



FORESTS OF THE FIRST STEWARDS

Higher Education Discussion Guide

Forests of the First Stewards | Episode 3 | Curriculum Outline

LEARNING OBJECTIVES:

1. Analyze how forests provide renewable materials for cultural traditions, technology, and modern industry.
2. Evaluate the integration of traditional ecological knowledge and scientific education in forestry programs.
3. Examine how education systems support intergenerational knowledge being transferred and sustainable resource management.

LEARNING PROCEDURE:

1. Show students the third episode "Products and Education"
2. Deliver a lecture that provides more background information.
3. Outline instructions for individual and group activities and due dates.
4. Reflection and Discussion
5. Assessment (Quiz): Can take place during the next class period or submit online.

EPISODE 3 OVERVIEW *PRODUCTS AND EDUCATION*

Have you ever thought about how forests connect to the products we use, the traditions people carry forward, and the future of communities?





In this episode, we explore how the Menominee Forest supports both cultural practices and modern innovation by using its resources.

We begin by learning the art of basket weaving, where forest materials are transformed into functional and meaningful items. Through this process, we see how cultural knowledge, craftsmanship, and the forest are deeply connected, and how these traditions have been passed down across generations.

Next, we visit the College of Menominee Nation's Sustainable Development Institute (SDI), where students and educators are working to bridge cultural teachings with modern science and technology. Here, we explore how education is preparing the next generation to continue responsible forest stewardship.

Finally, we walk the Menominee Phenology Trail, where we learn how observing seasonal changes in the forest helps guide stewardship practices and reinforces the connection between people and the land.

Through these experiences, students will see how forests support not only products and economies, but also culture, education, and the future of sustainable communities.

SUMMARY OF ACTIVITIES:

Reflection and Discussion: 15 to 20 minutes:

- Place students in group of 2 to 4
- Give them 15 minutes to discuss the following topics and have groups present a summary of their discussion/ share their perspectives with the class.
- Potential Topics:
 - The importance of preserving cultural traditions such as basket weaving
 - How phenology informs TEK and management
 - Impacts of climate change on phenology
 - How TEK and western science can be used together to understand and steward natural resources





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Science Communication (Group) Activity: Divide students into groups of 2 to 4. Students will be expected to create at least 2 short form videos educating the public about the following:

1. History of, cultural and ecological significance of basket weaving for the Menominee.
2. Phenology and its uses in Menominee TEK and western science

Interview (Individual) Activity: Each student will be required to interview a faculty or staff member from either the College of Menominee Nation SDI or Menominee Tribal Enterprises and write an article about them to be published on SAF's #forestproud website and featured in the eForester newsletter. Students will be graded on the following criteria:

1. Professional correspondence with their interviewee.
2. Professional correspondence with #forestproud team.
3. Well written article (3 to 5 paragraphs) including necessary citations.

Students will be expected to ask the following questions in their interview and include responses in their article:

1. Interviewee's name, title, position, and organization.
2. How long have they been with their organization?
3. What is the mission of their organization?
4. What is their primary role in their organization?
5. Professional background
6. How does their organization and work support the Menominee tribal forest?
7. Why is their work important to them?
8. What does #forestproud mean to them?

Assessment: Quiz

This quiz will serve as an assessment to measure students' retention of information. This quiz can be administered in class or as an online assignment. Quiz should consist of 5 to 10 questions.

Potential Quiz Questions:

1. What is phenology and what role does it play in Menominee culture and management?
2. Name three species of trees found in the Menominee forests and their uses.
3. What Menominee tradition is being impacted by the Emerald ash borer?
4. When was the Sustainable Development Institute established by the College of the Menominee Nation?
5. Name three environmental cues that plants and animals respond to.
6. What is the Midwest Climate Adaptation Science Center (MW CASC) Tribal Research Experience for Undergraduates (REU)?
7. What is the Menominee name for the April full moon? (Multiple choice)
8. What is the Menominee name for the May full moon? (Multiple choice)
9. What is the Menominee name for the June full moon? (Multiple choice)
10. What is the Menominee name for the August full moon? (Multiple choice)



ADVANCED VOCABULARY:

1. Emerald ash borer (EAB) - (*Agrilus planipennis*) is an invasive insect species, native to Eastern Russia, Northern China Japan and Korea. This species causes widespread destruction of Ash trees. ([USDA National Invasive Species Information Center](#))
2. Phenology - The science of synchronization or timing of natural events in the plant and animal world as they correspond to either seasons or certain times of year. ([College of the Menominee Nation: Sustainable Development Institute \(SDI\)](#))

