



SCIENCE

Traditional Foods of the Cow Creek Band of Umpqua Tribe of Indians

ESSENTIAL UNDERSTANDINGS

- **Since time immemorial**
- **Sovereignty**
- **Identity**
- **History**

LEARNING OUTCOMES

By the end of this lesson, students will be able to:

- Describe how the seasonality of native plants and animals sustained a healthy diet for the Cow Creek Band of Umpqua Tribe of Indians.
- Describe the season and Takelma name for several traditional plants.
- Define traditional ecological knowledge (TEK).
- Describe a food cycle that is sustained in part by traditional land management practices.
- Define food sovereignty and why it is important.

ESSENTIAL QUESTION

How does the health of the environment impact the health of people and Tribal nations?

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Overview

In this lesson, students will examine how the traditional food harvesting practices of the Cow Creek Band of Umpqua Tribe of Indians have changed since settlement and colonization by the U.S. government. Prior to European contact, the people of the Cow Creek Band made seasonal rounds within their traditional territory in Southwest Oregon. Encroachment from settlers severely limited the Tribe's access to its traditional homelands and its ability to engage in seasonal rounds. Ultimately, this encroachment also radically changed the landscape itself. Settlers cleared meadows and trees for agricultural fields and brought in livestock that grazed and damaged native plant species, impacting food sources for animals and humans. Clearcut logging practices and over-fishing also had a severe impact. In this lesson, students will analyze these landscape shifts and their impact on the ecosystem and on the Native population.

Background for teachers

The Cow Creek Band of Umpqua Tribe of Indians' rich history is rooted in their ecological and cultural knowledge of their land base, which traditionally



LOGISTICS

- Where does the activity take place?
Classroom
- How are the students organized?
 - ☑ Whole class ☑ Teams: 3 – 4
 - ☑ Pairs ☑ Individually

TIME REQUIRED

4 hours

included more than 6.3 million acres between the Cascade and Coast Ranges in Southwest Oregon, along the South Umpqua River and its primary feeder stream, Cow Creek.

The Cow Creek people lived in close relationship with the natural cycles of the environment and traveled seasonally to various parts of their land to hunt, fish, and gather. This traditional practice is known as “seasonal rounds.” In summer and winter months they traveled as far north as the Columbia River, east to Crater Lake and south to the Klamath Marsh to hunt elk and deer and to fish silver salmon and steelhead during peak seasonal runs. Along with fish and game, their diet consisted of plants from the region’s fertile lands such as blackberries, hazel and chinquapin nuts, huckleberries, wild onions, and mushrooms. Plants served medicinal purposes as well—members of the Tribe used snakeweed for burns, cuts, and blood poisoning; steeped mullein leaves to make cough syrup; and cured fevers with wild ginger teas.

STANDARDS

Oregon science standards

- 7.LS2.1** - Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
- 7.LS2.2** - Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.
- 7.LS2.3** - Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.
- 7.LS2.4** - Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
- 7.LS2.5** - Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

Oregon English language arts standards

- 7.W.2** - Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.



Camas and acorns were two primary foods the people consumed. Women would dig for camas bulbs with deer horn-handled digging sticks, then toss the bulbs into a burden basket carried on their back. Camas was baked and eaten or sundried and mashed to make cakes for later use. Acorns were also gathered and roasted or dried and ground into flour for later use, as well as eaten in a variety of other ways.

Cow Creek people designed their homes in response to the seasons. They constructed winter houses primarily of pine boards over shallow excavations in the earth. Records show that they also used rock shelters with animal hides for homes. Cow Creek men carried their arrows in quivers made from the pelts of fox or otter. Cow Creek women wove baskets of wild hazel sticks, willow sticks, bear grass, and maidenhair fern stems. These ecological practices supported the natural balance and reciprocal relationship between humans and the plant and animal life of the region. The Tribe's traditional ecological knowledge remains central to its contemporary identity, and they advocate for environmental conservation and preservation practices throughout the region.

To prepare for lesson teachers should

- Review the video, "Cow Creek Band of Umpqua Indians: Connecting with the Land" from the Museum of Natural and Cultural History: <https://www.youtube.com/watch?v=eVS-oONIUDM&t=107s>. This will build your knowledge of the Tribe's history

MATERIALS

- Traditional Foods_Slides.pptx
- Leveled Reader, below-, on-, and above-grade level—Pre-Contact Cow Creek Band of Umpqua Tribe of Indians.
- Takelma Language for Plants
- Cow Creek Seasonal Rounds
- Pre-Contact – Cow Creek Band of Umpqua Tribe of Indians

VOCABULARY

Beaver (*spíin*, *Takelma language*) –

A large rodent, with dark orange teeth that continuously grow.

