

ENVIRONMENTAL EDUCATION FRAMEWORK

Executive Summary



Pathways to Environmental Literacy in
Alberta Schools, Supporting Alberta
Education's Curriculum Redesign



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The Alberta Council for Environmental Education
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Executive Summary

The Environmental Education Framework is a document to support Alberta Education's curriculum redesign work in developing competency indicators, assessment, and teaching practices for all future curricula.

Alberta Education is in the process of transforming education, with the goal of creating 'engaged thinkers who are ethical citizens with an entrepreneurial spirit.' To create this vision, Alberta Education consulted with Albertans to present a vision for education to 2030. The result of these consultations were captured in the 2010 *Inspiring Education – A Dialogue with Albertans*. From this work, the *Action on Curriculum* agenda was established and further research roundtables and symposiums ensured further dialogue to fine tune this plan. In 2011, Alberta Education drafted the *Framework for Student Learning* that described seven core cross-curricular competency groupings that students should demonstrate – including one entitled "social, cultural, global and environmental responsibility."

In early 2012 the Minister of Education, the Honourable Thomas Lukaszuk, invited the Alberta Council for Environmental Education (ACEE) to collaborate with his staff to help elaborate on this 'responsibility' competency and create the pieces that curriculum developers need in order to ensure that this competency will be manifested in all Alberta classrooms and realized by all Alberta students.

In early 2013, Alberta Education continued to refine the competency groupings and also incorporated the ones listed on page 26 of the *Inspiring Education* report. Environmental responsibility is no longer explicitly referenced but there are many references made in the report such as in the description for an ethical citizen, "As a steward of the earth, I minimize environmental impacts wherever I go." (*Inspiring Education*, 2010, page 19). The *Inspiring Education* report (page 12) also makes reference to the competition for natural resources and that a priority of the government is to "ensure Alberta's energy resources are developed in an environmentally sustainable way."

The Environmental Education Framework was developed to support the social, cultural, global and environmental responsibility competency. Even though this particular phrase is not specifically used in the *Inspiring Education* report, we believe that this 'responsibility' concept is implicit in the government's aspirations for education that supports stewardship and environmental sustainability, as noted above.

For this reason, the Environmental Education Framework continues to refer to the 'Environmental Responsibility' competency in many places. It was developed to build pathways for Alberta students to achieve environmental literacy. Environmental literacy crosses over many competencies that are needed for students to become engaged thinkers who are ethical citizens with an entrepreneurial spirit.



ACEE has worked jointly with Alberta Education staff through a collaborative Project Team, contracted Dr. Liza Ireland of Royal Roads University to conduct the research and writing of the Framework, and engaged a [Multi-stakeholder Advisory Committee](#) to help guide this initiative.



Multi-stakeholder Advisory Committee meeting, December 13, 2012. From left to right: Jesse Beaudry, Gareth Thomson, Kimberly Gray, Sherry Bennett, Kathryn Wagner, Dr. Liza Ireland, Bill Bagshaw, Renate Taylor Majeau, Joanne Barwise, Kathy Worobec, James Bartram

This document is the result of that work. The Environmental Education Framework details the key pieces that are necessary to develop curricula that delivers on the vision of Alberta Education through cross-curricular competencies. The Environmental Education Framework includes key elements for environmental learning, competency indicators for K-12, effective teaching practices, and relevant assessment techniques. The Framework outlines pathways that will achieve environmental literacy for Alberta students. Environmental literacy is achieved through a process of interdisciplinary environmental education.

The North American Association for Environmental Education (NAAEE, 2010) uses a broad definition of environmental literacy that incorporates literacy and competency, specifically recognizing:

- Knowledge of Environmental Processes;
- Questioning, Analysis and Interpretive Skills;
- Skills for Understanding and Addressing Environmental Issues; and
- Personal and Civic Responsibility

A review of the literature confirms that environmental literacy incorporates scientific, technological, political, economic, social and cultural principles and value systems, as well as the aesthetic, moral, ethical and spiritual understanding needed to create ethical, engaged entrepreneurial citizens.

As Dr. David Orr tells us: “Hope is a verb with its sleeves rolled up.” Environmentally literate students who are given the chance to ‘roll up their sleeves’ and engage in positive work to improve environmental quality feel a sense of agency; an education process that empowers them also brings with it that all-important attitude of hope that the quality of the environment can and will improve.



The literature tells us that environmental education has many other benefits:

- Development of 21st Century skills that contribute to healthier, more environmentally sustainable, and economically prosperous communities (NAAEE, 2008, p. 3);
- Improvement in reading, writing, math, science, and social studies (Lieberman and Hoody, 1998; Wheeler and Thumlert, 2007);
- Students exhibit increased pride in their accomplishments (Lieberman and Hoody, 1998);
- Greater engagement and enthusiasm for learning (Chawla and Escalante, 2007);
- Better ability to apply science to real-world situations (Lieberman and Hoody, 1998);
- Better application of systems thinking and increased ability to think creatively (Lieberman and Hoody, 1998);
- More advanced skills in applying civic processes to real-life situations (Lieberman and Hoody, 1998);
- Improvement in intergenerational relations and individual, community, and ecological wellbeing (Manion and Lynch, 2010); and
- Reduction in stress levels and increased feelings of well-being (Louv, 2005).

