Wisconsin Environmental Literacy & Sustainability

Grades 9, 10, 11, 12

Adopted 2018

Connect

C1. Students develop and connect with their sense of place and well-being through observation, exploration, and questioning . ELS.C1

A. Perspective C1.A

h. Evaluate personal mental models of well-being, equity, social and environmental welfare, economic health, and concern for living beings. ELS.C1.A.H

B. Sense of Place C1.B

h. Analyze relationships between parts of local and global natural and cultural systems. Compare and contrast historical and current resource use, and analyze the effects on local, regional, and global natural and cultural systems. ELS.C1.B.H

C. Curiosity and Wonder C1.C

a. Investigate and analyze one's own curiosities about patterns that emerge from outdoor exploration to develop new questions, draw conclusions, or formulate new ideas or solutions. ELS.C1.C.H.A

b. Reflect and share how one's perspectives influence personal curiosity, the pursuit of knowledge, and respect for others and the environment. ELS.C1.C.H.B

D. Well-being C1.D

a. Analyze the effects of environment and time outdoors on mental, socio-emotional, and physical health. ELS.C1.D.H.A

b. Design and implement a home, school, or community wellness improvement plan that integrates the outdoors to develop mindfulness, confidence, and self-regulation; evaluate the outcomes, and communicate the results. ELS.C1.D.H.B

Explore

EX2. Students evaluate relationships and structures of natural and cultural systems and analyze their interdependence. ELS.EX2

A. Systems Thinking EX2.A

a. Recommend alternative models of systems to address different perspectives, define new boundaries, and achieve new outcomes. ELS.EX2.A.H.A

b. Examine nested systems within identified relationships and sub-perspectives of individual and group perspectives. ELS.EX2.A.H.B

c. Identify and analyze limitations in our understanding of systems and the outcomes. ELS.EX2.A.H.C

B. Natural Systems Emphasis EX2.B

h. Compare and contrast the competitive, predatory, and mutually beneficial interactions between different species and ecosystems and evaluate the impacts of each on the system. ELS.EX2.B.H

C. Cultural Systems Emphasis EX2.C

a. Assess the roles of individuals, government, and special interest groups in setting policies at the local, state, tribal, national, and international level; analyze the cultural and environmental dimensions of the policy; and propose a strategy to address concerns related to the policy. ELS.EX2.C.H.A

b. Design a solution for a natural resource scarcity issue using available resources in a different way or developing a new resource, and analyze intended and unintended consequences on sustainability in natural and cultural systems ELS.EX2.C.H.B

EX3. Students assess how diversity influences health and resilience of natural and cultural systems. ELS.EX3

A. Multiple Perspectives EX3.A

a. Compare parallel historical and contemporary sustainability issues and articulate the perspectives, including unstated, absent, under-represented groups and future generations, critique the balance of stakeholder interests in the outcome, and propose alternative solutions. ELS.EX3.A.H.A

b. Analyze and weigh relevance of sources through a disciplinary lens to determine how the author, context, audience, and purpose affect the reliability, limitations, and usefulness of a source. ELS.EX3.A.H.B

B. Natural Systems Emphasis EX3.B

a. Evaluate the impacts on health and quality of natural systems resulting from resource use at the global level and propose solutions to increase system resiliency. ELS.EX3.B.H.A

b. Evaluate and compare the characteristics of two communities and analyze how the diversity, health, and resilience of natural systems impact the quality and health of cultural systems. ELS.EX3.B.H.B

c. Design and evaluate solutions that improve environmental quality or implement sustainable practices, including but not limited to areas lacking desired resources. ELS.EX3.B.H.C

C. Cultural Systems Emphasis EX3.C

a. Evaluate, from a variety of cultural perspectives, the concept of shared natural resources and what is needed to maintain its health and accessibility for all. ELS.EX3.C.H.A

b. Evaluate how groups have addressed issues of equity in environmental health and sustainability. ELS.EX3.C.H.B

c. Analyze the use and distribution of resources worldwide and the impact on populations, including historically marginalized populations. ELS.EX3.C.H.C

d. Analyze, compare, and critique the ethics of societal actions and impacts of ethnocentrism. ELS.EX3.C.H.D

EX4. Analyze the interactions and outcomes of cycles and flows in natural and cultural systems. ELS.EX4