Camas (*tíip^h*, *Takelma language*) – Plants of the lily family with edible bulbs, mainly of the western U.S.

Crabapple (*piyúk^h*, *Takelma language*) – The fruit produced by various wild or cultivated trees.

Tarweed (*k^hò'x*, *Takelma language*) – A plant known for its stickiness and heavy smell.

Cattail (*lep'ées*, *Takelma language*) – A tall reedy marsh plant with brown, furry fruiting spikes.

Huckleberry (*keléx*, *Takelma language*) – The edible dark blue-to-black berry that grows in mid to higher elevation coniferous forests.

Strawberry (*nikúit^haap^h*, *Takelma language*) – The juicy, edible, usually red fruit of any of several low-growing temperate herbs of the rose family.

Sunflower (*lámx*, *Takelma language*) – Plants with large, yellow-rayed flower heads bearing edible seeds that also yield an edible oil.

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and its ongoing efforts to share its traditional ecological knowledge and to continue these practices.

- Review the Oregon Department of Education Tribal History/Shared History grade 8 lesson: Native Nutrition https://www.oregon.gov/ode/educator-resources/standards/health/Pages/SB13_Health.aspx
- Review the Cow Creek Band of Umpqua Tribe of Indians grade 3 lesson Lampreys and grade 4 lesson Ancestral Territory. <https://www.cowcreekeeducation.com/senatebill13/>
- Review all handouts and worksheets for this lesson.
- Ensure students have access to all materials (printed and/or electronic) and audiovisual resources (e.g., internet access and web-enabled devices such as laptop or tablet computers) needed to participate in this lesson (see “Materials” section above).
- Prepare classroom audiovisual technology to display the slides.
- Review the Takelma Language website (<https://www.cowcreekeeducation.com/takelma-language/>) to access the Talking Dictionary (<https://www.cowcreekeeducation.com/dictionary/>) and Takelma Language

¹ Source: <http://usfoodsovereigntyalliance.org/what-is-food-sovereignty/#:~:text=%E2%80%9CFood%20sovereignty%20is%20the%20right,own%20food%20and%20agriculture%20systems.>

VOCABULARY *(Continued)*

Food sovereignty – The right to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and the rights of an Indigenous people to define their own food and agriculture systems.¹

Traditional ecological knowledge (TEK) – A long-established practice of relating to and taking care of the land, plants, and animals.

ADAPTATIONS FOR DISTANCE LEARNING



The lesson is primarily structured around student knowledge development and discussion and may be adapted for distance or independent learning purposes. A suggested sequence follows (be sure all students have either print or electronic access to the materials described):

1. Hold a class meeting online and, using PowerPoint slides 1–4 and the steps in Activity 1 (“Introduction to TEL and seasonal rounds”), have students respond to the discussion prompts provided on slides 2 and 3.
2. Set up breakout rooms for small groups of students to review the Cow Creek seasonal round on slide 4 or the Cow Creek Seasonal Calendar handout and discuss the Pre-Contact Cow Creek Band of Umpqua Tribe of Indians reading. Alternatively, you can post the reading documents in your school’s online classroom platform or an online document and have students respond to them asynchronously.

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books <https://read.bookcreator.com/0ffgG9LEwTbFT0R1C6oyCstWpqx1/MI1UbKqDSmug2yLjf46zFA/gASaVOtYSRCSI3O6aASptg> This will allow you to hear the Takelma language terms used in this lesson and practice your pronunciation.

References

Bohan, H. (2019). *Pacific Northwest seasonal rounds calendar*. People of Cascadia. <https://peopleofcascadia.com/wp-content/uploads/2019/02/Seasonal-Rounds-8x11-1.pdf>

Clearing. *Summer 2022 special Issue: Indigenous perspectives and environmental education*. https://online.fliphtml5.com/hnjow/ynje/?fbclid=IwAR0Bk8B-OlhEnBqs5GF8LC7NiHCUvVguuAV_fNKSWKu0BBP5I9zNjjWGY&mibextid=Zxz2cZ

Cow Creek Language Team. (n.d.). *Plants in Takelma*. Takelma Language Program. Cow Creek Band of Umpqua Tribe of Indians. <https://read.bookcreator.com/0ffgG9LEwTbFT0R1C6oyCstWpqx1/MI1UbKqDSmug2yLjf46zFA>