Sections 4-7 address how environmental literacy can be incorporated into cross-curricular competencies from K-12 identifying competency indicators, assessment and effective teaching practices. The competency indicators outline the direction needed in future curricula while the assessment and effective teaching practices provide examples to help guide teachers in achieving the transformation.

Competency indicators for environmental education and environmental literacy have been organized into three key elements:

1. **Interconnections** - This element incorporates learning about ecological systems and processes, how these are interconnected with social systems, technology and the economy, and how these interconnections influence personal wellbeing and healthy communities that are environmentally sustainable and economically prosperous.
2. **Diversity** - This element involves considering and honouring diversity environmentally and socially, recognizing diverse perspectives and worldviews regionally, culturally and globally.
3. **Responsibility and Citizenship** - This element incorporates investigative and evaluative skills and action to enable learners to understand and develop abilities in adaptation, change and emergence, as society and our socio-ecological inter-relations continue to adapt, change and emerge.

Indicators are provided for each element and are further divided into categories and show a K-12 learning progression using the grade groupings: K-4, 5-8, and 9-12.



The indicators cover the cognitive (thinking or knowledge and understanding), affective (feelings or attitudes and values) and psychomotor (doing or skills and processes) domains. Indicators relate to a learning progression of higher orders of thinking in each of these domains. The higher orders of thinking are categorized across three areas that were being used by Alberta Education in their original work. In addition, the indicators have been written to weave in intrinsic, extrinsic and social learning competencies identified from the literature search.

Exemplary teaching practices at elementary and secondary levels provide examples from individual classes

addressing single or multiple curricula to grade-wide or school-wide projects. These exemplify many of the Elements and Indicators outlined in Sections 4 and 5; experiential, place-based learning; student empowerment; transformative teaching and learning; and



effective community connections. Each example or 'story' has three parts incorporating what the teacher did, what the students did, and what changed as a result of the experience.

Section 7 on effective assessment for environmental literacy and learning emphasizes assessment *for* learning, assessment *as* learning as well as assessment *of* learning. Assessment also needs to incorporate assessment of affective and psychomotor as well as cognitive learning. Assessment methods range from tests and questionnaires to interviews, peer assessments, journal entries, focus groups and observing skills exemplified in carrying out action projects.

Assessments need to measure high level attitudes, skills and knowledge, be largely performance-based, and incorporate adaptability and the ability to cope with novel unpredictable situations.

Given the three key elements of environmental literacy, and the components within each, effective assessment incorporates weighting the various levels and components with respect to each other, and a few examples are provided. Authentic assessment rubrics are shown to be a valuable, effective tool to provide assessment criteria in relation to learning indicators.

From defining environmental education and literacy to identifying key elements, competencies, indicators, as well as exemplary teaching practices and assessment, this Framework is meant as a guide to identify multiple pathways, enabling educators to incorporate environmental education and literacy into the Alberta K-12 curricula. In doing so, it will help develop engaged thinkers that are ethical citizens with an entrepreneurial spirit.



Alberta Education has undertaken an in depth process to transform education. The Environmental Education Framework was developed as a tool to help guide this process. A successful transformation requires work in a number of areas:

- Alberta Education curriculum redesign
- Teachers having the time and resources to embrace the new direction
- A willingness for school administrators, teachers and the community to embrace and support the change

The Environmental Education Framework is a tool that can showcase and support Alberta Education, teachers, school administrators and the community in understanding the importance and benefits of environmental education in curriculum. The Framework's main purpose is to guide curriculum developers in creating new curriculum documents by providing the background research and direction needed to achieve environmental literacy for the 21st century. It also provides tools to guide teachers in creating the change in their classrooms and for the external community to understand the benefits and importance of environmental education.

ACEE is engaging a wide range of stakeholders to raise the profile of the importance and need for environmental education in future curriculum. The first session was held on April 25th in Canmore, Alberta where over 40 participants engaged in the work of Alberta Education, worked together to identify knowledge, skills and attitude statements they feel are important for



Alberta students, and began identifying action statements of what they will do to raise the profile of environmental education. The participants provided value input to ensure the competency indicators were aligning with stakeholders needs and helped refine the work needed to raise the profile of environmental education.

ACEE will continue to bring together a wide range of stakeholders in a variety of session during this important year of curriculum redesign. The work will continue to evolve in 2013 as Alberta Education continues its work on curriculum redesign. During this time, the Environmental Education Framework will be a living document that will continually be improved and enhanced. If you wish to engage in any of the stakeholder sessions, please check out the Champion Environmental Education web site at: <http://abcee.org/championEE/>. If you wish to provide comments on the Environmental Education Framework, please send an email to Kathy Worobec, ACEE's Education Director at Kathy@abcee.org.

