

# BOWHEAD WHALE TEACHER CONTENT PACKET

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## INTRODUCTION

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This resource examines objects on view in the Alaska exhibition and Art of the North galleries.

The bowhead whale inhabits northern waters year-round. Scientists estimate the current population to be 7,000-10,000 whales. Much of that population lives in the waters around Alaska. Alaska is the largest state in the United States with a landmass of over 663,300 square miles. Surrounded by both the Arctic Ocean and the Pacific Ocean, the total shoreline length of Alaska is almost 34,000 miles—making up about 64% of the entire United States coastline.

Today, access to the bowhead whale remains critical for Alaska Native peoples. Through their objects and traditions, we can learn both invaluable innovations and knowledges as well as resilient ways of being in Alaska.



## USING THE GUIDE

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Inside of this teacher’s guide you will find an expanded explanation on each topic present in the booklet alongside additional information and activities.

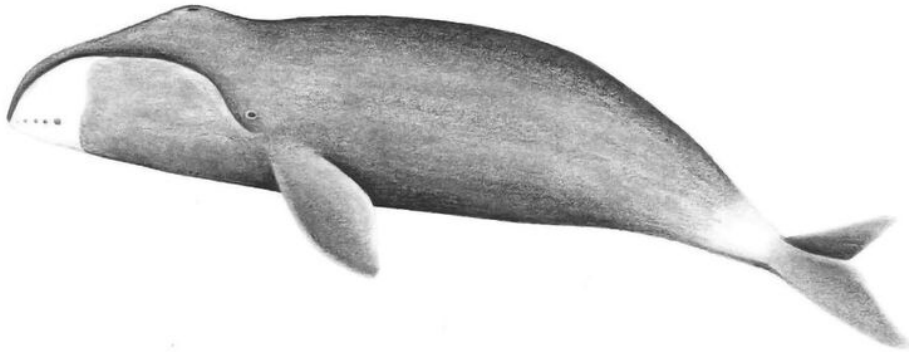
This guide highlights objects of the North found in the Anchorage Museum collection. The prompts are intended to engage third grade students and up with the context of the objects, creating deeper understanding of ways our unique place in Alaska shape lifestyles and traditions through objects and artworks.

- Explore: Challenge students to be curious when observing the objects, artworks and information presented throughout the guide. Support students to do their own research and delve deeply. The information is intended not only to educate but to spark interest in students and encourage further exploration on these topics. Slow down and look closely, each object has a story to tell.
- Discover: Encourage students to look beyond the artworks that they see and examine the details they notice either in the guide or in the exhibitions. As you move through this resource, share the additional knowledge and information presented in this packet to allow students to develop a deeper understanding of landscapes and resources of Alaska, Alaska Native lifestyles and cultures. Make this journal yours. Use the pages to draw, write and note in your own way.
- Ask questions: Build an inquiry-driven experience for the students. Ask students to share what they observe and/or what they may already know. As you introduce background knowledge and object information, encourage students to ask questions about what more they want to know and what they don’t understand. Be curious about the details.
- Connect: Encourage students to reflect on their own life and experiences. Invite students to consider their own personal connections to what they have learned. The activities of this guide foster opportunities for such personal reflection. Ask students to share with each other what connections they have found. Share with a friend, a family member or mentor about your experience.



## THE BOWHEAD WHALE

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Scientific name: *Balaena mysticetus*  
Class: Mammalia  
Order: Cetacea  
Suborder: Mysticeti  
Family: Balaenidae  
Genus: *Balaena*  
Species: *Mysticetus*

Length: Up to 60 feet

Weight: Up to 120,000 pounds or 2,000 pounds per foot in length

Life span: Estimated up to 150 – 200 years

Color: Black body with varying amounts of white on their chin, abdomen and tail

The bowhead whale has a thick layer of fat, called blubber, which insulates the whale in cold water. This layer of fat can be 10-20 inches thick. Bowhead whales are mammals—meaning they are warm blooded, have bones and breathe oxygen—that also produce milk to feed their young. Unlike fish, bowhead whales breathe through a set of lungs rather than gills. After diving below water for 15 to 20 minutes or longer, the whale returns to the surface for several minutes to breathe. The bowhead whale breathes through two openings called blowholes on the top of its head. These blowholes are like nostrils and are used for inhaling and exhaling air. Bowhead whale may access air through small ice openings. Bowhead whales may use their large heads to bump and break ice as much as two feet thick in order to create an opening for breathing.