Robbins, J. (2018, April 26). *Native knowledge: What ecologists are learning from Indigenous people*. Yale Environment 360. <https://e360.yale.edu/features/native-knowledge-what-ecologists-are-learning-from-indigenous-people>

ADAPTATIONS FOR DISTANCE LEARNING



(Continued)

3. Post the link to have students read the Takelma Plants: Language Primer and access the Takelma Dictionary. Have students record themselves practicing the language while reading the book and submit the recording in their classroom platform.
4. During an online class meeting (or posted for asynchronous review), share slides 5 and 6 and have students respond to the prompt “How do these tools and practices reflect what we know about traditional ecological knowledge?”
5. During an online class meeting review the concept of a food web on slide 8. Have students view the video, “Can beavers save salmon in Oregon’s high desert?” Then have students submit a summary of the video and its relationship to traditional ecological knowledge.
6. During an online class meeting review slide 11. Have students read the three articles and answer the questions. Then have students participate in a discussion (either in a class meeting or asynchronously) about the connections between the readings and the concept of food sovereignty.

Considerations for teachers

Assessment

Many of the activities include student participation through partner, small group, and whole class discussion. Teachers should monitor and consider formative assessment for clarity and participation. There is also an opportunity for student presentations and reflection for either formative or summative assessment. In addition to these opportunities there are several readings that include multiple choice and short answer questions. These may be used as either formative or summative assessment options.

Practices

- *Small groups* – Small group activities allow students to share and analyze ideas with three to five other people. This practice can be good for students who do not want to share their ideas with the whole class and/or who may be afraid of others' reactions. The teacher should monitor group discussions to determine the degree to which students are understanding the concepts and contributing to the group.
- *Classroom discussion* – Large group, whole class discussion allows students to express their own thoughts and to hear the thoughts of others. For the instructor, this practice is a good way to take the pulse of the group and see what general themes are emerging. For students, large group discussion can be a way to express themselves or to hear others' differing perspectives.
- *Leveled readers* – This lesson makes use of a public-facing website meant for advanced readers. For student readings, there are three options available, with vocabulary and comprehension support based on grade 7 readability, as well as two grades above and two grades below. You may choose to organize groups based on reading needs and support or have students identify appropriate scaffolds for understanding, if necessary.

Learning targets

- I can describe how the seasonality of native plants and animals sustained a healthy diet for the Cow Creek Band.
- I can describe the season and Takelma name for several traditional plants.
- I can define traditional ecological knowledge (TEK).
- I can describe a food cycle that is sustained in part by traditional land management practices.
- I can define food sovereignty and why it is important.

Optional/extension

- Incorporate activities 1, 2, and 3 from the Oregon Department of Education Tribal History/Shared History lesson for grade 10: Food Sovereignty and Environmental Sustainability. <https://www.oregon.gov/ode/students-and-family/equity/nativeamericaneducation/pages/10th-grade-tribal-history-lesson-plans.aspx>
- Watch “First Foods: Roots & Berries with Warm Springs Traditional Gathers from High Desert Museum” available at <http://youtube.com/watch?v=pcC0hgWb33E>
- Read the article, “Climate Change: A threat to ecosystems and the cultures based on them” and watch the embedded video, “Plateau Tribes: Facing Climate Change,” from the Columbia River Inter-Tribal Fish Commission available at <https://critfc.org/fish-and-watersheds/climate/>
- Have students review the article, “Why Food Sovereignty Matters,” from the U.S. Department of the Interior, Bureau of Indian Affairs. Have students choose one of the areas (Community Health, Restoring Traditions, Economic Empowerment and Tourism, or Pandemic Challenges) to research and create an infographic to share information. <https://www.bia.gov/service/indigenous-tourism/why-food-sovereignty-matters#:~:text=Food%20sovereignty%20empowers%20Native%20households,with%20other%20racial%2Fethnic%20groups>



