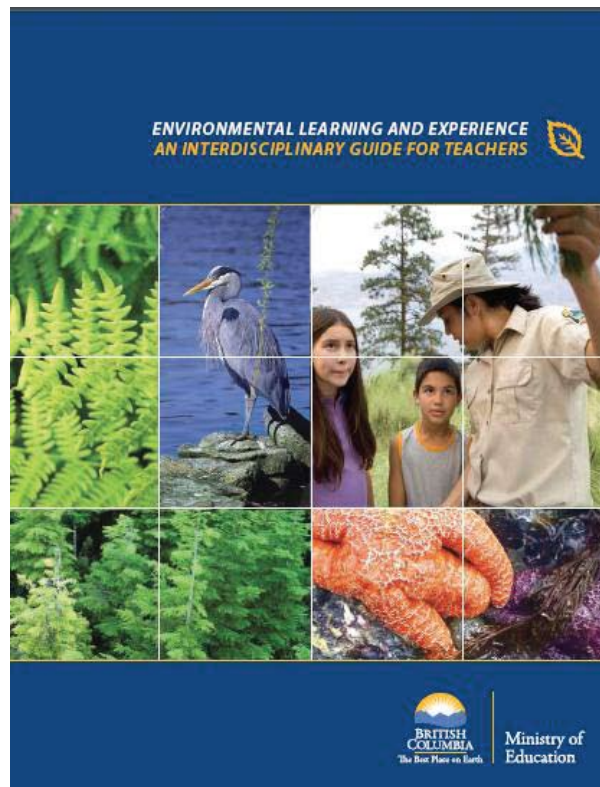


INTRODUCTION / RATIONALE

A sustainable future for humans on this planet is one of the most significant concerns of our age. As such, there is a growing interest in environmental learning and sustainability among educators. Recent developments in BC curricula have responded to this increasing awareness and demand. In 2007, a new provincial framework for environmental education, *Environmental Learning and Experience (ELE)*, was developed and is available to assist educators around the province in nurturing care for the environment in our learners.

In 2008, a set of ELE Curriculum Maps has been developed to help teachers turn theory into practice for environmental learning by connecting learning outcomes across K-12 curricula with elements of the ELE Guide. Teachers adept at integrating the environment and sustainability into their practice are often well aware of these curriculum links, while others may find the connections less obvious. These maps help to show us where the connections already exist, and how we might further incorporate environmental themes into our teaching and learning.

With the release of the ELE Guide and Curriculum Maps, educators in BC have a stronger foundation on which to base their teaching around the environment and sustainability. Together, we hope these curriculum resources can further support educators in their efforts to make the environment and sustainability a core focus for all learners in BC.





THE ELE CURRICULUM GUIDE

The ELE guide represents an integrated approach to environmental learning because so many school subject areas and learning outcomes touch on environmental topics in some way. This guide is also intended to underscore the fact that environmental concerns are complex and interdisciplinary. By emphasizing the study of environment across the curriculum, it is hoped that students will come to understand how their actions affect both local and global environments.

This revised curriculum resource offers a conceptual framework for introducing environmental learning in all classrooms, while providing several general principles of teaching and learning to guide teachers in designing integrated activities for their learners. The framework provides a number of perspectives around which environmentally-focused lessons may be developed and can assist teachers of all subjects and grades to integrate environmental concepts into virtually any teaching and learning. It is also a guide to the possibility of interdisciplinary practice — using the environment as an organizing theme. Central to the ELE Guide are two elements: the Learning Cycle and C.A.R.E.

