

## Lesson 1.4: Oak Woodlands Introduction

### LESSON INTRODUCTION

**Time Frame:** 1 class period

**Materials:**

- [Oak Woodland Ecosystem Cards](#)
  - *Note: These will be used throughout the unit, so do not discard.*
- Northern Pomo [Audio Dictionary](#)
- [Woodland Food Chain game](#)

This lesson introduces students to traditionally significant species and food sources for the Pomo people. Students learn Indigenous words for local plants and animals and begin to explore relationships between species within food chains and webs.

**Teacher Background:**

Throughout the next few lessons students will become familiar with one ecosystem in particular: the **Oak Woodlands**. The Oak Woodlands ecosystem houses a wide variety of oak trees, conifer trees, and Native grasses and flowers. The climate in California’s Oak Woodlands is “Mediterranean” with hot, dry summers and falls, and a moderate amount of rain in winter and spring.

For the **Pomo people**, cultural traditions, foods, and spiritual practice are intertwined with the specific ecosystems in which the communities live. Baskets, which are used for a wide variety of purposes, depend on the **accessibility** of the plants in the ecosystem, for example. If the plants needed to produce culturally important items were to disappear or become less available to the Pomo people, then their cultural traditions would be impacted.

It is important to note that resource accessibility is deeply impacted by the illegalization and stigmatization of collecting natural resources. Native people do not have consistent access to their cultural materials due to the privatization of local lands, and regulations around gathering in state and national parks. Ironically, the lack of responsible **cultural gathering** and tending can lead to a multitude of ecological

challenges such as increased wildfires, influx of invasive species, species disappearance and overgrowth, etc. Many native communities advocate for the allowance of cultural gathering, as it is such an integral part of culture and community health.

As noted in the directions, there are **twelve distinct Pomo tribes**, all with their own language dialect. It is common for tribal communities to consist of smaller neighboring tribes, sometimes known as bands, all sharing similarities in culture and/or language. Because not every tribal band uses the same dialect, some tribal bands do not have words (or we could not locate the word), for the species highlighted in this program. The **Northern Pomo** tribal language family has created an online [audio dictionary](#). Because of the accessibility of the language audio, we recommend using the Northern Pomo dialect as an example of the Pomo language words for the species discussed in this lesson.

## ENGAGE

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Ask students to respond to the following writing prompt:

1. **What is your favorite type of outdoor landscape?**
2. **What are some of your favorite things to do outside in our county?**
3. **When you spend time outside, what are you normally doing, and who are you with?**

## EXPLORE

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Explain to students that they are going to explore examples of the Indigenous species of plants and animals, including humans, in the Oak Woodland Ecosystem, one of the ecosystems in the land tended by Pomo people in Northern California. Each species not only has an important role to play in the Oak Woodland ecosystem, but also has special cultural significance to Native peoples in the area.

Provide students with the “[Oak Woodlands Species Cards](#)” and walk students through each card (optionally looking up the Northern Pomo word for each species in the online audio dictionary). Explain that even within the Pomo community, there are twelve tribes, each with their own language dialect. Many of the dialects are quite different from one another, even though the tribes are culturally connected.



Native people rely on the species on the cards for food and for traditional practices. The species also have an important relationship to one another. On the front of each species card is information about the trophic level, what each species eats and is eaten by. Students will learn about trophic levels in greater depth in the following lesson.

To better familiarize themselves with the species, ask students to organize their cards in the following combinations, using the cultural and scientific information provided:

1. Find all the cards that are collected in a basket.
2. Find all the cards that are hunted by Pomo people.
3. Find all the cards that are eaten by deer.
4. Find all the cards that are eaten by humans.
5. Find all the cards that rely on the oak tree for shelter.
6. Find all the cards that rely on the oak tree for food.

## EXPLAIN

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Explain to students that every one of the species explored is important to the health of the ecosystem. Without one of the species, Native culture would be impacted, as would many other species populations.

## ELABORATE

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To further explore the connection between the species on the cards, make combinations of 3-5, based on what species eat. Explain to students that these combinations are called **Food Chains**. Allow students to share their food chains with one another.

As students make their combinations, you may ask:

1. **Which species eat plants?**
2. **Which eat meat?**
3. **Are any species not eaten by another?**
4. **What role do the mushrooms play?**

As an extension, provide time for students to practice making food chains using the [Woodland Food Chain game](#) from PBS Kids.

## EVALUATE

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To wrap up the lesson, ask students to reflect on the following:

1. **How is culture connected to nature?**
2. **How does culture depend on the health of the ecosystem?**

## VOCABULARY

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**Ecosystem:** A system, or a group of interconnected elements, formed by the interaction of a community of organisms with their environment.

**Species:** A group of similar organisms that are able to reproduce. This is part of how scientists classify living things in order to organize or compare them.

**Culture:** The customs, arts, social institutions, and achievements of a particular nation, people, or other social group.

**Food chain:** A series of organisms interrelated in their feeding habits, the smallest being fed upon by a larger one, which in turn feeds a still larger one, etc.

**Dialect:** A particular form of a language which is peculiar to a specific region or social group.

## STANDARDS

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### Common Core:

#### CCSS.ELA-LITERACY.RH.6-8.7

Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.

### CA Indian Essential Understandings:

**Essential Understanding 1:** California is home to the largest number of culturally diverse American Indian tribes in the country; each with distinct language and cultural heritage and histories.

**Essential Understanding 3:** Tribal traditional beliefs and practices, including links to spirituality, are practiced in communities where the culture, traditions and languages are vibrant parts of daily life. Additionally, each tribe has an oral history that predates contact with non-Indians.

### NGSS Standards:

[Section 1: Lessons 3-8](#) work together to reach the following standards:

**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.

**MS-LS2-2.** Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

**MS-LS2** -3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

**MS-LS2** -4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

**MS-LS2** -5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

### **CA Environmental Principles and Practices:**

#### **Principle 1 - People Depend on Natural Systems**

The continuation and health of individual human lives and of human communities and societies depend on the health of the natural systems that provide essential goods and ecosystem services. Continuation and health of individual human lives and of human communities and societies depend on the health of the natural systems that provide essential goods and ecosystem services.

**Concept A.** The goods produced by natural systems are essential to human life and to the functioning of our economies and cultures.

#### **Principle 2 - People Influence Natural Systems**

The long-term functioning and health of terrestrial, freshwater, coastal, and marine ecosystems are influenced by their relationships with human societies.

**Concept B.** Methods used to extract, harvest, transport, and consume natural resources influence the geographic extent, composition, biological diversity, and viability of natural systems.

#### **Principle 3 - Natural Systems Change in Ways that People Benefit From and Can Influence**

**Concept B.** Human practices depend upon and benefit from the cycles and processes that operate within natural systems.

## RESOURCES

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- [BBC - Food Chain Challenge](#)
- [Northern Pomo Audio Dictionary](#)
- Pepperwood Preserve - [Resources for Teachers](#)
- [Oxford Dictionary](#)
- [Dictionary.com](#)

**For more information about California's Oak populations, read:**

- [Indigenous Uses, Management, and Restoration of Oaks of the Far Western United States](#)
- [Sudden oak death spreading fast, California's coastal forests facing devastation](#)
- [California's valley oak is poorly adapted to rising temperatures, study finds](#)
- [CNPS Announces Re-Oak California](#)
- [California sudden oak death epidemic 'unstoppable': New epidemics must be managed earlier, say experts](#)
- [Sudden Oak Death: Humans Fostering Forest-destroying Disease](#)