- Incorporate elements from the Smithsonian’s National Museum of the American Indian Native Knowledge 360 2020 Indigenous Peoples’ Day Teach-In Series: Food and Water Justice. This includes Winona LaDuke’s keynote speech, “The Inka Empire: What Innovations Can Provide Food and Water for Millions?,” and “American Indian Responses to Environmental Challenges.” <https://americanindian.si.edu/nk360/professional-development/recorded-webinars>
- Have students read and summarize the article, “Native Knowledge: What Ecologists are Learning from Indigenous People.” Then create a compare-and-contrast graphic organizer (e.g., a Venn-diagram, double bubble, or three-column chart) between the practices shared in the article and locations to the Cow Creek Band of Umpqua Tribe of Indians and Southcentral Oregon.
- Choose one of the traditional foods stories from the Center for Disease Control available at <https://www.cdc.gov/diabetes/ndwp/traditional-foods/index.html> to share with students and have them summarize stories from different Tribes and compare them to the Cow Creek Band’s initiatives and efforts.
- Have students read the article and watch the accompanying video of a prescribed burn on Cow Creek forest lands: <https://www.cowcreek-nsn.gov/video-successful-prescribed-burn-on-cow-creek-forest-lands/>. Have them identify the benefits and hazards of a prescribed burn, then research ways to mitigate hazards.

Appendix

Materials included in the electronic folder that support this lesson are:

- Traditional Foods_Slides.pptx
- Leveled Reader_Above Grade Level_Pre-Contact-Cow Creek Band of Umpqua Tribe of Indians.pdf
- Leveled Reader_Below Grade Level_Pre-Contact-Cow Creek Band of Umpqua Tribe of Indians.pdf



- Leveled Reader_On Grade Level_Pre-Contact-Cow Creek Band of Umpqua Tribe of Indians.pdf
- Cow Creek Seasonal Calendar.pdf
- Takelma Language for Plants.pdf
- Sticky Note Takelma Plant Names.pdf
- Reading_Tribes Rethink Commodity Foods.pdf
- Reading_Commission Directs ODF Staff.pdf
- Reading_ODFW and Cow Creek Adopt Co-Management Agreement.pdf

Activity 1

Introduction to traditional ecological knowledge and seasonal rounds

Time: 30–45 minutes

Overview

In this activity, teachers provide background information to orient students to traditional ecological knowledge and seasonal rounds. Students will read an excerpt from Cow Creek Tribal history to identify traditional ingredients and match them to the correct season.

Step 1

Share the purpose of the lesson and gauge student understanding of traditional ecological knowledge.

Say:

Today, we're going to learn about the Cow Creek Band of Umpqua Tribe of Indians' traditional ecological knowledge of their ancestral lands.

Pause and allow students time to answer.

Step 2

Share slide 2: T+E+K.

Say:

The best way to understand traditional ecological knowledge, or TEK, is to break it down by its individual terms: Traditional means a long-established way of doing something. It's something that has become part of a culture—a tradition. Ecological refers to the interrelationship of living organisms and their surroundings. Knowledge is the theoretical or practical understanding of a subject. Traditional ecological knowledge, then, is a long-established practice of relating to and taking care of the land, plants, and animals. It is the specific knowledge about how to do that, and it is the act of putting that knowledge into practice. An example of TEK is knowing when

Activity 1 *(Continued)*

to plant seeds in specific area so that they thrive and produce food several months later. What might be another example of TEK? What might be other images that come to mind as we define TEK?

Step 3

Share slide 3: Ancestral Territory and Ceded Lands—Cow Creek Umpqua Tribe.

Say:

This map shows the original lands inhabited by the Cow Creek Band long before contact with other settlers. As you can see, they lived in a vast area of Oregon—6.3 million acres in total. The Tribe knew this land and the natural cycles of the environment extremely well. Their traditional ecological knowledge of this territory had been developed over thousands of years of living here.

Say:

The Tribe traveled often, following seasonal changes. Traditionally, they would travel as far as 60 miles within their traditional homelands. In spring and summer, they traveled into the mountains to fish, hunt, forage, and preserve food for the winter months. In winter, they descended into the lowlands where they maintained permanent villages. Their hunting and gathering practices followed a seasonal calendar, meaning they were careful to harvest ingredients when they were at their most abundant. It also meant they planned well in advance for periods in which resources were scarce. The practice of living in connection with the land—its seasons, rhythms, and resources—and the knowledge about how to do that are what we refer to as traditional ecological knowledge. This knowledge and practice were the heart of Cow Creek culture and remain so to this day. The people are inseparable from the land.

Say:

The Cow Creek Band's traditional ecological knowledge reminds us that ecology is not a new science. Tribal societies like the Cow Creek Band of Umpqua Tribe of Indians have been in this region since time immemorial. This means that they



Activity 1 (Continued)

have lived here for thousands of years—long before anyone can remember. Their understanding of the ecology of the environment was, is, and continues to be central to their ways of being. Contemporary scientists are only beginning to understand and appreciate the depth and breadth of this knowledge.

