive and affective domains.
2. **Open-ended Instruction:** Opportunities for students to study topics more deeply are provided and encouraged.
3. **Student-directed Learning:** Group and cooperative learning strategies are a priority.
4. **Experiential Learning:** Direct experiences are used to develop and deepen connections to the environment, and to encourage personal affinity, and emotional connection, with earth and other species. Outdoor learning is also part of the program or encouraged as a follow-up activity where appropriate.
5. **Connected to the World Outside the Classroom:** Learning activities are grounded in a real-world context.
6. **Case Studies:** Local relevant cases and references are used as a means of integrating concepts. Case studies and scenarios are presented with a range of possible solutions.
7. **Integrated Learning:** Concepts and issues are examined through their social, political, economic, ethical and ecological contexts. A systems thinking approach to the dynamic, complex way of relationships is provided.
8. **Locus of Control:** Opportunities are provided for students to choose elements of program content, and the medium in which they wish to work.
9. **Service/Action Learning:** Opportunity exists to practice action skills and strategies for environmental stewardship (planning, communication, group skills, team work, safety and leadership skills). It also provides opportunity to practice active citizenship - connecting curriculum to environmental action in school buildings and grounds, and in homes, neighbourhoods and communities.

10. **Values Education Methodology:** Examination and clarification of individual and social value systems, and the exploration of a range of perspectives, beliefs, biases and assumptions.
11. **Assessment and Evaluation of Student Learning:** Students actively demonstrate their knowledge and skills. Additionally, appropriate student assessment methods/mechanisms are utilized including reflection and self-assessment opportunities.
12. **Learning Materials:** Program materials readily integrate into prescribed curriculum. Materials provide clear directions, background information and adaptation suggestions for teachers. Learning materials are prepared taking in account all of the previously identified Green Street benchmarks.

D. MECHANISMS FOR LONG TERM IMPACT

Supporting Teacher Self-Sufficiency and Competency: Programs that promote and increase the capacity of teachers to incorporate Green Street benchmarks into their classroom planning and instruction are more likely to continue once outside support diminishes. It is important that programs promote teacher awareness and knowledge of the principles of sustainability and their practice in personal and professional realms. Additionally, they should promote opportunities for teachers to extend student learning in addition to and beyond the scope of the learning activities presented by providers.

Strategic Alliances: Programs that facilitate and encourage strategic alliances contribute to the long-term viability of Green Street initiatives. Whenever some portion of Green Street programming is adopted by the current school system, government agencies or local non-governmental organizations, the chance of long-term viability increases. Programs encourage support and endorsement from the school and/or school board.

Opportunities for sharing, extension and continuity are also provided (e.g. inform/engage fellow students, community members, follow-up programs, volunteer and mentoring programs, links to community action projects, student forums, camps, institutes, support for Environmental clubs, annual conferences and youth grants).

Finally, programs link across age groups so that students receive multiple co-ordinated learning opportunities achieved through the cooperative efforts of multiple agencies and organizations.

E. MARKETING, COMMUNICATION AND EVALUATION

Programs offer opportunities for student recognition and celebration in the broader community and profile student efforts as a means of building community awareness. They also provide teachers with links to related relevant resources, programs, organizations, and individuals.

Finally, an evaluation component that tracks and measures results at the level of short-term objectives and longer-term goals is important.

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Green Street Excellence in Environmental Education Guidelines

What constitutes an excellent environmental education program? A rigorous definition would be very difficult to give, and beyond the scope of this handout package. Notwithstanding this, it is useful for practitioners and funders of environmental education to consider the answer to this question.

As an example, the following ten principles of excellent environmental education programs were drafted by a group of experienced environmental educators involved in the Green Street initiative, as part of a visioning and capacity-building exercise. The intention of these principles is not to be prescriptive or exclusionary, nor are they necessarily a checklist (indeed, no programs can claim to exhibit 100% of these principles!).

Excellent environmental education programs…

Are credible, reputable, and based on solid facts, traditional knowledge, or on science. Values, biases, and assumptions are made explicit.

Create knowledge and understanding about ecological, social, economic, and political concepts, and demonstrate the interdependence between a healthy environment, human well-being, and a sound economy.

Involve a cycle of continual improvement that includes the processes of design, delivery, evaluation, and redesign.

Are grounded in a real-world context that is specific to age, curriculum, and place, and encourage a personal affinity with the earth through practical experiences out-of-doors and through the practice of an ethic of care. Like the environment itself, programs transcend curricular boundaries, striving to integrate traditional subject areas and disciplines.

Provide creative learning experiences that are hands-on and learner-centred, where students teach each other and educators are mentors and facilitators. These experiences promote higher order thinking and provide a cooperative context for learning and evaluation.

Create exciting and enjoyable learning situations that teach to all learning styles, promote life-long learning, and celebrate the beauty of nature.