The ELE Curriculum Guide is available online at:

www.bced.gov.bc.ca/environment_ed

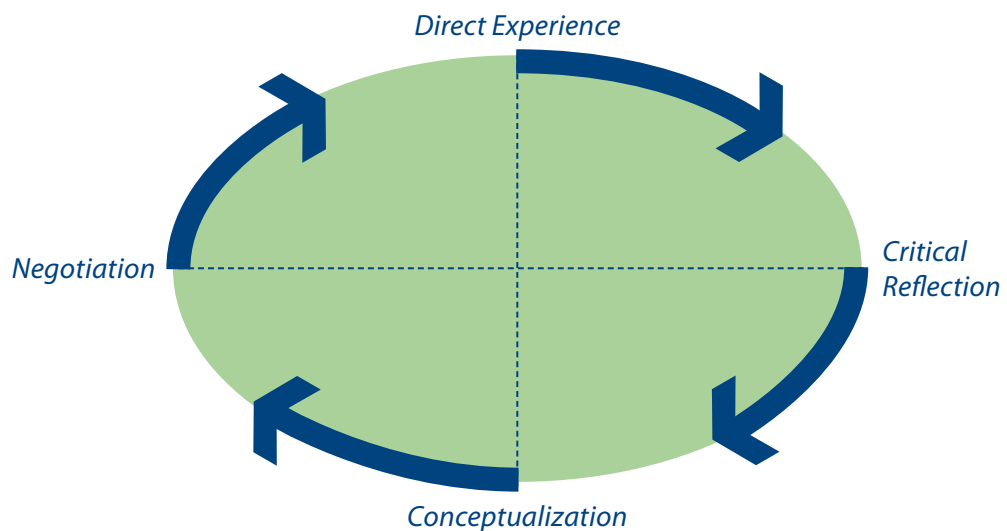
THE LEARNING CYCLE

The experiential learning cycle is a view of teaching and learning that incorporates direct experience, critical reflection and negotiation as foundations of the learning process.

For more on the Learning Cycle, please see the ELE Guide at:

www.bced.gov.bc.ca/environment_ed/principl.html#exper

FIG. 1: THE LEARNING CYCLE



C.A.R.E.

The mnemonic and metaphor of **C.A.R.E.** (Complexity, Aesthetics, Responsibility and Ethics) can be used to describe the various forms environmental knowledge can take.

These principles for organizing and conceptualizing environmental learning include:

- ✿ **COMPLEXITY:** considering the complexity and interrelatedness of natural and human-created systems, and how humans interact with and affect those systems
- ✿ **AESTHETICS:** developing an aesthetic appreciation for the natural world that encourages students to learn about and protect the environment
- ✿ **RESPONSIBILITY:** providing opportunities for students to take responsible action and explore the environmental impact of their decisions and actions
- ✿ **ETHICS:** providing opportunities to practice an environmental ethic based on an examination of values that can give rise to new visions, possibilities and actions

C.A.R.E. emphasizes the interdisciplinary nature of environmental concepts, while representing a progression in the development of ideas that can lead towards deeper engagement with environmental learning in all of its forms. For more details on the elements of **C.A.R.E.**, please see the ELE Guide at:

www.bced.gov.bc.ca/environment_ed/principl_conceptualizing.html

FIG. 2: THE ELEMENTS OF C.A.R.E.



Understanding the complexity of their daily interactions, while recognizing the aesthetics of their environment, learners can take more active responsibility with respect to the environment and sustainable lifestyles. When this happens, an environmental ethic can become a greater part of their developing moral identities. Connecting learning outcomes in K-12 curricula with the elements of C.A.R.E. can enable educators to deepen environmental learning and to nurture the development of an environmental ethic in learners.





THE ELE CURRICULUM MAPS

British Columbia's provincial curricula or Integrated Resource Packages (IRPs) put significant emphasis, beginning in the primary grades and extending through the secondary years, on understanding environmental concepts and exploring sustainability in our lives and communities. Prescribed learning outcomes (PLOs) with explicit links to sustainability and environment exist in virtually every subject area from K-12.

As teachers are directly responsible for learning with respect to PLOs, this set of ELE Curriculum Maps linking K-12 IRPs to the ELE Guide has been developed. From the Sciences to the Arts, these maps can assist educators in seeing connections to environment and sustainability across provincial learning outcomes and enable more effective integration of C.A.R.E. into teaching practices and learning.

Importantly, these curriculum maps are intended to make explicit the learning outcomes that exist in K-12 curricula with strong links to sustainability and environmental concepts in an effort to save teachers time. Integrating the environment and sustainability in daily teaching practice is not one more thing for the overburdened educator to do. Rather, these maps can potentially enhance our efficiency and effectiveness by providing a unifying lens with which to approach teaching and learning.