Step 4

Provide each student a copy of the appropriate leveled reader “Pre-Contact Cow Creek Band of Umpqua Tribe of Indians” reading. Ask students to read through the document then answer the multiple choice and short answer questions. As they read, ask them to underline key words or phrases related to how the Cow Creek Band harvested plants and animals.

Say:

We’re going to read some background information from the Tribe’s website about their Pre-Contact Ways of Life. “Pre-contact” means before they had had any contact with non-Native people. As you read, also consider the different plants and animals harvested by the Cow Creek. Read and underline words or phrases that talk about specific plants and animals or times of the year. Then answer the follow-up questions.

Step 5

Share slide 4: Cow Creek Seasonal Round.

Say:

Let’s connect the information from the reading to the Cow Creek Seasonal Round presented here. This infographic shows the plants and animals harvested by the Cow Creek people during each season. Compare this to the reading. How does the information presented here confirm or support what you read? Does the graphic present any information that wasn’t in the reading? Did anything surprise you?

Activity 1 *(Continued)***Step 6**

Help students make the connection that food is also medicine and many resources can be used for both purposes.

Say:

The Cow Creek Band traditionally used many resources as both food and medicine. Some resources were used as preventative medicine—meaning they helped Tribal members stay healthy and prevented them from getting sick. Other resources were used as restorative medicine—meaning they helped Tribal members heal and get better when they were hurt or sick. As you look at what was harvested, think about what might have been used for preventative purposes, what might have been used for restorative purposes, and what might have been used for both purposes. For example, nettle, which is harvested in late spring can be made into a tea, which has many nutrients and antioxidants like vitamin A, C, K, and several B vitamins, calcium, iron, and potassium. It can reduce inflammation from arthritis and lower blood pressure. It's even used to treat hay fever. The plant has little spikes that can sting when you touch it, but even the stinging can trigger the immune system to react and heal inflammation. What might be some healthy benefits of these foods?



Activity 2

Important plants as food and medicine

Time: 30 minutes

Overview

Now that students have a general knowledge of seasonal rounds, they are tasked with understanding the names for various plants and animals in Takelma, the language spoken by the Cow Creek Band, and the season in which they were traditionally harvested. Provide students with the handout “Takelma Language for Plants.” Additionally, students may want to access the Takelma Dictionary available at <https://www.cowcreekeeducation.com/dictionary/> and the online version of Takelma Plants: Language Primer which has audio support for pronunciation. Students will also have an opportunity to match images to terms in both English and Takelma.

Step 1

Using a projector and available sound, introduce the Cow Creek Band of Umpqua Tribe of Indians’ book, “Takelma Plants: Language Primer,” available at <https://read.bookcreator.com/0ffgG9LewTbFT0R1C6oyCstWpqx1/MI1UbkgDSmug2yLjf46zFA/v4hhqrISS9S2EFFRMKXuqA>, which includes important plants and how they are pronounced in the Takelma language.

Say:

*Healthy bodies need healthy food. The Cow Creek Band traditionally harvested healthy ingredients that nourished their bodies and sustained their way of life. The Tribe has put together a book that introduces how to say certain plants in their Takelma language. We are going to view the book, “**Takelma Plants: Language Primer**”, listen to how to pronounce each plant, and practice saying the word out loud together.*

Activity 2 (Continued)

Hand out the student worksheet, "Takelma Language for Plants."

Say:

Okay, we're going to use the worksheet to document a few things about each plant. You'll write down the English name, the Takelma name as it is written in the book, and how the Takelma word sounds phonologically to you. This will help you to remember how to pronounce the word in Takelma. You will also write down the season in which the plant is harvested and provide a scientific sketch of the plant. A scientific sketch is a quick rendering of the basic visual information. It's not intended to be art, so don't worry about that. One other thing you need to know is that the Cow Creek Band recognized five seasons: early spring, late spring, summer, fall, and winter.

Let's practice the first plant, camas. Camas is a plant of the lily family that has an edible bulb. It is harvested in the early spring. In the Takelma language, it is pronounced "d-ee-p."

Play the audio a couple of times to allow the class to hear the word, and then practice saying the word together as a class.

Say:

Okay, let's say it together: "d-ee-p". Now turn and tell your shoulder partner the word, "d-ee-p."

Okay, let's practice the second plant, crabapple. Crabapples are a wild fruit. As the English name implies, they're related to apples. The Cow Creek Band harvested them in early spring. The Takelma word for crabapple is "pay-you-k."

Activity 2 (Continued)

Play the audio to allow the class to hear the word a couple of times, and then practice saying the word together as a class.

