

Conference Strand: Developing the EE Profession

Environmental Literacy Scope and Sequence
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The Environmental Literacy Scope and Sequence was developed in Minnesota by a team of experienced, practicing EE professionals and PreK through adult educators, state agency, higher education, and environmental learning center representatives. The Environmental Literacy Scope and Sequence consists of benchmarks, and key systems concepts/supporting concepts. These two pieces provide the framework for adapting and developing successful environmental education curriculum and environmentally literate individuals. By sharing the background of this work and the different ways it can be used to develop EE curriculum and lessons this free resource will be valuable to EE providers.

The *Environmental Education Literacy Scope and Sequence* is a tool for educators that provides a systems approach to environmental education in Minnesota for preK through adult learners. It describes key concepts about the interaction of natural and social systems and a sequence in which they are to be taught. It also discusses benchmarks, standards, and applications for using the Scope and Sequence. The Environmental Literacy Scope and Sequence is designed to help create opportunities for mainstreaming environmental education in a way that has not been possible before.

Converging projects that began defining EE in the late 1990's included the California Guide for Environmental Literacy Project, NAAEE – Guidelines for Excellence in EE Minnesota Grad Standards (CFL), Teacher Prep Project and the State Education and Environmental Roundtable. These groups began asking, “what is the core of understanding we are seeking that is clearly different from, but would add significant

value to, both science and social science? What is it that we are trying to define that would make a difference in how people understand and treat both our physical and social worlds? They answered their question understanding that what was needed was a concept of systems as a way to study the idea of connectedness and interdependency. The reality that natural and social systems are constantly and intricately interacting.

Minnesota Statute 115A.073 states “Pupils and citizens should be able to apply informed decision-making processes to maintain a sustainable lifestyle. In order to do so, citizens should: understand ecological systems; understand the cause and effect relationship between human attitudes and behavior and the environment; be able to evaluate alternative responses to environmental issues before deciding on alternative courses of action; and understand the effects of multiple uses of the environment. ” The need for a document and resource to connect the natural and social systems, as well as adhere to the Minnesota Statute and focus formal and non-formal educators became the Environmental Literacy Scope and Sequence. The work for this document is based on the foundation piece from *American Association for the Advancement of Science’s (AAAS) Benchmarks for Science Literacy - Systems benchmarks.*

Project Partners in the development of the Environmental Literacy Scope and Sequence included, Minnesota Department of Children, Families and Learning (CFL), now the Dept. of Education, Minnesota Office of Environmental Assistance (OEA), GreenPrint Council, Blandin Foundation and the State Education and Environmental Roundtable. The Caroline Foundation, Minnesota Department of Children, Families and Learning and the Minnesota Office of Environmental Assistance provided funding for the project.

The contributors to the final product included K-12 educators from around the state, Environmental and Nature Centers, Higher Education, State Agencies (MOEA, CFL, DNR), SciMath MN, Early Childhood Educators and the Minnesota Children's Museum. It provides a systems approach to environmental education that can focus the efforts of formal teachers and non-formal deliverers of environmental education to unify their many independent efforts to achieve the goal of environmental literacy. Because the Scope and Sequence is based on both state and national standards, it enables environmental education deliverers to build, adapt or integrate curriculum and assessments that are most appropriate for their particular grade level or audience.

Environmental literacy benchmarks help define the scope of knowledge students need to understand in order to become environmentally literate. These benchmarks are sequenced so that new knowledge is constructed on prior knowledge. Successful environmental education programs will build upon these benchmarks, utilizing the social and natural systems identified in their communities.

The five Key Systems concepts, which assist in understanding the application of each benchmark to environmental lessons, are to be used as a guide to formulate questions about the social and natural systems being examined. The Supporting Concepts provide further detail and clarification for the Key Systems Concepts.

The application section of the document deals with five applications of the Environmental Literacy Scope and Sequence. The first, application is to state and national standards. The second is the relationships between natural and social systems from the social systems perspective. The third section defines how the Environmental Literacy Benchmarks correlate with Minnesota's

Graduation Standards. The Fourth section is an example of how to apply the Scope and Sequence in classroom learning including a sample concept map. The last section has several sample lesson plans for familiarizing yourself and others with the Environmental Literacy Scope and Sequence. A copy of the Environmental Literacy Scope and Sequence is available for downloading on www.seek.state.mn.us.