Examine environmental problems and issues in a all-inclusive manner that includes social, moral, and ethical dimensions, promotes values clarification, and is respectful of the diversity of values that exist in our society.

Motivate and empower students through the provision of specific action skills, allowing students to develop strategies for responsible citizenship through the application of their knowledge and skills as they work cooperatively toward the resolution of an environmental problem or issue.

Engage the learner in a long-term mentoring relationship, transforming them as they examine their personal values, attitudes, feelings and behaviours.

Promote an understanding of the past, a sense of the present, and a positive vision for the future, developing a sense of commitment in the learner to help create a healthier environment and a sustainable home, community, and planet.

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NAAEE Environmental Education Programs: Guidelines for Excellence

Source: North America Association for Environmental Education (NAAEE). (2004). Nonformal *Environmental Education Programs: Guidelines for Excellence.* Washington, DC: NAAEE, p. 11. www.naaee.org/publications/guidelines-for-excellence

GUIDELINES AT A GLANCE

Key Characteristic #1: Needs Assessment. Nonformal environmental education programs are designed to address identified environmental, educational, and community needs and to produce responsive, responsible benefits that address those identified needs.

1.1 Environmental issue or condition
1.2 Inventory of existing programs and materials
1.3 Audience needs

Key Characteristic #2: Organizational Needs and Capacities. Nonformal environmental education programs support and complement their parent organization's mission, purpose, and goals.

2.1 Consistent with organizational priorities
2.2 Organization's need for the program identified
2.3 Organization's existing resources inventoried

Key Characteristic #3: Program Scope and Structure. Nonformal environmental education programs should be designed with well-articulated goals and objectives that state how the program will contribute to the development of environmental literacy.

3.1 Goals and objectives for the program
3.2 Fit with goals and objectives of environmental education
3.3 Program format and delivery
3.4 Partnerships and collaboration

Key Characteristic #4: Program Delivery Resources. Nonformal environmental education programs need to ensure that well trained staff, facilities, and support materials are available to accomplish program goals and objectives.

4.1 Assessment of resource needs
4.2 Quality instructional staff
4.3 Facilities management
4.4 Provision of support materials
4.5 Emergency planning

Key Characteristic #5: Program Quality and Appropriateness. Nonformal environmental education programs are built on a foundation of quality instructional materials and thorough planning.

5.1 Quality instructional materials and techniques
5.2 Field testing
5.3 Promotion, marketing, and dissemination
5.4 Sustainability

Key Characteristic #6: Evaluation. Nonformal environmental education programs define and measure outcomes in order to improve current programs, ensure accountability, and maximize the effects of future efforts.
6.1 Determination of evaluation strategies
6.2 Effective evaluation techniques and criteria
6.3 Use of evaluation results

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"Lessons Learned" by the Atlantic Canada and BC Chapter Education Programs

Background
In preparing for this workshop one of the areas that we wanted to give some practical advice towards was around the topics of *Program Planning and Development*. During our planning conversations we found ourselves starting sentences with "If I had known…", "One thing I would have done differently…" or "Something I found that worked well…".

We quickly realized that over our 10 years+ of developing, delivering and evaluating environmental education programs for the Sierra Club we had learned some valuable lessons on what to do – and what **not** to do – when building and implementing environmental education programs. We would like to share some of these 'lessons learned' with you in hopes that they might be of interest as well.

Lessons Learned…

1. **Look, Ask… then Leap**
   - o Do a gap analysis of programs that are already happing in your region. Are there similar/same programs/resources/websites/etc. as to what you're planning do develop? Avoid reinventing wheels!
   - o Survey your teacher & student communities – what do *they* need?
   - o How to survey your end-users
     - * Go "low tech" –
       - − Call/drop by a school (ask to attend a staff/faculty/dept/parent committee meeting);
       - − Ask a few teachers (there's over *215,000* teachers in Canada – this could include your neighbour, aunt, best friend, etc.)
       - − Send out a paper or email survey to a known community of educators
     - * Go more "high tech" - try a free and easy on-line survey that saves paper (e.g. www.surveymonkey.com). Good if you already have an email list of people to invite to the survey, if you're trying to cover a wider area (i.e. Provincial), or if you don't have the money and time to do a mail out.
     - * Provide incentives! Everybody loves prizes. Something as simple as offering a great prize can greatly increase your return rate. A new learning resource, a poster set, a bag of fair trade coffee, even something that your organization has already produced in the past – these are all great, low cost ways to improve returns.

2. **Make a Plan, with those that count**
   - o Have a project plan! Sure, sounds simple, straightforward, and probably not worth mentioning as everyone already has this… Well, experience has taught us that – yes, while the first two (simple and straightforward) are true, many times people don't always take the time up front to sit down and plan out their program activities.