Say:

Okay, let's say it together: "pay-you-k." Now turn and tell your shoulder partner the word for crabapple, "pay-you-k."

Okay, let's practice the third word, tarweed. Tarweed is a wildflower in the sunflower family. The seeds are collected for food in the fall season. In the Takelma language, tarweed is pronounced "coke."

Play the audio to allow the class to hear the word a couple of times, and then practice saying the word together as a class.

Say:

Okay, let's say it together: "c-o-ke." Now turn and tell your shoulder partner the word for tarweed, "c-o-ke."

Okay, let's practice the fourth plant, cattail. Cattail is a tall, reedy marsh plant with brown, furry, fruiting spikes. It can be harvested for food and many other uses such as soft mats, blankets, housing, insulation, and cushions. Cattail is abundant and can be harvested in every season, but it usually flowers in late spring. In Takelma, cattail is pronounced "lep-s."

Play the audio to allow the class to hear the word a couple of times, and then practice saying the word together as a class.

Say:

Okay, let's say it together: "lep-s." Now turn and tell your shoulder partner the word for cattail, "lep-s."

Now let's practice the fifth word, huckleberry. Huckleberry is an edible berry found in mid- to high-elevation coniferous forests. It's harvested in the fall. The Takelma

Activity 2 (Continued)

word for huckleberry is “ki-lei-h.” [Teacher should play the audio to allow the class to hear the word a couple of times, and then practice saying the word together as a class.] Okay, let’s say it together, “ke-lei-h”. Okay, turn and tell your shoulder partner the word for huckleberry, “ki-lei-h.”

Okay, let’s practice the sixth plant, strawberries. Strawberries are the juicy, edible, usually red fruit of any of several low-growing, temperate herbs of the rose family. Strawberries are harvested in the summer. In Takelma, strawberry is pronounced “nay-goo-it-top.”

Play the audio to allow the class to hear the word a couple of times, and then practice saying the word together as a class.

Say:

Okay, let’s say it together: “nay-goo-it-top.” Now turn and tell your shoulder partner the word for huckleberry, “nay-goo-it-top.”

Now let’s practice the seventh word, sunflower. Sunflowers are plants with large, yellow-rayed flower heads that have edible seeds. Sunflowers are usually harvested in the late summer and into fall. Sunflower is pronounced in the Takelma language as “lawm-h.”

Play the audio to allow the class to hear the word a couple of times, and then practice saying the word together as a class.

Say:

Okay, let’s say it together: “lawm-h.” Now turn and tell your shoulder partner the word for sunflower, “lawm-h.”

Activity 2 *(Continued)*

Step 2

Have students practice connecting the visual images with the Takelma language and English terms using the sticky note Takelma plant names. You may choose to print and have students cut out the cards, or you may print on 3x3 sticky notes. Allow students to practice in pairs or triads to match the pictures and terms. Have students practice using the Takelma language.

Activity 3

Important tools and practices

Time: 15 minutes

Overview

Students learn about the Cow Creek Band's traditional tools and practices for harvesting seasonal ingredients. They are asked to think about how these tools and practices reflect traditional ecological knowledge.

Step 1

Share slide 5: Prescribed burn.

Say:

The Cow Creek Band practiced land management techniques that sustained a strong and healthy interdependence among people, plants, and animals. One of these practices is a prescribed burn, which is a controlled application of fire in a specific area. Prescribed burns maintained the health of the forest by diminishing harmful bugs and removing undergrowth that blocked plants' water access. The burns cleared forest pathways for deer and elk to graze easily within the sight of hunters, who harvested the meat during fall and winter.

Step 2

Share slide 6: Digging sticks.

Say:

These are examples of digging sticks from the Tribe. Notice the design and structure of the stick and imagine how it might be used then and now. During the spring and fall, Cow Creek women and children used these tools, which are made from yew or spruce wood, to weed unwanted plants and aerate the soil of the lowland riverbanks in preparation for planting. The healthy plants grown there provided much-needed bank security and foliage for water species. Digging sticks were also used to harvest shellfish such as littleneck clams, butter clams, horse clams, geoduck, and mussels.

Activity 3 (Continued)

Step 3

Share slide 7: Consider the Cow Creek Band of Umpqua Tribe of Indians' relationship to the land

Say:

Now, I want you to turn to the person next to you and discuss the question on the slide: Consider the Cow Creek Band of Umpqua Tribe of Indians' relationship to the land. What do you think the ecology of the region looked like 200 years ago compared to how it is today? What might be different? What might be the same? How do their practices reflect what we now know about traditional ecological knowledge?

