



Grade Level: 8  
Subject: Science

# Canoe Design

## ESSENTIAL UNDERSTANDINGS

- History
- Identity
- Language
- Lifeways

## LEARNING OUTCOMES

- Students will be able to identify the types of transportation Native American peoples used in the Pacific Northwest.
- Students will be able to describe the different types of canoes used by Native Americans. Students will be able to construct a model canoe that meets the requirements and constraints of the experiment.

## CULTURALLY RESPONSIVE PRACTICES

- Goal setting
- Higher level thinking: creating
- Interaction with others through group planning and testing
- Connecting to students' personal families and family members
- Preserving and honoring cultural history
- Student talk, working together and individually
- Music

## ASSESSMENT

Students will be assessed on their ability to complete the "Build-A-Canoe" packet and their participation in their group.

## Overview

The only form of transportation for the Native peoples long ago was on foot or on the water by canoe. Native Americans had to use what was around them in order to provide for their families and construct transportation out of the resources in the natural world. The canoes were hollowed out by fire, carved to create a shape that would float in the water, then steamed to help open them up. In this activity, students will be designing, constructing, and testing their own canoes.

## MATERIALS

- [Canoe Read Aloud](#)
- [Vocabulary](#)
- [Build-a-Canoe Packet](#)
- Rubber Bands
- Popsicle Sticks
- Paper Clips
- Pennies
- Pencils
- Water
- Small Tub
- String
- Scissors

## LOGISTICS

- Where does this activity take place?  
**Classroom**
- How are the students organized?

**Whole Class    Teams: 3-5**

## TIME REQUIRED

**Two 50 minute sessions**

## STANDARDS

### Oregon Common Core State Standards: ELA-Literacy

**6-8.RST.1** Cite specific textual evidence to support analysis of science and technical fields.

### Next Generation Science Standards

**MS-ETS1-2** Evaluate competing design solutions using a systemic process to determine how well they meet the criteria and constraints of the problem.

### Oregon Social Sciences Academic Content Standards

**Historical Knowledge 8.25** Evaluate the impact of the intersectionality of what constitutes identity including, including but not limited to, gender, age, race, ethnicity, religion, physical and mental disability, and class on the living histories and experiences of peoples, groups, and events.

### English Language Proficiency Standards

**6-8.5** An ELL can conduct research and evaluate and communicate findings to answer questions or solve problems.

## Background for Teachers

\*Teachers should review Canoe Read Aloud document prior to the lesson\*

"Pacific Northwest canoes are both a sophisticated art form and a symbol of cultural identity, reflecting local needs, sea conditions, and skills. Although there are a variety of canoe types depending on tribal formats and traditions, canoes are one of the three major forms of monumental art among Northwest Coast First Nations, along with plank houses and totem poles. However, the canoe is the single most important physical manifestation of Northwest Coast culture. They go back to the Great Flood myth, and exist at the nexus between technology and living beings. They are spiritual objects which garner great respect. The hulls are constructed of once-living trees that survived centuries and sustained the lives of innumerable birds, insects, mammals and other plants. Prior to European contact, and with painstaking precision, these trees were felled (or even occasionally harvested from the forest floor or beaches) and transformed into vessels, without drawings, calculations, or engineering as we know them today. Journeymen carvers and now-forgotten artists formed the logs into mighty sea craft."

-Simon Fraser University

### **5 Canoe Journey Facts from Eighth Generation:**

**"1. Canoe Journey began in 1989:** Canoe Journey was first started in 1989 by Emmett Oliver (Quinault) with the "Paddle to Seattle" as part of the centennial celebration of Washington State. This year marks 30 years of the revival of this traditional method of transportation and the significant cultural experience for all who participate.

**2. "Paddles Up" is a request to land:** As canoes arrive on the beach, "paddles up" signals their request for permission to come ashore. When the canoes come ashore, they'll be greeted by a tribal leader. This year, Bill James—Tsi'li'xw, hereditary chief of Lummi Nation—will greet every canoe.

**3. Canoe Journey strengthens connections:** As stated on the Paddle to Lummi 2019 website, Tribal Canoe Journey "holds special significance to Coast Salish Tribes as it truly honors and nourishes the unique relationships and connections with the land, water, and one another. "

**4. It's the best place to learn about Native people from Native people:** Stephanie Masterman (Tlingit), Store Manager of Eighth Generation, says "it is a great place to participate in cultural exchange; it is an even better place for people who want to learn about Native people from Native people, rather than from textbooks or museums collections, and it is the best place for our friends and allies to come celebrate our cultures with us."