By 'plan out' this could be something as simple as a one page chart that outlines your program **goal** (that big, overarching thing you want to achieve); a few program **objectives**; key **activities**, **outputs** (those immediate results) and **indicators** (what will tell you you've achieved your outputs), and the **evaluation** methods you'll use to measure everything.

"It doesn't need to be fancy, it just needs to be"!

- Make it a "Living Plan" – Once it's done, don't just file it away somewhere and forget about it. Stick it up on your wall where you see it; make a reminder on your calendar to check back in on your plan as needed (monthly, quarterly, whatever works best), and don't be afraid to change it as needed. After all, it's a 'living document'. If something isn't working or needs to be changed, then do so!

- Develop a Teacher and Youth Committees: Depending on your project you may find it useful to have either a teacher and/or youth steering committee. We can't speak enough to the value of this. Having the end-users involved in your program planning from the beginning is instrumental.

  There has been a lot of research done on what constitutes 'meaningful' involvement of youth in program planning and environmental projects. Organizations like the Green Street *Youth Engagement Program* (youthaction@green-street.ca) and the Centre for Excellence in Youth Engagement (www.tgmag.ca/centres/) are just two great places to start. As well, sociologist Roger Hart has done a lot of interesting work around what is 'meaningful youth engagement'. His Ladder of Young People's Participation is particularly interesting (www.freechild.org/ladder.htm).

3. Link it to the Curriculum

- Whether it's an in-class program, a learning resource, a website, or other, linking it to the curriculum of the province can be key. For many teachers, it demonstrates not only a sign of credibility or age-appropriateness (they know you've done enough homework to know the curriculum for which your resource is directed at) it also gives them the opportunity to use valuable classroom time teaching towards your resource or your program.

  Curriculum alignment doesn't need to be difficult. And there are a couple of great web sites that can assist in this process:

  Canadian Environmental Education Curriculum Assessment Program: http://www.ceecap.com/: A searchable database with information about selected environmental topics and the depth to which they are being examined in provincial and regional curricula. Search results indicate which topics have been introduced, in what course streams and which jurisdictions; grades 1 - 12 ;French and English school programs from across Canada.

  Provincial Sites: Most Provinces have the K to 12 curriculum available on line. This generally includes both detailed curriculum and key learning objectives by course (Ex. in BC http://www.bced.gov.bc.ca/irp/irp.htm; in Ontario http://www.edu.gov.on.ca/eng/document/curricul/curricul.html).

4. Network, Network, Network

- "Find your allies; Share your resources". Resource sharing amongst your community can be hugely beneficial. Often one organization may have a resource to share (a poster, a teacher kit, etc) and another may have the outreach mechanism that can be used (an in-class program, a pre-arranged mailing going out, an existing website or list serve). Sharing resources with allies is a great way to expand and enhance your program impact. As well it often gives rise to new and unique partnerships. For example, if you have an environmental-health focused program, you could look towards health agencies (e.g. the Cancer Society or the Heart and Lung Association).

- Refer and cross promote (web, voice, mail, etc.) – Again, network with various communities (social, environmental, health, etc.). Who's links do you have on your website? Do they have yours on theirs? (Have you asked them?). Who sends out regular emails or newsletters? Is there room for you to put a note in their publication or outreach material?

- Join the community – In Canada, there exist a number of provincial environmental education organizations and groups, as well as a few national level groups.

  Canadian Network for Environmental Education and Communication (www.eecom.org/)

  - On the Links (www.eecom.org/english/links_can.html) page there is a list of EE groups by province (EEBC, OEN, NSEN, NBEN, EEPSA, etc.

  Other good organizations to look towards:

  - NAAEE – North American Association for Environmental Education (www.naaee.org/)
    * Check out their *Guidelines for Excellence* resources (www.naaee.org/publications/guidelines-for-excellence) – they're great materials
  - Green Street – www.green-street.ca

5. Walk the Talk

- Assess your own ecological footprint; promote your eco-audit – if you've done an eco-audit on a particular print resource or a program, and have those results, be sure to share them. Not only does is show your commitment to mitigating environmental impacts, it's also a great 'teaching by example' for others

  For example, each *Green Star! Newsletter* the BC Chapter prints has an eco-audit on the front cover *"This newsletter is printed on New Leaf Reincarnation matte 70# text, made with 50% recycled fibre, 30% post-consumer waste, elemental chlorine free. By using this environmentally friendly paper, the BC Chapter saved the following resources: 31 gallons of water, 23 pounds of solid waste and 25 pounds of greenhouse gases."*

- Practice what you preach; implement and model low-impact teaching practices – there are a number of ways this can be done, from small steps to giant bounds. For ex:

  Use tree free paper (and note it on the footer); practice and promote carbon offsetting; practice environmentally friendly transport practices such as biking to programs; making copies of forms and lesson plans available as electronic-versions available on-line; use phone calls instead of forms; double side

materials; print eco-audits; use scrap paper for programs; re-use envelopes, etc.

