

TTCD Lesson Plan (22): Ethnobotany

Unit: Ethnobotany	Grade(s): All	Class Size: 1-30	Lesson Duration: 1 hour, 15 mins	Location(s): Classroom
Topic(s):	Ethnobotany			
Student Prerequisites:	N/A			
Essential Questions:	What is ethnobotany, and how does it help us understand the relationship between people and plants? What are the traditional uses of plants in your community, and how do these practices connect to both cultural and scientific knowledge? In what ways can the research and presentation of local plants broaden our understanding of our community's history and culture?			
Student Objectives:	Students will define ethnobotany and explain its significance in studying the relationship between people and plants, recognizing how this field helps integrate cultural, scientific, and ecological knowledge. Students will research and identify traditional uses of local plants in their community, understanding how these uses contribute to both cultural practices and scientific knowledge and effectively communicate their findings through oral presentations. Students will articulate how learning about local plants and their traditional uses broadens understanding of the community's cultural history, specifically through the lens of plant-based knowledge.			
Standards:	Supports NGS Standards: K-ESS3-1: Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live. 5-ESS3-1: Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment. MS-LS2-1: Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. G1-SG-4: Understand that advancements in science depend on curiosity, creativity, imagination, and a broad knowledge base. Relevant NGS Crosscutting Concepts: Systems and System Models: Systems in the natural and designed world have parts that work together.			

Cultural Standards

A: Culturally-knowledgeable students are well grounded in the cultural heritage and traditions of their community by:

1. assum[ing] responsibilities for their role in relation to the well being of the cultural community and their life-long obligations as a community member;
2. acquir[ing] and pass on the traditions of their community through oral and written history;
3. reflect[ing] through their own actions the critical role that the local heritage language plays in fostering a sense of who they are and how they understand the world around them;
4. liv[ing] a life in accordance with the cultural values and traditions of the local community and integrate them into their everyday behavior

B: Culturally-knowledgeable students are able to build on the knowledge and skills of the local cultural community as a foundation from which to achieve personal and academic success throughout life by:

1. mak[ing] effective use of the knowledge, skills, and ways of knowing from their own cultural traditions to learn about the larger world in which they live;

C. Culturally-knowledgeable students are able to actively participate in various cultural environments by:

1. perform[ing] subsistence activities in ways that are appropriate to local cultural traditions;

D. Culturally-knowledgeable students are able to engage effectively in learning activities that are based on traditional ways of knowing and learning by:

1. Interact[ing] with Elders in a loving and respectful way that demonstrates an appreciation of their role as culture-bearers and educators in the community;

E. Culturally-knowledgeable students demonstrate an awareness and appreciation of the relationships and processes of interaction of all elements in the world around them by:

1. recogniz[ing] and build[ing] upon the inter-relationships that exist among the spiritual, natural and human realms in the world around them, as reflected in their own cultural traditions and beliefs as well as those of others;
2. understand[ing] the ecology and geography of the bioregion they inhabit;
3. demonstrat[ing] an understanding of the relationship between world view and the way knowledge is formed and used;
4. determin[ing] how ideas and concepts from one knowledge system
8. identify[ing] and appreciat[ing] who they are and their place in the world.

Local Context:	Students will study local plants and plant knowledge, research their plant, its Dena'ina name, its role in the ecosystem, and its traditional uses by Alaska Native people (in Tyonek, specifically the Tebughna People).
Vocabulary:	Ethnobotany: the scientific study of the traditional knowledge and customs of a people concerning plants and their medical, religious, and other uses. Indigenous Knowledge: Indigenous Knowledge is a body of observations, oral and written knowledge, innovations, practices, and beliefs developed by Tribes and Indigenous Peoples.
Dena'ina language words:	Each student will work with the culture bearer who the class is being co-taught with to identify the Dena'ina word for the plant they have chosen. Alternatively, if a culture bearer cannot co-teach the class, the instructor should work with a culture bearer ahead of class to identify the Dena'ina words for each plant the students can choose from and record a pronunciation sample. Dena'ina Plant Guide: https://www.anchoragemuseum.org/media/17584/denaina-plant-deck-guide.pdf
Materials:	• Laptops for each student or student pair. • Pens and/or pencils for each student. • Clipboards • Worksheet: Ethnobotany Research.docx • Projector • Dena'ina Plant Guide: https://www.anchoragemuseum.org/media/17584/denaina-plant-deck-guide.pdf
Instructor Prep:	Provide students with plant identification guides and research tools (field guides, online resources) and a list of native Alaskan plants growing in the local area that students/student pairs can choose to focus on. Alternatively, assign students a native Alaskan plant to identify and research. • Consider this resource for common Alaska native plants: https://www.alaska.org/expert-advice/plants-flowers • Consider this resource for the Dena'ina words for common Alaska native plants: https://www.anchoragemuseum.org/media/17584/denaina-plant-deck-guide.pdf • Example Plants: Yarrow, Fireweed, Crowberry, Birch, Blueberry, Cranberry, Labrador Tea, Spruce • Create a slide deck with a picture of each plant that students will be assigned to project on the board when students later present to the class. Invite an elder to discuss collecting plants in the wild and explain the cultural significance and traditional uses of these plants for food, medicine, or rituals. This lesson should ideally be co-taught with a culture bearer who has knowledge of the Dena'ina language.