Step 4

Pause and allow time for students to discuss. Ask for volunteers to share their reflections with the whole class.

Activity 4

Traditional ecological knowledge

Time: 90 minutes

Overview

In this activity students gain a deeper understanding of traditional ecological knowledge by examining an important animal—the beaver. Students will learn about the beaver’s connection to the environment, its food sources, and its predators. Then they’ll do their own research to learn more. Students will also consider the effects of the traditional Indigenous practice of prescribed burning on the animals.

Step 1

Share slide 8: Relationship to land, plants, animals, and people to review with students the interconnectedness of environment, plants, and animals.

Say:

In elementary school you will recall the idea of a food chain—that plants get their energy from the sun, small animals eat plants, and big animals eat small animals and sometimes plants, too. You have also learned, in early grades, that it’s not a chain, where an animal only eats one thing, but rather a web, and that an animal has a greater chance of surviving if it has a variety of food sources. As we learn more, we see the interconnectedness not just of the plants and animals, but the entire environment. As we look at this simple food web, we can see that the earthworm provides nourishment directly to two animals, but also indirectly to all the animals in this graphic. And this graphic doesn’t even show all the connections. For example, when earthworms and animals die, they put nutrients into the soil, which the oak tree needs to survive. What are some other connections between these plants and animals that are missing from this particular graphic?

Activity 4 (Continued)

Allow students to pair to generate ideas and share out with the class. Students should address additional predators, water sources, other insects, or rodents.

Say:

I'm going to share a video about a very important animal to the area, the beaver. In Taklema, it's sp̄iin and sounds like sbEEen. The sp̄iin needs a certain environment to thrive and also manages to create an environment that benefits it. Before we watch, let's brainstorm our own ecological knowledge about the beaver, such as its habitat and food habits.

Allow students to generate ideas. Capture notes in a shared display such as a white board or chart paper. Encourage students to consider how actions create or sustain an environment, such as the beaver creating dams by piling wood in rivers or streams, so it might flood an area drowning plants and making land inaccessible to animals that can't swim well. Promote the use of cause-and-effect statements such as, "I think ____ was caused by ____", "the effects of ____ were ____" Additional cause-and-effect questioning frames may be found at https://www.readwritethink.org/sites/default/files/resources/lesson_images/lesson965/questioning.pdf

Step 2

Prime student focus before watching a video on beavers. Determine ways to divide students into four groups. Share slide 9: Can beavers save salmon in Oregon's high desert?

Say:

Before you watch the video, I'm going to divide you into groups of four to focus on a single question as you watch. After watching I'll mix you up so that there is at least one person in each group with a different focus. I encourage you to take notes so that you can contribute fully to the discussions. Continue to use cause-and-effect statements.

Activity 4 (Continued)

Share video. The link is embedded in the beaver image and available from Oregon Public Broadcasting at <https://www.youtube.com/watch?v=kYZwzFsesVo>. After the video have student groups with the same focus spend two or three minutes summarizing and sharing key ideas. Then regroup students so that each team has a mix of students with different viewing foci. In their discussions have them create three or four cause-and-effect statements, with one being specifically tied to fire management practices.

Step 3

Provide students with access to a Chromebook or other internet-connected device to create a presentation on a specific animal and its interconnection to the environment. Organize students into pairs or triads for this exercise. Share slide 10: Team research.

Say:

Taking the example of the beaver, you and a partner or a small group will choose one animal and create a presentation describing some ecological knowledge and the impacts of the animal on the environment. Your presentation can be a poster, a written paper, or a slide deck. It must include the elements you see on the right side of this slide. As a team you need to stay organized and determine things together. You only have this class period to research and complete the task. I encourage you to use the Takelma Language Dictionary at <https://www.cowcreekeeducation.com/dictionary/>

After student groups have completed their presentations, have them present to the full class.

Activity 5

Food sovereignty

Time: 60 minutes

Overview

Students will review two articles about food sovereignty at the national level before reading about and comparing the resources available on Cow Creek Band and Oglala Lakota Sioux lands.

Step 1

Share slide 11: Food Sovereignty with the definition and link to an NPR comic about Chef Sean Sherman and his advocacy for Tribal food sovereignty.