- Case example: In order to make t-shirts for their program staff and volunteers, the Otesha Project take second-hand t-shirts from thrift stores, turn them inside out, and reprint them with their logo. Clothes recycling in action.
- Case example: The Sierra Club of Canada Atlantic Chapter's Education Director has converted her car to biodiesel - a great teachable moment when she shows up at a school to teach about climate change and environmental stewardship.

6. Show Up, Follow Up, Whoop It Up, Show Up…

- Show Up: Making your program have long-lasting connections and impacts - Nothing beats the in-person interaction.
- Follow It Up: After you leave, something as simple as a follow up email or a postcard can have a huge impact – it's often all about building a relationship. And consider launching action projects with the students you see – but make it sustainable for you though. If you make a promise, make sure you follow up.
- Remember to celebrate any and all successes (no matter how big or small) students might take after your visit. From posting a profile of their class on your website to a note in your annual report, newsletter or other publication to sending a thank you card, celebrating their successes is key.

7. Invest in your team

Looking for free training opportunities (volunteer bureaus, scholarships, other staff members, other ENGO's). Ask for free training.

- Remember to 'invest' in your volunteers, staff, and yourself! This builds their competencies, increases program impact and boosts moral and enthusiasm.

  Retreat, retreat! Retreats are easy, don't have to be complicated and should always be invigorating. Consider getting a facilitator if you have the resources or know someone willing to do so for free. Don't forget to get outside for a walk or a hike while retreating.

  Use existing resources and take advantage of 'free training' opportunities. Look to volunteer bureaus; community scholarships; 'time or resource swapping with other EE programs; and connecting with others within your organization, but maybe not your EE program, for a training session.

  Many of us see part of our responsibilities as environmental education program coordinators as investing in society when we invest in our staff – so many go on to be formal school teachers or environmental educators for other organizations – another way we're enacting positive change.

8. Evaluation

- Plan for evaluation from the beginning, make it on-going, do at the end, and them implement your results. Evaluation is covered further within this Handout Package. The most important thing to say about evaluation is **DO IT!**

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Planning Template for Environmental Education Programs

Having a simple, well-articulated living plan is a key step in developing your environmental education program. Remember, *it doesn't need to be fancy, it just needs to be".* Planning out your program can be something as simple as developing a one page chart that outlines your program **goal** (the big, overarching thing you want to achieve); a few program **objectives**; key **activities**, **outputs** (those immediate results) and **indicators** (what will tell you you've achieved your outputs), and the **evaluation** methods you'll use to measure everything.

And don't forget to make it a "living plan" – once it's done, don't just file it away somewhere and forget about it. Stick it up on your wall where you see it; make a reminder on your calendar to check back in on your plan as needed (monthly, quarterly, whatever works best), and don't be afraid to change it as needed. After all, it's a 'living document'. If something isn't working or needs to be changed, then do so

Aside from being a useful document that keeps you on track and is useful when communicating your program to your board, steering committee, or other staff members, your program plan will also have lots of other great uses, like helping you:

> Know what to expect from project activities
> Identify who will benefit from the expected results
> Gather just the right information to know whether the project is achieving what you want
> Know how to improve project activities based on this information
> Know how to maximize positive influences (referred to as Enablers), and to avoid or overcome negative influences (referred to as Constraints)
> Communicate plans and achievements more clearly to people and other organizations
> Gain from the knowledge, experience and ideas of the people involved
> Provide accurate and convincing information to support applications for funding
>
> (Plan:Net Limited, 2002)

And remember that the most logical time to build evaluation into your program plan is at the outset of your program, when you are still in the planning stages. Why? Because you'll know ahead of time what sort of data you need to collect in order to evaluate your program the way you want. However, if you are in the midst of a program – but wish to create a better evaluation plan – don't despair…

> The best time to plant a tree was a decade ago; the next best time to plant a tree is – today.
>
> Author Unknown

A tree planted today still provides benefits, and so will your evaluation plan.

Sample Program Plans:

Below are two different examples, one from the CPAWS Education Program called *Grizzly Bears Forever! (GBF),* and another from the BC Chapter's Education Program. There are lots of models out there; try to find one that works for you.

CPAWS GBF! Program Plan:

Component	*CPAWS Planning and Evaluation Strategy*
ACTIVITIES	What you do to create the change you seek.
INPUTS	Materials and resources used.
OUTPUTS	The most immediate results of your project. Each relates directly to your activities.
OUTCOMES	Actual benefits/impacts/changes for participants.
IMPACTS	The longer-term change you hope your project will help create.

