



Healthy Soils Voc-Tech Curriculum Project (Ref #142)

FY25 - Quarterly Report #2

December 2024 - January 2025

The Healthy Soils Voc-Tech Curriculum Design Team has met bi-weekly over the last three months. Sessions included:

- Conversations facilitated by No Loose Braids aimed at strengthening the capacity of Environmental Science instructors at Minuteman to prepare students for culturally relevant and historically accurate conversations about colonization and its impacts on Nipmuc lands and peoples;
- Designing and revising the overall purpose, guiding questions, and lesson plans for the curriculum itself (see Appendix A at the end of this report for the most up-to-date version of the curriculum map);
- Designing and revising evaluation methods which include: 1) pre/post survey to assess the curriculum's impact on student knowledge and skill development; 2) short, open-ended written surveys, administered to students on a weekly basis, to gather students' reflections on their own learnings, questions, and feedback for the Curriculum Design Team.

During these meetings, the team has discussed Nipmuc history, the evolution of contemporary conservation movements, technical approaches to measuring soil health, and more. The team has identified the following overall goals for the curriculum, which will be revised at the end of the quarter in accordance with student feedback. Through the course, students will:

- Develop a critical understanding of Western environmentalism and conservationism;
- Understand how the political histories of land impact soil health;
- Understand how the history can be addressed to improve land stewardship (and as a result, improve soil health) in collaboration with Indigenous groups;
- Be equipped with tools to engage in respectful relationships and collaborations with local Indigenous stewards as they prepare to enter professional roles in land management and conservation;
- Be introduced to soil health principles and practices as outlined in the Healthy Soils Action Plan and other associated projects.



Our team is now preparing for program implementation, which will begin on Monday, February 3rd, 2025. We are on track to complete the eight week-long curriculum in May, with students presenting their final projects during the week of May 5th. Units will engage students in hands-on learning through land walks, interactive lectures, readings, and soil testing labs.

We will be invoicing \$9,718.75 for the month of January, which brings us to a total of \$27,378 for the project so far in FY25. We have recorded the use of \$700 in matching funds this quarter. We expect to continue meeting regularly throughout the quarter to update the curriculum map in response to student feedback, and to ensure smooth implementation. We anticipate the development of the “Resource for Implementing the Healthy Soils Voc-Tech Curriculum” (Task 5) to begin during Q4 of FY25 and be complete by Q1 of FY26.



Appendix A - Curriculum Map

Healthy Soils

2024-2025

Description: The Healthy Soils Voc-Tech Curriculum is an educational program that will challenge students to deepen their understanding of soil health and to critically examine contemporary conservation and restoration practices. The program will start by grounding students in the historical and political context of land management practices over the last several thousand years, and outline the impact that colonization has had on landscapes in Massachusetts. Through reading, conversation, hands-on activities (land walks, soil testing, and other technical skill development), students will build technical environmental science skills, as well as wrestle with the implications of different real-world land-management practices. Students will apply these concepts to broader questions of environmental health and resilience. The curriculum is heavily informed by Indigenous ways of knowing and frameworks of right relationship with land and stewardship of the earth. Units include a strong focus on respectful and reciprocal collaborations with the earth, Indigenous stewards, Tribal governments, and community members, toward working together to care for the land. The course will culminate with a project where students apply the Indigenous frameworks and technical skills learned throughout the course to create a set of data and materials that will support land justice efforts led by local Indigenous land stewards.

Course Benchmarks: The curriculum must meet state standards and educational objectives for high school students in Massachusetts. It should encompass learning objectives related to soil health, the historical and political context of land management practices, and environmental science. Additionally, the curriculum should focus on developing students' skills to effectively, respectfully, and ethically collaborate with indigenous partners, and build students' technical research skills. To be successful, this curriculum must highlight that Traditional Ecological Knowledge cannot exist in the absence of indigenous people. All content related to indigenous ways of knowing and specific location-based projects (ex. Cedar Swamp) must directly credit No Loose Braids.

Course Essential Questions

- How has the political history of the land we inhabit in Massachusetts impacted the health of the land and the inhabitants of the land, and how can this history be addressed to improve land stewardship?
- How have different land management practices (perspectives, ways of thinking) impacted soil health and the way we experience our landscapes?
- What unique roles can we play in maintaining the health of our soils, and our earth?
- How can we redefine the goals of land stewardship? How can we work together toward those goals?

