

Revised 'Vermont's Framework on Standards and Learning Opportunities (2000)' Related to Sustainability

The Vermont's Framework of Standards and Learning Opportunities, the K-12 curriculum framework that stipulated what teachers were expected to teach, contains a number of standards that can be addressed through students' learning about invasive species. These include Vital Results Standard 3.9, "Sustainability," and Vital Results Standard 4.6, "Sense of Place".

There is ample opportunity to incorporate invasive plant outreach in management in the K-12 curriculum; some examples of which are presented in italics. To read more about the revised VT Standards visit

<http://www.communityworksinstitute.org/cwresources/programs/edsustain/vtstand.html>.

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Vital Results: *Personal Development Standards*

Making Decisions Sustainability

3.9 Students make decisions that demonstrate understanding of natural and human communities, the ecological, economic, political, or social systems within them, and awareness of how their personal and collective actions affect the sustainability of these interrelated systems. This is evident when students:

Pre K-4	5-8	9-12
a. Identify items that they consume on a daily basis and analyze the resources used in producing, transporting, using, and disposing of these items, including the origins of the resources;	aa. Conduct a life-cycle analysis (e.g., production, distribution, consumption, disposal) for both synthetic and natural products (e.g., toothbrush, maple syrup, automobile). including the effects of these life-cycles on the sustainability of a natural and human community;	Evidence cc. and dd. applies, plus
b. Distinguish between personal wants and needs and identify how marketing and advertising inform their consumption patterns;	bb. Collect data in order to investigate and analyze how personal consumption patterns affect the sustainability of natural and human communities (e.g., buying local and imported apples in Vermont);	aaa. Prepare an impact assessment (which includes ecological, economic, political, and social factors) that analyzes the effect of a particular product's or project's life-cycle on the sustainability of a natural and human community;
c. Identify and practice ways to repair, re-use, recycle (e.g., use both sides of paper), and design and implement a plan to monitor personal resource consumption;	cc. Identify and practice ways to repair, re-use, recycle (e.g., collect and redistribute leftover household paint), and design and implement a plan to monitor community resource consumption (e.g., survey community water, electric, and/or fuel use);	bbb. Collect data in order to investigate and analyze the sustainability of societal consumption patterns that have direct and indirect impact on the local and global environment, economy, and society (e.g., fuel efficiency of vehicles).
d. Explore local natural and human communities (e.g., vernal pools, farms, mines, cities), identify the systems within them, and what is required for these communities to be sustained. <i>(Identify an intact natural community and one infested with invasive plants.)</i>	dd. Demonstrate understanding that natural and human communities are part of larger systems (e.g., farms as part of the regional watershed and food system for cities, a mine as part of the regional economy) and that the interrelationships between all systems affect their sustainability. <i>(Identify an infested site next to a non-infested site and design an activity to have students predict the spread and movement of plants between the two communities.)</i>	

Vital Results: Civic/Social Responsibility Standards

Understanding Place

4.6 Students demonstrate understanding of the relationship between their local environment and community heritage and how each shapes their lives. This is evident when students:

Pre K-4

- a. Demonstrate knowledge and history of local environment (e.g., soils, forests, watershed) and how their community relies on its environment to meet its needs (e.g., nutritional, recreational, economic, emotional well-being) *(Create a timeline of introduction of the most common invasive plants. Design activities to have them think about why they were introduced—garlic mustard to eat, burning bush because of its' foliage, etc.);*
- b. Describe the role of agriculture, forestry, and industry on the development of their local community over time;
- c. Demonstrate knowledge of past and present community heritage (e.g., traditions, livelihoods, customs, stories, changing demographics, land use) and recognize ways in which this heritage influences their lives.

5-8

- aa. Apply knowledge of local environment through active participation in local environmental projects (e.g., work with local planning board to analyze existing agricultural land use from a variety of perspectives) *(Have students help remove invasive plants.);*
- bb. Explore the interrelationship between the local environment and the local community heritage (e.g., settlement patterns, tourism, hunting, agriculture) *(Have students visit old cellar holes and homesteads and document what plants they see. Discuss invasive plant agents and vectors for spread.);*
- cc. Explore and participate in sustaining or building on unique and valued elements of past and present community heritage (e.g., survey community to improve access to town meeting).

9 - 12

- Evidence aa. and cc. applies, plus
- bbb. Evaluate and predict how current trends (e.g., environmental, economic, social, political, technological) will affect the future of their local community and environment. *(Discuss how development and forestry activities can affect the introduction and spread of invasives. How does climate change affect things?)*