BC Chapter Program Plan Template:

Goal	Objectives	Activities	Outputs	Outcomes/	Indicators	Evaluation Methods
(a) What are our long-term milestones of success for this program area (Goals)?	SMART: Specific, Measurable, Achievable, Realistic, Time-bound.	Activities are what you do to create the change you seek. The terms promotion, advocacy networking, or training can be describe what the project is doing.	The most immediate results of your project; each relates directly to your activities. More importantly, outputs create potential for desired results/ outcomes. Usually measured as statistics. (Ex. 61 youth attended ecology camp).	Describe the true changes that occur to people, org's & communities as a result of your program; the actual impacts, benefits, or changes for participants during or after your program, expressed in terms of knowledge, skills, values or behaviours.	What you can see, hear, read, etc. and suggest that you're making progress toward your outcome target (or not). Are measured using evaluation instruments. Indicators can be envisioned as the "flags" that let us know we're on the correct path. They answer the question, "How will you know when you've achieved the outcome?" They are the measurable, observable ways of defining your outcomes.	What methods or tools will you use to evaluate the success or impact of your program. These are your evaluation instruments.
Insert program goal	*Insert Objectives*	*Insert Activities*	*Insert Outputs*	*Insert Outcomes*	*Insert Indicators*	*Insert Eval. Methods*

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Competencies and Skills for Training Environmental Educators

Background*:* In *Metamorphosis for Environmental Education* Susan Staniforth and Leesa Fawcett provide a comprehensive list of defining competencies that can be used as 'guides' when training environmental educators. Environmental educators can also use these guides to identify areas where they can work to improve their own teaching competencies. The authors adapted their list of competencies from several key writings on environmental educator training; see the footnotes at the end for references to these other works.

Reference: *Metamorphosis for Environmental Education* by Staniforth and Fawcett, 1994.developed for the Commonwealth of Learning, Canada.

Additional References: *Harvesting One Hundredfold: Key Concepts and Case Studies in Environmental Education*, (Meadows, D. 1989); *Strategies for the Training of Teachers in EE* (Wilke et al, 1987); *An Environmental Education Approach to the Training of Elementary Teachers*, (Hungerford et al, 1988); *Environmental Literacy: A Critical Component of a Liberal Education for the 21st Century,* (McClaren, 1989); *Ecological Literacy,* (Orr, 1992); *EE for Sustainable Societies and Global Responsibility*, (ICAE, 1992).

Staniforth and Fawcett have used a framework of four sections to arrange their criteria:

Section 1: Personal Environmental Awareness and Experience
Section II: Ecological and Natural History Connections
Section III: Culture, Nature and Reverence
Section IV: Political and Environmental Actions

Section 1: Personal Environmental Awareness and Experience

An effective environmental educator should be:

Content:

…able to rediscover and rekindle a sense of wonder and affinity for the natural world, and a sense of kinship with living things, both for themselves and their students.

…able to cultivate the "3C's: Caring, Concern and Connection: to the natural world in students, in order to promote the development of an evolving, dynamic environmental ethic.

Skills:

…competent in providing direct experiences in the natural world to students.

…able to effectively implement sensory, experiential hands-on environmental discovery techniques that provide & enhance students' direct experiences with the natural world.

…able to nurture a capacity in students to explore an aesthetic response to the environment.
…competent in safe outdoor education methods and skills.

Section II: Ecological and Natural History Connections
An effective environmental educator should be:

Content:
…communicate & apply in an educational context the major concepts of ecology & energy flow.
…communicate relationships, cycles & dependencies that connect all living things, including humans, to the natural processes of the planet.
…assess & utilize local traditional native knowledge to teach environmental concepts
…value, explore, develop & teach the natural history of a local place.
…apply knowledge of ecology to the analysis of environmental issues & identify key ecological principles involved.

Skills:
…select appropriate sources of scientific & other information to use in investigating enviro problems.
…effectively assess & use community resources: ecological, issue-related, & human resources.
…value & develop their own natural history skills & those with their students: skills of quiet observation, absorption, listening with one's whole body, total sensory awareness & use.
…use methods of student and/or group investigation, research, & evaluation of the natural world, & environmental issues; e.g.: simulation games & role playing, case study methods.

Section III: Culture, Nature and Reverence
An effective environmental educator should be:

Content:
…make students aware of a perspective of humility to replace the human idea of superiority of humans & the need to control & use nature for our exclusive uses.
…make students aware of how our behaviours impact the environment from an ecological perspective
…make students aware of how human cultural activities (religious, economic, political, etc.) influence the environment, & vice versa.
…allow students to experience multicultural understandings of the environment, through first hand experiences with members of other cultures.
…make students aware of the roles played by differing human values in environmental issues & the need for personal values clarification.
…make students aware of the history of environmentalism & EE in their own local context.
…expose students to a wide variety of local, regional, national & global environmental issues, & the ecological and cultural implications of these issues.
…expose students to environmental issue investigation & evaluation as part of good decision-making

Skills:

…possess the knowledge & skills needed to identify & investigate environmental issues & the associated values of perspectives

…be committed to presentation of a range of perspectives, arguments & opinions on an issue.