The shape and size of the head, which accounts for a third of total body length, gives the bowhead whale its name. In other regions of the North, the whale is also called the Arctic Right or Greenland Right Whale. Bowhead whales are born a pale gray color and transform into their blue-black color as they age. Researchers have observed that as the whale ages, white coloration in the tail region of the whale increases. Pregnant female bowhead whales calve every three to four years. Gestation is approximately 13 to 14 months. Birthing typically occurs



during the warmer summer months. Once the calf is born, the mother pushes their newborn to the surface to encourage breathing. Researchers believe that calves may drink as much as 130 gallons a day of their mother's milk. The calf is usually around 14 feet in length at birth. The calf grows about 10% each year until reaching maturity at 43 feet.



## TERMS

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<i>Aġviq</i>	North Slope Iñupiaq term for bowhead whale
<i>Aghvepik</i> ( <i>aghveq</i> )	St. Lawrence Island and Siberian Yupik term for bowhead whale
<i>Alaska Natives</i>	Indigenous peoples of Alaska, often defined by language group
<i>Blowhole</i>	the nostril(s) on top of a whale's head used for respiration
<i>Blubber</i>	the thick layer of fat between the skin and muscle in marine mammals
<i>Mammal</i>	a warm-blooded vertebrate with hair or fur that produces milk from female mammary glands to feed their young





The Western Arctic bowheads usually inhabit the Bering, Chukchi and Beaufort Seas. In the cold winter months, these whales stay in the Bering Sea area between Alaska and Russia. When the waters become warmer in the spring, migration begins to the Beaufort Sea for the summer. Each year the migration timing and route changes slightly, depending on sea ice conditions.

*Migration*                    the seasonal movement of a population from one location to another

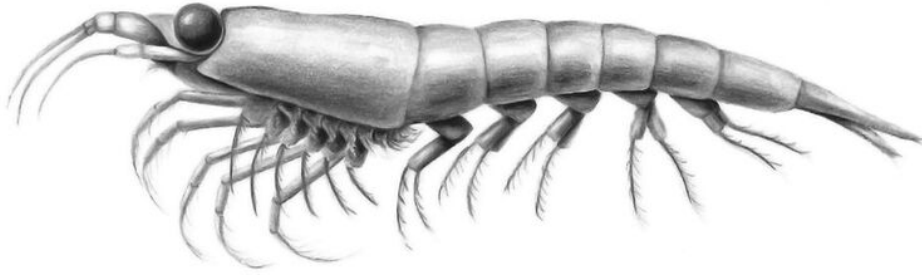
#### EXTENSION ACTIVITY

Invite students to identify other animals that migrate. Research an animal and create its profile to present in class. Consider what ecosystems are necessary for this animal to thrive.

*Ecosystem*                    a community of living organisms and their physical environment

## FEEDING

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The scientific name for krill is Euphausiacea

The bowhead whale usually feeds on small crustaceans such as krill. When it is time to feed, the bowhead whale opens its jaws — allowing the water and prey to enter the mouth. The whale then closes its mouth and uses its tongue to force water out through the baleen. The baleen acts as a filter, capturing the prey for the whale to swallow.

*Crustacean* a large class of animals that have an exoskeleton, such as crabs and krill

### EXTENSION ACTIVITY

Ask students to research the food chain of the bowhead whale. *What does the krill eat? What predated the whale? What ecosystems are necessary for the bowhead whale to thrive?*

Invite students to present in class.