**5. Everyone is invited to attend:** From July 24th - 28th, everyone — from tribes to the general public — is invited to participate in the Sqweshenet Tse Schelangen "Honoring Our Way of Life" at Lummi Nation, where all will share in a Potlatch Protocol Celebration that includes sharing of meals provided by the host tribe, singing, dancing, and storytelling."

### **Websites:**

<https://www.willametteheritage.org/the-grand-rondes-canoe-journey/>

<https://www.smokesignals.org/articles/2019/08/14/teamwork-is-a-constant-during-annual-canoe-journey/>

[https://www.sfu.ca/brc/art\\_architecture/canoes.html](https://www.sfu.ca/brc/art_architecture/canoes.html)

<https://eighthgeneration.com/blogs/blog/tribal-canoe-journey>

## VOCABULARY

- **Bailer** - a tool used for getting water out of the canoe if water comes over the side. They are usually carved from wood or bark.
- **Canoe** - a narrow wooden structure similar to a boat with pointed ends, propelled by paddles - the only form of transportation for Native peoples long ago aside from foot. They were the most efficient method of travel. There are several styles of canoes, from Chinookan western style with a nose to shallow river canoes. The Chinookan canoes are meant for deeper and swifter water and the river canoes are meant for shallower and slower waters.
- **Mats** - woven from cattail or tule - would be used inside the canoe to either sit or kneel on - they were also used to cover the canoe once it was on land
- **Cattail** - a tall, reed like marsh plant with straplike leaves and a dark brown, velvety cylindrical head of numerous flowers
- **Tule** [too-lee]- a large bulrush that is abundant in marshy area of California

## Opening

Ask students: *Before there were cars and bicycles, how do you think Native American traveled and got where they needed to go?"*

Give students a moment of individual "think time" and then ask students to share with the class.

## Activity

### Day One:

1. Review the vocabulary words with students.
2. Present students with the Canoe Read Aloud. This can be done as a whole class, small groups, partners, or individually.
3. Assign students into groups of 3
4. Pass out the Build-A-Canoe packet to each student. Explain to students that they will be building a model canoe out of various materials and placing it into a tub of water to see if it will float. Review the directions of the assignment with students.
5. Allow enough time for students to complete the planning stage of this experiment.

### Day Two:

1. Have students get into their groups and gather the materials they will need to start building their canoe.
2. Once students have built their canoes, allow them to test their canoes in the water.  
*Teachers will decide whether students can make revisions to their canoes after their test.*

## Closure

Have students answer the questions at the end of their Build-A-Canoe packet. If time allows, have students share their findings with other groups and/or the whole class.

## Differentiation

- This activity can be done in partners rather than small groups
- This activity can be spread out for more than two days if needed
- Teachers may assign group roles to students (recorder, builder, material gatherer, etc.)

## Extension

- Students who finish early can sketch another canoe model or describe what changes they would make to the canoe if they were to build a new model
- Students who finish early can watch Canoe Family Song & Dance videos on the Grand Ronde Cultural Education Page: <https://www.youtube.com/channel/UCDYgwWYv7lwDTq-3iFp1Ryg/videos>

## Notes/Other

Jan Michael Looking Wolf's or Grand Ronde Canoe Family audio tracks can be played as background music while students are working. These audio tracks can be found on Spotify or Apple Music.

Jan Michael Looking Wolf: [Spotify](#) and [Apple Music](#)  
Grand Ronde Canoe Family: [Spotify](#) and [Apple Music](#)

## Appendix

Canoe Read Aloud:

<https://drive.google.com/file/d/1aZU7B65nooBxTLiGVh1z7D2dRqfHsyhJ/view?usp=sharing>

Build-a-Canoe Packet:

[https://drive.google.com/file/d/1ivIVcfm7ZZ8WsitaR8fhKyDLceLOL\\_7Y/view?usp=sharing](https://drive.google.com/file/d/1ivIVcfm7ZZ8WsitaR8fhKyDLceLOL_7Y/view?usp=sharing)