…be able to identify & clarify their own value positions related to specific issues & their solutions & be able to be wrong & admit it.

…be able to model consensus.

…apply a knowledge of current environmental philosophy, learning theories, & values education in selecting, evaluating, developing and/or implementing EE curricula.

Section IV: Political and Environmental Actions

An effective environmental educator should be:

Content:

…increase students awareness of the need for current information & data about environmental concerns & ways to find and judge such data.

….teach about the need for responsible citizen action.

…develop student understanding of the variety of ways in which action can take place (e.g. communication with others, consumer action, political action, legal action, environmental management), & the consequences and appropriateness of different action strategies.

….encourage a sense of optimism & hope among students, & empower them with action tools.

…create & model a democratic environment, where full participation, dissent, discussion & reflection are encouraged.

Skills:

…take positive environmental action to show responsibility for maintaining our environment so that it promotes the well-being of all: be an effective environmental citizen.

…teach the intellectual & investigative tools necessary for critical analysis of a problem or issue.

…develop appropriate skills & competencies in students to take individual/group action.

…develop in students group skills of problem-solving, reaching consensus, valuing & considering other's opinions, & collective decision-making.

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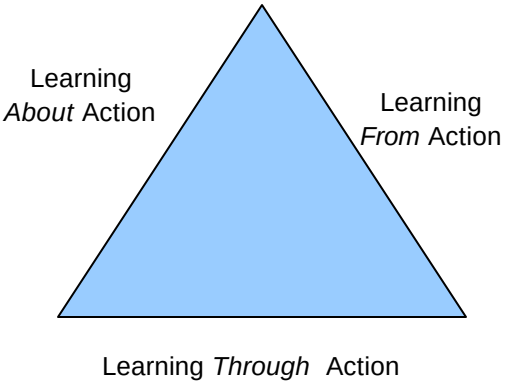
Resources for Action Learning

A Note about Action Learning

Action Learning is a huge topic. There's lots of theories, frameworks, approaches, etc. surrounding Action Learning – all outside of the scope of this handout! What we would like to do is connect you with some of the resources and key individuals associated with the wide field of Action Learning.

The one thing we would like to stress is that Action Learning is, in our field-tested opinions, important. One well known environmental educator, Bill Hammond, offers an action learning model that work nicely on helping youth move from awareness to action. His model, represented below, has three separate domains: learning *about* action; learning *through* action and learning *from* action. Each is a distinct domain, with it's own set of skills and content. As Hammond outlines, there's are lots of reasons to 'do' action learning, including



- "Learning ABOUT Action":
  - Builds understanding of natural systems
  - Builds understanding of impact on human activities
- "Learning FOR Action":
  - Creates a more politically- and action-empowered person
  - Promotes willingness and ability to change lifestyle
  - Develops motivation and skills in action
- "Learning THROUGH Action":
  - Fosters concern, consciousness, connection
  - Gives reality, relevance, practical experience
  - Develop appreciation and environmental ethic

Further Resources:

If you're interested in learning more about Action Learning, here are just a few of the many excellent resources out there on this topic:

Program Planning, Activity Guides, Teacher Directed

Canadian Parks and Wilderness Society's (CPAWS) *A Teacher's Guide to Community Environmental Action* (http://www.cpawscalgary.org/education/pics/Teacher%20Action%20Guide.pdf)

As well, the CPAWS website has a number of other great resources available on line as well. Visit http://www.cpawscalgary.org/education/edu_resources.php#1

Wild BC's *Leap Into Action! Simple Steps To Environmental Action* by Sue Staniforth (www.hctf.ca/wild/resources/leap/leap.htm)

Youth Directed:

The Sierra Club of Canada Atlantic Canada Chapter's on-line *Youth Action Website* (http://www.sierraclub.ca/atlantic/education/youth/index.htm)
The Green Street Youth Action Centre at www.youthactioncentre.ca.

Articles

Perspectives on Environmental Action: Reflection and revision through practical experience. *The Journal of Environmental Education* **29**(1): 34-44, 1997. by Katherine Emmons.
Learning about action, learning from action, learning through action. *Clearing* **99**: 7-11 by Bill Hammond.
Educating for action: A Framework for Thinking about the Place of Action in Environmental Education." *Green Teacher Magazine* **50**: 6-12. by Bill Hammond.
Changing learner behaviours through environmental education. *Journal of Environmental Education* **21**(3), 1990 by Hungerford and Volk

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Age-Appropriate Teaching Chart

Many different models that depict appropriate scope and sequencing by age of environmental education programs exist. In particular, Mike Mappin from the University of Calgary Kananaskis Field Station has developed a particularly useful tool for depicting age-appropriate activities within the context of environmental education.