A. Natural Systems Emphasis EX4.A

h. Apply the laws of conservation of mass and energy to analyze cycles and flows of Earth's systems, including: the cycling of matter and flow of energy among the biotic and abiotic components in the biosphere, atmosphere, geosphere, and hydrosphere; the transfer and loss of energy and mass at each link in an ecosystem ; and the roles of photosynthesis, cellular respiration, and carbon sequestration in the global carbon cycle. ELS.EX4.A.H

B. Cultural Systems Emphasis EX4.B

a. Examine the role of renewable and nonrenewable resources in creating sustainable economies. ELS.EX4.B.H.A

b. Analyze how the movement of natural resources through acquisition, production, consumption, and disposal impact sustainability of local, regional, and global systems. ELS.EX4.B.H.B

EX5. Investigate and analyze how change and adaptation impact natural and cultural systems. ELS.EX5

A. Decision Making EX5.A

h. Argue a perspective regarding a sustainability issue by examining individual and group actions, critiquing the decision-making processes, describing shared and conflicting values and principles, and assessing the impact on natural and cultural systems. ELS.EX5.A.H

B. Natural Systems Emphasis EX5.B

a. Evaluate how feedback loops impact natural systems over time and predict adaptive strategies. ELS.EX5.B.H.A

b. Create a model that demonstrates how to restore or increase the stability of a system in response to change. ELS.EX5.B.H.B

c. Examine historic and projected climate patterns to evaluate potential impacts on the stability of natural and cultural systems and identify strategies for adaptation and mitigation. ELS.EX5.B.H.C

d. Create and interpret models to describe how change in the flow of energy into and out of Earth's systems by human and nonhuman causes impacts natural and cultural systems, such as climate. ELS.EX5.B.H.D

C. Cultural Systems Emphasis EX5.C

a. Analyze historical and contemporary strategies to solving sustainability issues to develop alternative approaches for addressing parallel issues in the future. ELS.EX5.C.H.A

b. Evaluate how natural resource use, practices, and technological advances impact natural and cultural systems. ELS.EX5.C.H.B

Engage

EN6. Students analyze the dynamic balance between natural and cultural systems. ELS.EN6

A. System Structure and Outcomes EN6.A

a. Analyze the role of feedback loops in reinforcing the interconnectedness of parts within a system and the consequences of actions by each of those parts on the whole. ELS.EN6.A.H.A

b. Identify and analyze leverage points and cause and effect relationships within a system. ELS.EN6.A.H.B

c. Demonstrate how ideas, parts, relationships, and perspectives change over time, generating patterns and trends ELS.EN6.A.H.C

B. Rights & Responsibilities EN6.B

a. Evaluate and justify one's own civic ideals by providing examples of personal rights and responsibilities related to one's place. ELS.EN6.B.H.A

b. Analyze and evaluate impacts of personal and collective responsibility on the environment and community and develop solutions to conflicts that arise to minimize the impact on natural and cultural systems. ELS.EN6.B.H.B

c. Analyze environmental laws created for local and global environments. ELS.EN6.B.H.C

C. Models of Sustainability EN6.C

h. Identify and propose solutions to sustainability issues through use of concepts such as biomimicry, cradle-to-cradle principles of manufacturing, "Triple Bottom Line" business framework, slow vs. fast economic or food systems, carbon sequestration, mitigation technologies, and carbon markets. Weigh related measures of supply, demand, impact, and payback. ELS.EN6.C.H

EN7. Students engage in experiences to develop stewardship for the sustainability of natural and cultural systems. ELS.EN7

A. Inquiry and Investigation EN7.A

a. Research issues related to environmental sustainability, critiquing the economic, environmental, and societal aspects of the issue, and examine how citizen action and public opinion can influence outcomes. ELS.EN7.A.H.A

b. Evaluate the needs of a local community to identify potential projects related to environmental sustainability. ELS.EN7.A.H.B

c. Identify and describe perspectives of stakeholders in the issue. ELS.EN7.A.H.C

B. Design and Implementation EN7.B

a. Form and evaluate personal views, engage in informed deliberation, and use creativity to make previously unrecognized connections. ELS.EN7.B.H.A

b. Plan, execute, and evaluate a project that would bring awareness to a sustainability issue and contribute to creating a sustainable environment. ELS.EN7.B.H.B

c. Demonstrate civic leadership skills to make personal and collective decisions resulting in measures that promote healthy and sustainable communities. ELS.EN7.B.H.C

C. Evaluation and Reflection EN7.C

h. Analyze the outcomes of the stewardship experiences with a variety of audiences reflecting different perspectives; evaluate the effectiveness of the project in terms of balancing interests of natural and cultural systems. ELS.EN7.C.H