Say:

Sovereignty means the right to govern and self-rule. The Cow Creek Band has its own Tribal government that has the right to make and carry out laws. It is a Tribal nation, with sovereignty that is separate from the U.S. government, Oregon state government, and local governments. When the word sovereignty is connected with food, it means “The right to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and [a Tribe’s] right to define their own food and agriculture systems.” It’s important because many U.S. federal policies impacted the ability of the Cow Creek Band to make decisions for themselves, including their ability to follow their traditional seasonal rounds to harvest food and medicine. Many Tribes were forbidden to follow these rounds and instead were forced to eat food rations provided by the U.S. government. Not only did this make them dependent upon the U.S. government—which they did not want to be—the food was also very low quality and lacked nutritional value. In some cases, the food rations promised to Tribes were taken instead by U.S. soldiers or simply never delivered. Although these food rations—called “commodity boxes”—have improved, many are still low quality and highly processed, and many Indigenous people still rely on them. This has led to severe health problems for many Native people.

Activity 5 (Continued)

Many Tribes and individual Native people have focused on improving food sovereignty. One such advocate is the Lakota chef Sean Sherman. He has won many international awards and is one of several Native chefs that has advocated for incorporating traditional foods into our modern diets and for the importance of knowing where our food comes from, how it was raised and harvested, and how it is prepared.

Share the comic “One Sioux chef’s attempt to reclaim Native American cuisine” from National Public Radio, which explores Sean Sherman’s personal journey toward understanding, acting upon, and promoting food sovereignty. If time allows, listen to the TED Radio Hour episode of The Food Connection, which includes an interview with Sean Sherman. The following link to the comic book is also embedded in the slide. The site with the comic includes a link to the Food Connection interview. <https://www.npr.org/2022/05/13/1097955036/comic-one-sioux-chefs-attempt-to-reclaim-native-american-cuisine>

Step 2

Lead a discussion of the differences between locations and resources available to compare between Cow Creek lands and Oglala Lakota Sioux lands. Share slide 12: Comparing local natural resources.

Say:

While Chef Sherman focuses on the resources in the Midwest, the climate and landscape in Southwest Oregon provide different resources. Here, we have milder winters and access to many rivers and lakes and to the Pacific Ocean. Turn to a partner (or triad) to discuss some resources we have access to that might not be available in the Midwest.

Allow time for students to discuss and share out with the class.



Activity 5 (Continued)

Step 3

Connect multi-nation initiatives for food sovereignty and share slide 13: NCAI Tribal Food Sovereignty Advancement Initiative's Empowering Tribal Food Sovereignty infographic.

Say:

The National Congress of American Indians, or NCAI, is an organization that connections multiple Tribal nations on policy and resources. One of the big issues they are working on is food sovereignty. According to their website they "empower food sovereignty by creating a forum for tribal leaders to share best practices for advancing food sovereignty; assisting tribal governments with developing food sovereignty and related policies; advocating for federal policy changes needed to improve the quality and accessibility of food assistance and cultivation programs; protecting and sustaining tribal lands, waters, and natural resources integral to tribal food systems; and providing materials to help build the knowledge base and skills of current and aspiring Native farmers, ranchers, and other food providers." In this infographic NCAI identifies six primary work components.

Have students read aloud each of the work components.

Step 4

Highlight specific initiatives from the Cow Creek Band that support traditional ecological knowledge and food sovereignty.

Say:

In our area, taking care of the land includes taking care of the rivers and the aquatic life in them. Traditional practices include ways to harvest and manage the amount of healthy fish in healthy streams. Coordinating and building partnerships between agencies promotes several of the NCAI components.

Activity 5 *(Continued)*

Step 5

Organize the class into three groups. Each group will be responsible for reading an adapted article and answering text-specific questions about the efforts of the Cow Creek Band for managing fishing and hunting activities in partnership with the Food Distribution Program on Indian Reservations (FDPIR). Pass out copies of the following resources:

- Reading_Tribes Rethink Commodity Foods.pdf
- Reading_Commission Directs ODF Staff.pdf
- Reading_ODFW and Cow Creek Adopt Co-Management Agreement.pdf

Have each group read their assigned article and decide on the answers together, then summarize so they can share with the whole group. Once the small groups have created summary statements and answered the questions, reorganize students so that each group has a representative for each of the different articles. Have them share the summaries and answers to the short answer questions.



Activity 6

Reflection

Time: 15 minutes

Overview

In this activity students reflect on and summarize what they learned in the lesson.

Step 1

Restate or point to the learning targets for the lesson and review them with students. Ask if they have any questions about what they learned.

Step 2

Ask students to share with their groups what stood out or surprised them the most in the lesson. Ask for volunteers to share their responses with the whole group.