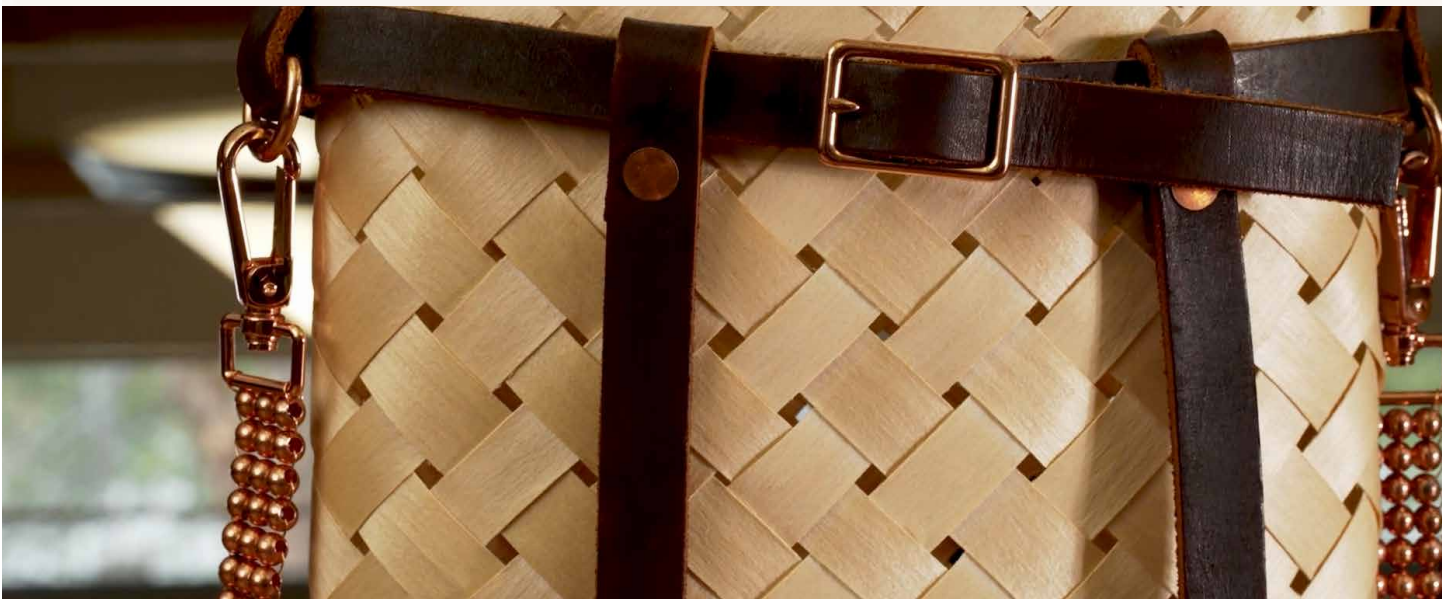
BACKGROUND INFORMATION:

BASKET WEAVING:

The Black ash (*Fraxinus nigra*) is a tree species native to eastern Canada and the northeastern US. This tree is found in the forest of the Menominee Tribal reservation. This species is typically found in wetland/swampy habitats. Black ash has been used for generations by the Menominee in basket weaving, an art form that is at the center of Menominee cultural identity. Traditionally, the Menominee harvests Black ash in June and July. The wood strips from the trees are processed by pounding the logs to remove water and separate growth layers. Thin strips are soaked in water to prevent them from breaking during the weaving process. ([Mistry, 2024](#))

Basket weaving is culturally significant across Native American cultures. Basket weaving traditionally was not only a way for tribes to showcase their individual uniqueness, but they also served a functional role in the daily lives of Native tribes like the Menominee. Baskets served as an integral item in Native communities across the US as they were used to carry food, water, clothing, and other belongings. These baskets are not only works of art that showcase creativity, but they are also generations of tradition woven into patterns with intention. ([Basket Weaving's Importance in Native American Culture](#))

For the Menominee tribe, basket weaving is not a thing of the past. Instead, it is being revived and kept alive through workshops, lectures, and public outreach. Though there is a strong resurgence of the tradition, the emerald ash borer





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(EAB), an invasive insect, poses a significant threat to the Black ash species and the ecosystems and culture that relies on them. It is reported that forests with the presence of the EAB see more than 90% of their ash species die within six years of the EAB's introduction to the area. EABs live in the bark of ash trees, feeding the tissues of the tree. The EAB has been able to spread to other forests when infested trees are transported to non-infested areas. EAB is an example of an ecological issue that not only impacts the forest, but those that rely on it. In the face of this threat, the Menominee tribe is working diligently to preserve as many strips as possible of Black ash bark before the species is no longer present. ([Mistry, 2024](#))