	*Depending on your class sizes and ages, this could be an activity that would benefit from pairing younger students with older students.
Introduction:	Begin the class by reading this excerpt from Robin Wall Kimmerer’s “Braiding Sweetgrass”: https://ttcd.org/wp-content/uploads/2025/07/Robin-Wall-Kimmerer---Excerpt.pdf Ask the class: What did this reading make you think about? What emotions did it bring up? Introduce the guiding question to the class: How do plants play a role in both cultural traditions and ecosystems? This question directly references the idea of ethnobotany: the scientific study of the traditional knowledge and customs of a people concerning plants and their medical, religious, and other uses. Introduce the elder who has been asked to come speak to the students and help facilitate a discussion on the significance of plants to Alaska Native communities and ecosystems, setting up the lesson’s core theme. Hand out papers and markers for the class and ask everyone to draw their responses to the following questions: Ask the class, what is your favorite thing to harvest from the land where you live? How do you use/process it? Food? Medicine? Ask the class, how does harvesting make you feel connected to the land? How does it make you feel connected to your friends, family, and ancestors?
Activity	1. Assign or allow each student to choose a local plant to focus on for the day. Draw from this website and narrowing the information for the environmental context in which you are teaching: https://www.alaska.org/expert-advice/plants-flowers a. Consider consulting a local elder or culture bearer to identify a plant list that has cultural significance for the area and its people. 2. Give each student (or student pair) the following worksheet: Ethnobotany Research. 3. Go on a nature walk as a class, giving students 10-15 minutes with their identified plant. Encourage students to spend their time outside focusing on observation, collection, and drawing their plant. They can research the plant further when they return to the classroom.
Wrap-Up:	Return to the classroom and give students 10 minutes to research their plant on a laptop. At the conclusion of 10 minutes, invite each student or student pair to present on their

	plant. Project a picture of the plant on the projector while they speak. After each student presentation, invite elders or culture bearers in the room to add any additional thoughts they might have on the selected plant. After all students have presented, ask the class: • How does traditional knowledge of plants complement scientific knowledge? • In what ways can this knowledge help in promoting sustainable practices today? <i>Evidence of Learning:</i> Student answers point to the importance of seeing science through an indigenous, ecological, and botanical lens. Students reflect on the plant knowledge they already possess via their relationship to the land and their family's relationship to the land.
Lesson Adaptations:	• Give students cameras and adapt the lesson to be a student video creation rather than an oral presentation: ○ Students work in small groups or individually to create a 3-5 minute video about an Alaskan plant species. ○ The video should address: ▪ Plant Identification: Scientific name and description. ▪ Ecological Role: The plant's function in its ecosystem. ▪ Cultural Significance: Traditional Alaska Native uses. ▪ Reflection: How understanding both science and indigenous knowledge can contribute to sustainable practices
Extensions:	1. Pick one native Alaskan plant species, like Labrador tea, to do a class demo with, inviting elders and culture bearers to lead the demo and a discussion on historical and present uses of the plant species. 2. Reach out to the Alaska Ethnobotany Program to inquire about a speaker for a zoom lesson or an online portion of an in-person lesson: https://alaskaethnobotany.community.uaf.edu/alaska-ethnobotany-program-ebot/?fbclid=IwY2xjawlQfRRleHRuA2FibQlXMAABHcdPvs38k3VaLZDJuLSAOVPgGO7XyAe6lDzcBF8Dcigb7SUYbnny8_Mw9A_aem_g9tayUQwxU1EJWam38eNDw
Reflections:	How did it go? What did students understand most/least? What could change about instruction or lesson plan?
Resources Used:	Ethnobotany Worksheet: Ethnobotany Research.docx Rooting in the Land: Ethnobotany in Alaska Guide: Alaska Plants and Flowers Alaska Ethnobotany Program Multi-Cultural Education: Lesson Plan on Ethnobotany Indigenous Languages of Alaska: Plant Guide Excerpt from Robin Wall Kimmerer's "Braiding Sweetgrass": https://ttcd.org/wp-content/uploads/2025/07/Robin-Wall-Kimmerer---Excerpt.pdf