Access to Outdoors	Ecological Understanding	Environmental Interests Understanding	Empathy Moral Understanding	Social Skills Understanding	Political Awareness Understanding
Grade K-3: Sensitivity & Ecological Fdn.	**Grade 3-6:** Ecological Fdn. & Issues/values	**Grades 6-9:** Issues/values, Investigation	**Grades 9-12:** Investigation & Action		**College** **16 – 20 a**
				High School **14 - 18 a**	
			Junior High **12 – 16 a**		**Society:** Political involvement & decision-making
		Middle Sch. **10 – 14 a**		**Community/Global:** e.g., citizen science projects, environmental & social issue research, mentoring	
	Upper Elem. **8 – 12 a**		**School/Community:** e.g., audits/surveys, schoolyard naturalization, monitoring projects, restoration projects		
Primary **4 – 8 a**		**Home/School:** e.g., recycling, composting, gardening, bird/bat houses, bird counts, plant watch, stream clean-up projects			
	Home*: e.g., caring for own animals and plants, recycling, composting, gardening ***Assumptions:*** *Access to food, water, shelter, education, opportunity to participate …*				

Adapted from: *http://www.unicef.org/teachers/researchers/graphics/ccr_chart1_full.gif* & Wilke (1994) by M. Mappin, University of Calgary Kananaskis Field Station

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BC Chapter Resources: Measuring the Success of Environmental Education Programs

Background
In 2003, a need was articulated by many of the current Green Street Program Providers for a resource that gave practical, hands-on tools and strategies for evaluating environmental education programs. Many Providers were frustrated by a lack of knowledge and awareness on how to evaluate the impacts of their programs. Others were challenged by access to tools that would make their program evaluation easier to implement. And yet others were tested as to how to build evaluation into their overall program plans.

Responding to this need, the BC Chapter of the Sierra Club of Canada and the Banff-Calgary Chapter of the Canadian Parks and Wilderness Society got together along with Sue Staniforth of Staniforth and Associates Consulting to develop a brief manual using outcome-based evaluation to help Providers and other environmental education practioners properly plan for, and evaluate, the impacts of their environmental education programs The resulting document *Measuring the Success of Environmental Education Programs* and is available free on the BC Chapter website: http://www.sierraclub.ca/bc/programs/education/educators/resources.shtml .

As the entire document is over 70 pages in length, we have included below a copy of the Table of Contents to give you a sense of what the document scope and direction is. Please feel free to visit our website and download a copy for your own use!

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Appendixes

End Notes

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Checklist for Program Evaluation Planning

The following checklist is adapted from Carter McNamara's *Checklist for Program Evaluation Planning.* A full checklist, in addition to many other useful evaluation tools, documents and materials, can be found on McNamara's excellent website. http://www.mapnp.org/library/evaluatn/fnl_eval.htm

---

Name of Organization _____

Name of Program _____

Purpose of Evaluation?
What do you want to be able to decide as a result of the evaluation? For example:
__ Understand, verify or increase impact of products or services on customers/ clients (e.g., outcomes evaluation)
__ Improve delivery mechanisms to be more efficient and less costly (e.g., process evaluation)
__ Verify that we're doing what we think we're doing (e.g., process evaluation)
__ Clarify program goals, processes and outcomes for management planning
__ Public relations
__ Program comparisons, e.g., to decide which should be retained
__ Fully examine and describe effective programs for duplication elsewhere
__ Other reason(s)

Audience(s) for the Evaluation?
Who are the audiences for the information from the evaluation, for example:
__ Clients/customers
__ Funders/Investors
__ Board members
__ Management
__ Staff/employees
__ Other(s) _____

What Kinds of Information Are Needed?
What kinds of information are needed to make the decision you need to make and/or enlighten your intended audiences, for example, information to understand:
__ The process of the product or service delivery (its inputs, activities & outputs)
__ The customers/clients who experience the product or service
__ Strengths and weaknesses of the product or service
__ Benefits to customers/clients (outcomes)
__ How the product or service failed and why, etc.
__ Other type(s) of information?

Type of Evaluation?

Based on the purpose of the evaluation and the kinds of information needed, what types of evaluation are being planned?

__ Goal-Based?
__ Process-Based?
__ Outcomes-Based?
__ Other(s)? _____

Where Should Information Be Collected From?

__ Staff/employees
__ Clients/customers
__ Program documentation
__ Funders/Investors
__ Other(s) _____

How Can Information Be Collected in Reasonable and Realistic Fashion?

__ questionnaires
__ interviews
__ documentation
__ observing clients/customers
__ observing staff/employees
__ conducting focus groups among_____
__ other(s)

When is the Information Needed?

_____

_____

_____

_____

What Resources Are Available to Collect the Information?

