



## 4-H Maple Sugaring 101: From Sap, to Syrup, to Sales Instructional Content Guide for Volunteers and Club Leaders

### Unit 1: Maple Woods Work

#### Goals:

1. Provide educational experiences related to maple forests and collecting maple sap for syrup production.
2. Provide experiences rooted in positive youth development for Maine 4-H youth. (See PYD Planning Guide on the last page.)
3. Facilitate the learning and practice of entrepreneurial and workforce skills for non-timber forest-based occupations in northern New England.

Learning Objectives	Activities and Resources (Instruction is virtual or remote unless noted as an in-person activity) <b>Three Types of Selected Student Resources (SSR)</b> <b>Orange- Activity or Worksheet</b> <b>Black- Informational Resource</b> <b>Purple- Lesson Plan led by an Adult</b>	Citations of Sources and References
Identify the history of maple sugaring and Maine maple forests	<b>SSR 1A</b> - <a href="#">Map of Our Tribal Nations</a>	Carapella, A. (2013). ( <b>SSR 1A</b> )  Vermont Evaporator Company (April 10, 2020).  Vermont Evaporator Company (2023).
Compare and contrast characteristics of red and sugar maple trees	<b>SSR 1B</b> - <a href="#">Tree Identification Activity</a>  <b>SSR 1C</b> - <a href="#">Maple Tree Identification Chart</a>	New York State Maple Producers Association (2017). Document file pp.31-32 ( <b>SSR 1B</b> )  Maine Forest Service (2008). ( <b>SSR 1C</b> )
Identify red maple, sugar maple,	<i>In-person activity at host site</i>	<i>Host Guide: Week 1-Woods Work, Item #1</i>

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and at least three other local hardwood trees		New York State Maple Producers Association (2017). p.16 ( <b>SSR 1B</b> )  Maine Forest Service (2008). ( <b>SSR 1C</b> )
Identify equipment for tapping trees and storing sap	Activity by UMaine Extension Staff	Cornell Maple Program (2020). Vacuum, p.57  Wolfe, L.M. (2019). pp. 43-44
Measure the Diameter at Breast Height (DBH) and describe its relevance to tapping maple trees	<i>In-person activity at host site</i>	<i>Host Guide: Week 1-Woods Work, Item #2 &amp; #3</i>  Cornell Maple Program (2020). p.9-10  Wolfe, L.M. (2019). pp.25-27
Discuss at least two different sap collection systems	<b>SSR 1D - <a href="#">Tubing Layout Design</a></b>	Cornell Maple Program (2020). pp.30-33  NH Agriculture in the Classroom (2023). ( <b>SSR 1D</b> )

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Describe the sugar content of maple sap	<b>SSR 1E</b> - <a href="#">How Sweet is Maple Sap</a>	New York Agriculture in the Classroom (nd) <b>(SSR 1E)</b>
Recognize how to measure the sugar content of maple sap	Activity by UMaine Extension Staff	Cornell Maple Program (2020). p.101
Illustrate the time and conditions to tap trees	<b>SSR 1F</b> - <a href="#">Maple Syrup Harvest Season</a>	VanDenbergh, S. (2022). <b>(SSR 1F)</b>
Identify two ways to create optimal conditions for sap storage	<i>In-person activity at host site</i>	Wolfe, L.M. (2019). p.45  <i>Host Guide: Week 1-Woods Work, Item #6 &amp; #7</i>
Create a plan to collect, store and transport sap for boiling	<b>SSR 1G</b> - <a href="#">Planning for Tapping and Storage</a>	Cameron, J. (1995). Document file pp. 41-43, Sections: <i>How do you tap a tree?, How many tap holes in a tree?, Buckets or Tubing, Sap Collection and Storage, Wrapping It Up (SSR 1G)</i>  Cornell Maple Program (2020). pp.31-68 & 76  Wolfe, L.M. (2019) pp.32-45

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Recognize one data collection and record keeping method for tapping trees	<b>SSR 1H - <a href="#">Sampling and Estimation for Taps</a></b>  <i>In-person activity at host site</i>	Cornell Maple Program (2020). pp.22-25 ( <b>SSR 1H</b> )  <i>Host Guide: Week 1-Woods Work, Item #8</i>
<i>Advanced-Demonstrate one data collection and record keeping method for tapping trees<sup>1</sup></i>	<b>SSR 1H - <a href="#">Sampling and Estimation for Taps</a></b>	Cornell Maple Program (2020). pp.22-25 ( <b>SSR 1H</b> )
Demonstrate how to tap a maple tree for tubing and bucket collections	<i>In-person activity at host site</i>	<i>Host Guide: Week 1-Woods Work, Item #4 &amp; #5</i>
Recognize other agriculture practices for a sustainable maple forest	<b>SSR 1I - <a href="#">Food Web</a></b>  <i>In-person activity at host site</i>	New York State Maple Producers Association (2017). Document file pp.27-28. ( <b>SSR 1I</b> )  <i>Host Guide: Week 1-Woods Work, Item #9</i>

<sup>1</sup> This learning objective can lead to instructional alignment with AFNR Standards: CRP.07. Employ valid and reliable research strategies; CRP.07.01. Select and implement reliable research processes and methods to generate data for decision-making in the workplace and community. Please note that by using this guide you may be asked to provide input for improvements to the program. Andrew Hudacs, [andrew.hudacs@maine.edu](mailto:andrew.hudacs@maine.edu), Version January 2024



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## Positive Youth Development (PYD) Planning Guide

### 4-H Maple Sugaring 101

Please list the ways in which you plan to incorporate each of the PYD Objectives (below) into your learning experiences.

<p style="text-align: center;"><b>BELONGING</b></p> <p><i>Objective: Youth will feel connected to their peers</i></p> <p>How will you create a sense of belonging in your activities and meetings?</p>	<p style="text-align: center;"><b>SPARKS</b></p> <p><i>Objective: Youth have the opportunity to explore something they care about, their “sparks”</i></p> <p>What “sparks” will you be facilitating in your activities?</p>
<p style="text-align: center;"><b>HANDS-ON</b></p> <p><i>Objective: Youth will “learn by doing” a hands-on experience</i></p> <p>What hands-on experience will you be facilitating during the on-site visits or at another time?</p>	<p style="text-align: center;"><b>REFLECTION</b></p> <p><i>Objective: Youth have the opportunity to reflect on their learning experience</i></p> <p>How will you facilitate youth reflection in your activities?</p>

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