Course Units/Dates

Unit 1: Feb 3, 4, 5 (half-day), 6

Goal:

Major Topics

- Group agreements

Course Resources and Activities

Assigned readings to support discussion:

- Fresh Banana Leaves: Chapter 1

• Provide historical context • Lay foundation for conversations and work that will happen throughout the quarter	• Foundations for developing respectful relationships with the original stewards of land in MA • History of colonization in MA and its impact on the overall health of local landscapes	No Loose Braids visit on Feb. 6: understanding colonization, sovereignty, stewardship, and respectful relationships from the experience of Nipmuc tribal members <i>Additional resources to be added, as appropriate:</i> • https://www.zinnedproject.org/materials/an-indigenous-peoples-history-of-the-united-states-for-young-people/ • https://www.zinnedproject.org/materials/teaching-critically-lewis-and-clark • https://www.zinnedproject.org/materials/color-line-colonial-laws
Unit 2: Feb 24, 25, 26, 27 Goal: • Students explore the history of land management practices – and corresponding bylaws and regs – in New England • Students connect land management practices with their impacts on the climate and environment Guiding questions: • What is the story of this place? How has it changed over time? Why? • Who is the land here? Who are the indigenous stewards?	• History of colonization in New England • History of conservation and land management practices and the impact of this history on the climate and environment • History of conservation and land management practices and the impact of this history on local Indigenous peoples	<i>Assigned readings to support discussion:</i> • Fresh Banana Leaves: Chapter 1 <i>Additional resources to be added, as appropriate:</i> • resources on the history of land management in MA • Data and analysis from 2023 Healthy Soils Action Plan

What are we noticing when we look at the physicality of the land? How has the history of the place shaped and informed that?		
Unit 3: March 10,11,12 (half-day) 13 Goal: - Introduce students to technical soil health vocabulary and testing - Students conduct soil sampling and analysis - Students explore the history of land management practices – and corresponding bylaws and regs – in New England - Students connect land management practices with their impacts on the climate and environment Guiding questions: - What is the story of this place? How has it changed over time? Why? - Who is the land here? Who are the indigenous stewards? - What are we noticing when we look at the physicality of the land? How has the	- Soil origin, texture, and quality - Defining, assessing, and measuring soil health (HSAP 2023) - Spotlight on soil organic carbon (HSAP 2023) - History of colonization in New England - History of conservation and land management practices and the impact of this history on the climate and environment - History of conservation and land management practices and the impact of this history on local Indigenous peoples	<i>Technical soils labs:</i> - Soil sample lab - Soil auger sampling lab <i>Additional resources to be added, as appropriate:</i> - resources on the history of land management in MA - Data and analysis from 2023 Healthy Soils Action Plan No Loose Braids visit on March 10 or 11 (TBD): guided walk around campus with NLB. Discussion of land at Minuteman High School – different land management practices, dynamics between indigenous stewards, conservation bodies, regulations, etc. – examining constructs we are currently operating within and introducing new paradigms through indigenous wisdom Group reflection #1: Journal and/or audio interviews with students and NLB youth reflecting on their learnings and experiences in the class

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Unit 4: March 27,28 Goals: - Students conduct soil sampling and analysis Guiding questions:		<i>Technical soils labs:</i> - Conduct soil sieve analysis, including moisture content analysis. - Compare sieve analysis results to field texture analysis No Loose Braids leads exploratory field trip to Cedar Swamp in Douglas State Forest Group reflection #2: Journal and/or audio interviews with students and NLB youth reflecting on their learnings and experiences in the class
Unit 5: April 7, 8, 9, 10 Goals: Guiding questions: - How can we weave our resources and skills to carry this work together?		<i>Students apply their gained knowledge to do a case study of areas near MM or other locations TBD.</i>
Unit 6: April 28, 29, 30 Goals:		<i>Students apply their gained knowledge to do a case study of areas near MM or other location TBD.</i>

- Students reflect on learnings - Students work on final projects Guiding questions:		
Unit 7: May 1 Goals: - Students reflect on learnings - Students work on final projects Guiding questions:		<i>Students apply their gained knowledge to do a case study of areas near MM or other location TBD.</i> Group reflection #3: Journal and/or audio interviews with students and NLB youth reflecting on their learnings and experiences in the class
Unit 8: May 5,6,7,8 Goals: - Students present final projects Guiding questions:		<i>Students present their work for feedback.</i> NLB and Linnean Solutions to attend presentations