CONNECTING K-12 CURRICULA TO C.A.R.E.

While the Learning Cycle (see Figure 1) represents a range of best-practices-based educational research (HOW to approach environmental learning and experiential approaches), C.A.R.E. represents the content strands of an environmental learning curricula (the WHAT). Connecting PLOs from a broad range of K-12 IRPs to C.A.R.E. is the core purpose of the ELE curriculum maps.

Over the course of 16 months, teams of educational professionals from around the province convened multiple meetings and working groups to identify learning outcomes related to environment and sustainability across K-12 curricula, and to connect these PLOs with the elements of C.A.R.E. Criteria were developed to guide the process of mapping C.A.R.E. across PLOs. These criteria/markers included:

- Focus on Systems and Systems Thinking (C)
- Awareness of and Appreciation for the Natural World (C,A)
- Representation of Environmental Concepts (C,A)
- Action Elements (R, E)
- Values Language (R, E)
- Traditional Ecological Knowledge (C, A, R, E)
- Verbs in PLOs in reference to Bloom's Taxonomy (C, A, R, E)

The ELE Curriculum Maps are intended to be living documents. While selected PLOs across subjects and grade levels have been identified based on their connection to the environment and sustainability, these maps do not contain an exhaustive list. Rather, the maps represent starting points for teachers and other educational professionals to expand and enhance their efforts around environmental learning.

AUDIENCES AND APPLICATIONS



This package of curriculum maps is intended for use by a range of educational professionals. From the classroom to the community, these maps provide a navigational tool to enhance teaching and learning with the environment and sustainability as core elements.

FOR TEACHERS

Teachers take curricula and translate these guidelines with other essential ingredients into high quality, engaging experiences for learners. With IRP PLOs as the desired ends, the ELE Curriculum Maps are designed to assist teachers in emphasizing the environment and sustainability across provincial curricula. Most notably, the maps are intended as a guide for program planning and unit/lesson plan development so that C.A.R.E. can be brought alive in daily practice. Beyond their practical usefulness, these maps also give teachers permission in Ministry of Education curriculum to approach environmental concepts and sustainability as core content.

FOR ADMINISTRATORS AND PROFESSIONAL DEVELOPMENT COORDINATORS

For school and district administrators, as well as Pro-D chairs and committees, intent on making environmental learning a higher priority, the ELE Curriculum Maps have a variety of applications. Most notably, these maps represent permission in Ministry of Education curriculum to emphasize sustainability and the environment in our classrooms, schools and districts. The curriculum connections may also be useful for outreach to parents and the community in support of environmental learning and sustainable practices. With respect to professional development, these maps are a useful tool to help teachers implement the ELE guide in their practices. They can also provide curricular foundations for school and district planning around sustainability and environmental initiatives.

FOR TEACHER EDUCATION PROGRAMS

Pre-service and beginning teachers have a growing need for relevant curriculum implementation training with a strong focus on the environment and sustainability. Teacher education programs can employ the ELE Curriculum Maps (and accompanying suite of ELE initiatives) to support teachers in the process of turning educational theory into best practices. The maps are also an excellent resource to approach learning about cross-curricular integration as well as the developmental aspect of learning outcomes through the grade levels. New teachers can often find a lack of background knowledge to be a significant barrier to implementing new curricula – these maps can help find paths to overcome these challenges.

FOR COMMUNITY PROGRAM AND RESOURCE DEVELOPERS

For community organizations interested in meeting the needs of teachers and learners in the public system, the ability to match your program and resource offerings with provincial curricula is essential. The ELE Curriculum Maps are a valuable tool in further connecting community programs and learning resources with PLOs across K-12 curricula. Connecting your programs and resources to the Learning Cycle and elements of C.A.R.E. is an important aspect of this process. With a stronger sense of the ELE and emergent curriculum connections, community organizations can also enhance their outreach and marketing to teachers and community members.

