

LESSON PLAN:  
M.Bowes  
Our Global Boating Culture

Statewide audience, but can be catered to a specific region

1.**Grade:** 6-8 can be modified for older students

2.**Courses:** Physical Science/Social Studies

3.**Time:** Approximately 1 hr.

**Learning Goals and Outcomes:**

To help deliver students to a broader place of recognition with respect to their connection to the boat both ancient and modern. Students will be able to identify various types of boats, approximate their application, and build connections between modern and ancient technologies.

**Learning Objectives:**

Addresses State Science Standards

<https://education.alaska.gov/akstandards/#c3gtabs-science>

A. Science as Inquiry and Process

1, Develop an understanding of the processes of science used to investigate problems, design, and conduct repeatable scientific investigations, and defend scientific arguments

3, Develop an understanding that culture, local knowledge, history and interaction with the environment contribute to the development of scientific knowledge, and local applications provide opportunity for understanding scientific concepts and global issues

B. Concepts of Physical Science

1, Develop an understanding of the characteristic properties of matter and the relationship of these properties to their structure and behavior.

E. Science and Technology

3, Develop an understanding of how scientific discoveries and technological innovations affect and are effected by our lives and cultures

F. Cultural, Social, Personal Perspectives and Science

1 Develop an understanding of the interrelationships among individuals, cultures, societies, science, and technology

3, Develop an understanding of the importance of recording and validating cultural knowledge

G. History and Nature

4, Develop an understanding that advancements in science depend on curiosity, creativity, imagination, and a broad knowledge base

### Culturally Responsive Curriculum Standards:

B. Recognizes cultural knowledge as part of a living and constantly adapting system that is grounded in the past, but continues to grow through the present and into the future.:

C. Uses the local language and cultural knowledge as a foundation for the rest of the curriculum.

### Description of Context:

#### 4. Essential Question –

How do boats shape or reflect how a society operates in its environment?

How is a culture reflected by the boats that they use?

### Materials and Resources:

Images, Video, Touring Kayak, Bidarka Replica, measuring tape, paper pencils, calculators and ipads or other web ready devices.

“Hook” Short whitewater clip: <https://www.youtube.com/watch?v=9QDJSXCCeGY>

Two additional videos of modern adventure and keeping a technology alive:

<https://www.youtube.com/watch?v=6gYn0-QDHOE> -Kayaking the Aleutians

[https://www.youtube.com/watch?v=C3Yjzv\\_LsAs](https://www.youtube.com/watch?v=C3Yjzv_LsAs) -The Last Baidarka Trailer

### Learning Activities:

Kahoot Quiz of boating imagery and boating culture to engage students and prime them for lesson ahead <https://play.kahoot.it/#/k/cb4e75db-02e3-497c-96a4-e293c36a915c>

(Quiz in development)

#### Individual

Ask the class to take a couple minutes at their own seats to make a list of the boats they can think of, making note of any boat they saw that day. If you can't think of any more boats to list start to think about how the boats on the list are different and how they are the same. (5min)

#### Small Group

In small groups (3-4) students are asked to share their lists with each other and then begin to discuss how those boats are used and what details of each boat make it suitable for its 'job' (specified use) or What makes a boat good for a particular task. Ask students to identify boats' propulsion source and to designate whether the. (5min)

Show several images, ask for groups to identify its best purpose. What features of each boat give clues to its purpose? See accompanying document: Keynote slides-boats (5 min)

Compare two boats: Modern Kayak vs. Baidarka

Let's compare them, make some measurements and compare some data. (Materials, dimensions, weight, volume, density, Keel, rudder, deck surface, bow, flexibility, length-width ratios) Calculate, record and compare, analyze data (compare boats by their numbers) What's the same? What is different? Biggest differences? (35min)

### Class Discussion:

Well class what did we learn about boats today? Let the discussion develop organically, but steer it toward recognition of importance of boats large and small in our lives and to acknowledge the highly advanced technology utilized by indigenous people. (5min or time remaining) Leave them with a question to think about when they leave.

Some possible questions to engage students, guide them through the lesson, or as a parting thought:

What do you know about boats?

What are essential characteristics of a boat?

What are some common boat building materials?

If you were a boat builder what are some design considerations?

How is your life impacted/ influenced directly and indirectly by boats?

What makes a boat fast? Able to pull a load, not sink in whitewater, navigate shallow rivers?

How do boats contribute/ influence your life? What role do they play in our society?

### Assessment:

Quiz at the beginning of following meeting or an 'exit ticket' re: what they learned and how it is important to them.

### Possible Follow-up Projects

- Scale model build-off of w/ performance testing for payload, stability (waves) and hydrodynamics (drag), aerodynamics (wind). (same style)
- Larger classes can divide boats into different categories and compete w/in that category.
- Build full size boats
- Knowledge bearer- boat builder visit - One People Canoe Society.
- Visit local boat builder(s)