

Brief Descriptions of the Competencies, Knowledge, and Dispositions listed in the Executive Summary

Competencies

Competencies are clusters of skills and abilities that may be called upon and expressed for a specific purpose. These include the capacity to:

- **Identify environmental issues** – including the ability to describe and provide evidence for the dimensions of the issue, human disagreements central to it, and factors that cause or contribute to it;
- **Ask relevant questions** – about environmental problems as well as human dimensions and historical or geographical features of an issue. This also includes the ability to ask higher-order questions aimed at discovering conditions that have implications for the issue;
- **Analyze environmental issues** – the interpretation and use of knowledge regarding physical, ecological and sociopolitical systems, and of information about stakeholders, their positions, beliefs and value perspectives. Also, this includes the ability to determine relevant factors and to discern interactions among those factors, and to predict likely consequences of issues;
- **Investigate environmental issues** – by gathering new information about an issue as well as locating and using relevant sources of additional information, synthesizing, and communicating the outcomes of the investigation;
- **Evaluate and make personal judgments about environmental issues** – constructing dispassionate evaluations and explanations based on available information and the beliefs and values of stakeholders, and articulating views about actions that may be warranted. Critical thinking is at the core of this competency;
- **Use evidence and experience to defend positions and resolve issues** – constructing and defending a sound evidence-based argument about what it will take to resolve or help resolve an issue; and
- **Create and evaluate plans to resolve environmental issues** – by assuming the responsibility for acting, frequently with others, and engaging in planning based on the environmental conditions, available resources, and sociopolitical contexts to resolve or help resolve issues.

Knowledge

Environmental literacy entails knowledge of:

- **Physical and ecological systems**—such as interdependent relationships in ecosystems; cycles of matter and energy transfer in ecosystems; interaction among earth’s major systems; the roles of water in Earth’s surface processes; climate change and how the effects of human activities on Earth’s climate are modeled; conservation of energy and energy transfer. This area also includes humans as variables in ecosystems and Earth systems, which includes concepts associated with: the ecosystem services and natural capital on which humans (and all life) depend; adverse human impacts to these systems; and humans as agents in the protection and restoration of these systems;

- **Social, cultural and political systems**-- an understanding of the various social, cultural, and political systems (e.g., kinship, agricultural, transportation, economic, and legal systems), as well as the historical (temporal) and geographic (spatial) contexts in which they have developed and now function. This area also includes civic participation and the beliefs/practices associated with environmental problem-solving;
- **Environmental issues**—including (1) knowledge of a variety of environmental situations that arise from biophysical impacts apparent in the natural world, and the causes and effects of those impacts; and (2) knowledge of environmental issues that arise from human conflicts about environmental problems and solutions, including the causes and effects of those conflicts;
- **Multiple solutions to environmental issues**—including knowledge of past, ongoing, and current efforts, as well as of proposed and future alternatives, aimed at helping to solve environmental problems. This category of knowledge includes the legacy of efforts--both success stories and failures--aimed at solving environmental problems using a number of dimensions (from scientific and technical to economic, regulatory or educational efforts);
- **Citizen participation and action strategies**--forms of citizen participation, action, and community service intended to preserve or improve the environment. Action strategies include restoration projects; consumer and economic action; effective communication strategies; political action; and collaborative solution seeking.

Dispositions

Dispositions are important determinants of behaviors, both positive and negative, toward the environment. Learners' dispositions toward the environment are thought to influence their willingness to recognize and choose among value perspectives, as well as their motivation to participate in public deliberations about environmental issues. They include:

- **Sensitivity**--caring and positive feelings toward the environment;
- **Attitudes, concern, and worldview**--learned predispositions to respond in a favorable or unfavorable manner toward objects, events, and other referents;
- **Personal responsibility**—a personal commitment and thoughtful processes that lead individuals to avoid or reduce behaviors that contribute significantly to negative environmental impacts as well as undertake behaviors that contribute significantly to positive impacts;
- **Self-efficacy**--the belief and/or feeling that people hold that they individually or collectively will be able to influence or bring about the environmental change for which they are working; and
- **Motivation and intentions**—willingness and verbal commitment to act based on beliefs or attitudes.