

TABLE 1

Environmental literacy components (Adapted from Hollweg et al. 2011).

Environmental Literacy Component	Explanation of Component	Inclusion of Component in Lessons
Knowledge	Knowledge includes (1) Physical and ecological systems, (2) Social, cultural, and political systems, (3) Environmental issues, (4) Multiple solutions to environmental issues, and (5) Citizen participation and action strategies.	Throughout the lessons, students learn about their local ecosystems, native species, and local history while investigating ecosystem and habitat loss due to invasive species and how native restoration can positively affect their local environment. Lastly, students learn how to sow seeds for native garden restoration.
Dispositions	Students' sensitivity, attitudes, extent of personal responsibility, locus of control, and motivations toward the environment.	On Day 1 and 2, we develop students' sensitivity and attitudes toward the environment by identifying nature and wild things within their community. Day 3 and 4 promotes students' locus of control by learning of possible native plants and how to properly grow those plants in jiffy strips.
Competencies	Competencies are clusters of skills and abilities that share many similarities with scientific skills and abilities (e.g., identifying environmental issues, asking relevant questions, etc.)	Throughout these activities, we promote scientific and environmental skills by asking questions, encouraging students to elaborate on their thinking, help students collaborate, and use data to make conclusions.
Context	Contexts influence the way an individual thinks about, addresses, and resolves environmental issues.	The school and local community provides context for the investigation and students to act as citizen scientists, promoting their personal and social contexts.
Environmentally responsible behaviors	"[E]xpression of knowledge, dispositions, and competencies within a context" (p. 3-12).	Eco-management is the main focus of this investigation as it ends with sowing seeds of native plants within the classroom.

TABLE 2

Example questions to promote environmental ethic in students.

Environmental Disposition Component	Explanation of Component	Inclusion of Component in Lessons
Recognizing nature	Students identify nature as a local, rather than foreign, phenomenon.	<p>On Day 1, we engage the students by asking “What comes to mind when you hear the word <i>wild</i>?” After reading <i>Finding Wild</i>, we extend with “What ‘wild’ things do you think we would find on the school’s grounds?”</p> <p>In Day 2, we ask the students why they chose to go to certain locations and whether these locations are considered nature.</p>
Justifying nature	Students discern the value of nature by critiquing various uses of nature.	On Day 1, we ask students where they like to play. When students respond with natural places, we have them state why they prefer that location over others. We broaden our conversation from student play to other uses of nature, such as scientists’ role with nature, Indigenous peoples’ role with nature, businesses’ role with nature, etc.
Examining nature’s impact on humans	Students examine how nature impacts human society (e.g., large cities are founded near large rivers because of trade opportunities, etc.).	On Day 3, to help students not only think about how nature impacts humans currently, we also ask students “Indigenous populations lived near the prairies and would help them grow; how do you think the prairies helped Indigenous populations survive?”
Examining human’s impact on nature	Students examine how human’s impact nature (e.g., deforestation, urban sprawl, etc.).	On Day 3, we ask this question in tandem with the Examining nature’s impact on humans section; “Indigenous, or native, plants and animals seemed to support each other well, but outside organisms didn’t. How do you think white people coming to this area affected the people, the plants, and the animals?”
Responsible preservation and conservation	Students debate and evaluate humanity’s role in preservation and conservation of nature.	On Day 3, we begin to challenge the students to think of themselves as a part of this ecosystem and their role within it. We discuss the following question with small groups as they work on their species cards; “In what sense are humans a part of this environment?” “If we had a card for humans, how many points do you think they would have?” “In what sense do you think humans should act like a one-point card and only take care of themselves or act like a three-point card and take care of the other species around them? Why?”

Note: Adapted from Roberts and Kruse 2019