Throughout the history of, the Menominee have and continue to utilize wood from their forest to build and sustain their culture. Basswood is traditionally used for rope and wigwams; birch is used to build canoes. Ironwood is used to carve and make weapons. ([Pearce, 2023](#))

COLLEGE OF MENOMINEE NATION - SUSTAINABLE DEVELOPMENT INSTITUTE (SDI):

The Sustainable Development Institute was established in 1993 by the College of the Menominee Nation with the institute mission being to provide a mechanism for the Menominee to use their relationship with their forests to guide their knowledge, experiences and expertise of sustainable management and new sectors and economies. The institute provides a 2-year degree that provides students with the foundation to pursue a bachelor's degree. The SDI supports the advancement of sustainable management through various initiatives:

- Community education about sustainability
- Promoting, measuring and reporting on sound sustainable institutional practices
- Fostering collaboration within the Menominee Tribal College, tribal community and external partners in sustainability.

The SDI basis their institutional identity on their Menominee land ethic, an ethic rooted in respect for all things, living and non-living. The SDI integrates TEK into research, sharing intergenerational knowledge, storytelling, and outreach. One example of how the SDI is integrating TEK and technological innovation is the Midwest Climate Adaptation Science Center (MW CASC) Tribal Research Experience for Undergraduates (REU). This program is a professional opportunity for college students. The internship provides students with research experience where they perform careful and respectful observations of ecosystems informing responses to ecological change. Interns use TEK and western science approaches to develop a catalog of field observations, inventorying biodiversity, ecological relationships, weather, etc. Observations and data collected is used to further understand regional climate change and the ecological impacts. ([College of Menominee Nation - Sustainable Development Institute \(SDI\)](#))

MENOMINEE PHENOLOGY TRAIL:

Phenology is the study of the synchronization of natural events as plants and animals correspond to either seasons or at certain times of the year. Plants and animals are sensitive to environmental cues like changes in temperature, amount of sunlight, day length, and precipitation. These cues are important to plants and animals as they often impact the initiation or cessation of important biological processes.

The Menominee tribe has used phenology or "nature's calendar" for generations to inform cultural practices, ceremonies and rituals. Menominee culture centers around the change of seasons, animal migrations and spawning, and the availability to harvest food such as wild berries. The Menominee traditionally harvests Black ash in June and July; this coincides with the ripening of wild strawberries. Phenology is essential to how the Menominee have built



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their traditional wisdom and cultural knowledge. Phenology guides when and how the Menominee engage with nature and steward their forests. The Menominee names for the monthly moon cycles are a great example of how phenology is used to inform TEK and stewardship.

- April = "Sugar Making Moon"
- May = "Budding Moon"
- June = "Strawberry Moon"
- August = "Blueberry Moon"
- September = "Rice Threshing Moon"
- October = "Falling Leaves Moon"

By using phenology / "nature's calendar", the Menominee has a deep connection with nature and understanding when resources are available. This allows them to build management around natural cycles.

([College of the Menominee Nation: Sustainable Development Institute \(SDI\)](#))

References

For additional information:

- <https://menominee-nsn.gov/CulturePages/BriefHistory>
- <https://www.menominee.edu/sustainable-development-institute>
- <https://www.mtewood.com/>
- [USDA National Invasive Species Information Center](#)
- [College of the Menominee Nation: Sustainable Development Institute \(SDI\)](#)
- [Mistry, 2024](#)
- [Basket Weaving's Importance in Native American Culture](#)
- [Pearce, 2023](#)
- [College of Menominee Nation - Sustainable Development Institute \(SDI\)](#)

Additional Resources from LEAF: Wisconsin's K-12 Forestry Education Program:



LEAF-Wisconsin's K-12 Forestry Education Program
College of Natural Resources
University of Wisconsin - Stevens Point

- [Lesson 1: American Indians and the Forest](#)
- [Lesson 7: Sustaining Our Forests](#)
- [Career Profile - McKaylee Duquain](#)
- [Wisconsin Forest Tales](#)
- [K-1st Grade Field Enhancement - Sensing the Forest](#)
- [2nd-3rd Grade Field Enhancement - Observing Forest Interactions](#)
- [4th Grade Field Enhancement - Unlocking a Forest's Past](#)
- [5th-6th Grade Field Enhancement - Studying Forest Layers](#)
- [5th-6th Grade Field Enhancement - Woods Worth](#)
- [5th-6th Grade Field Enhancement - Competition in the Forest](#)