_____

_____

_____

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Pro's and Con's of Various Evaluation Tools and Techniques Chart

Instrument	Advantages	Disadvantages
1. Questionnaires and Surveys Types include: 1. Self-administered. 2. Interview administered by telephone.	w Inexpensive. w Easy to analyze. w Easy to ensure anonymity. w Can be quickly administered to many people. w Can provide a lot of data w Easy to model after existing samples.	r Wording of questions might bias responses. r No control for misunderstood questions, missing data, or untruthful responses. r Not suitable for examining complex issues. r Can be impersonal. r By telephone: respondents may lack privacy.
2. Interviews Types include: 1. Informal, conversational interview. 2. Standardized, open-ended interview. **3.** Closed, fixed-response interview.	w Can allow researcher to get a full range and depth of information. w Develops relationship with client. w Can be flexible with client. w Can allow you to clarify responses. w Interviewer controls situation, can probe irrelevant or evasive answers. w With good rapport, may obtain useful open-ended comments. w Usually yields richest data, details, and new insights. w Best if in-depth information is wanted.	r As a rule not suitable for younger children, older people, and non-English speaking persons. r Not suitable for sensitive topics. r Respondents may lack privacy. r Can be expensive. r May present logistics problems (time, place, privacy, access, safety). r Often requires lengthy data collection period unless project employs large interviewer staff. r Can take much time. r Can be hard to analyze and compare. r Interviewer can bias client's responses.
3. Focus groups	w Useful to gather ideas, different viewpoints, new insights, and for improving question design. w Researcher can quickly and reliably obtain common impressions and key information about programs from group. w Can be efficient way to get much range and depth of information in short time. w Information obtained can be used to generate survey questions.	r Not suited for generalizations about population being studied. r It can often be difficult to analyze responses. r A good facilitator is required to ensure safety and closure. r It can be difficult to schedule people together.

4. Tests **Types include:** a. Norm-referenced. b. Criterion-referenced. c. Performance assessment tests.	w Test can provide the "hard" data that administrators and funding agencies often prefer. w Generally they are relatively easy to administer. w Good instruments may be available as models.	r Available instruments may be unsuitable. r Developing and validating new, project-specific tests may be expensive and time consuming. r Objections may be raised because of test unfairness or bias.
5. Observations: **Types include** a. Observations. b. Participant observations.	w If done well, can be best for obtaining data about behaviour of individuals and groups. w You can view operations of a program as they are actually occurring. w Observations can be adapted to events as they occur.	r Can be expensive and time-consuming to conduct. r Needs well-qualified staff to conduct. r Observation may affect behaviour of program participants and deliverers. r Can be difficult to interpret and categorize observed behaviours. r Can be complex to categorize observations.
6. Documentation and Record Review	w Can be objective. w Can be quick (depending on amount of data involved). w Get comprehensive and historical information. w Doesn't interrupt program or client's routine in program. w Information already exists. w Few biases about information.	r Can also take much time, depending on data involved. r Data may be difficult to organize. r Can be difficult to interpret/compare data. r Data may be incomplete or restricted. r Need to be quite clear about what looking for. r Not a flexible means to get data.
7. Case Studies	w Fully depicts client's experience in program input, process and results. w Can be a powerful means to portray program to outsiders.	r Usually quite time- consuming to collect, organize and describe. r Represents depth of information, rather than breadth.

The above table is a compilation of information take from the following documents and sources: Carter McNamara's *Basic Guide to Program Evaluation*; EHR/NSF's *User-Friendly Handbook for Project Evaluation*; and SAMHSA – CSAP – NCAP's *Getting to Outcomes*. See the **References** section for more information.

HANDOUT TO POWER POINT SLIDE PAGE 21

Tips for Conducting An Evaluation

I. Develop Evaluation Questions

1. Clarify goals and objectives of the evaluation
2. Identify and involve key stakeholders and audiences.
3. Describe the intervention to be evaluated.
4. Formulate potential evaluation questions of interest to all stakeholders and audiences.
5. Determine resources available.
6. Prioritize and eliminate questions.

II. Match Questions with Appropriate Information-Gathering Techniques

1. Select a general methodological approach.
2. Determine what sources of data would provide the information needed.
3. Select data collection techniques that would gather the desired information from the identified sources.

III. Collect Data

1. Obtain the necessary clearances and permission.
2. Consider the needs and sensitivities of the respondents.
3. Make sure data collectors are adequately trained and will operate in an objective, unbiased manner.
4. Cause as little disruption as possible to the ongoing effort.

IV. Analyze Data

1. Check raw data and prepare date for analysis.
2. Conduct initial analysis based on the evaluation plan.
3. Conduct additional analyses based on the initial results.
4. Integrate and synthesize findings.

V. Provide Information to Interested Audiences

1. Provide information to the targeted audiences
2. Deliver reports and other presentations in time to be useful.
3. Customize reports and other presentations.

(EHR/NSF)

*From the HER/NSF *The User Friendly Handbook for Project Evaluation.*
http://www.ehr.nsf.gov/EHR/RED/EVAL/handbook/intro.pdf