## ALASKA NATIVE WHALING

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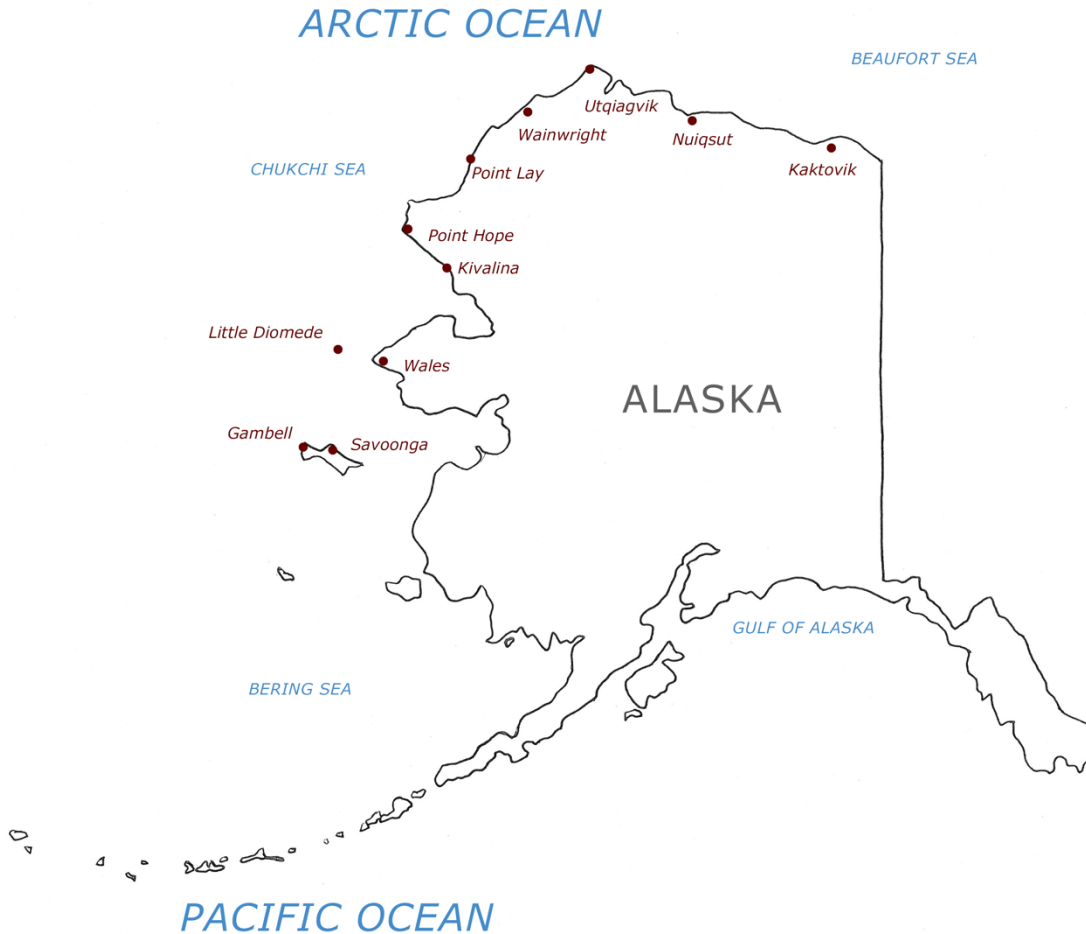
Alaska Native peoples have harvested whales for thousands of years. The hunting of whale is part of a sustainable, symbiotic relationship Alaska Native peoples have with the land and animals.

*Symbiotic*                    a special type of interaction between two or more species living together; a relationship with mutual benefit or dependence

*Sustainable*                the ability to support, maintain or continue

*Harvest*                     sustainable and responsible use of wild, renewable resources from the land by individuals, families and communities for food, shelter, fuel and other essential needs that are fundamental to a way of life

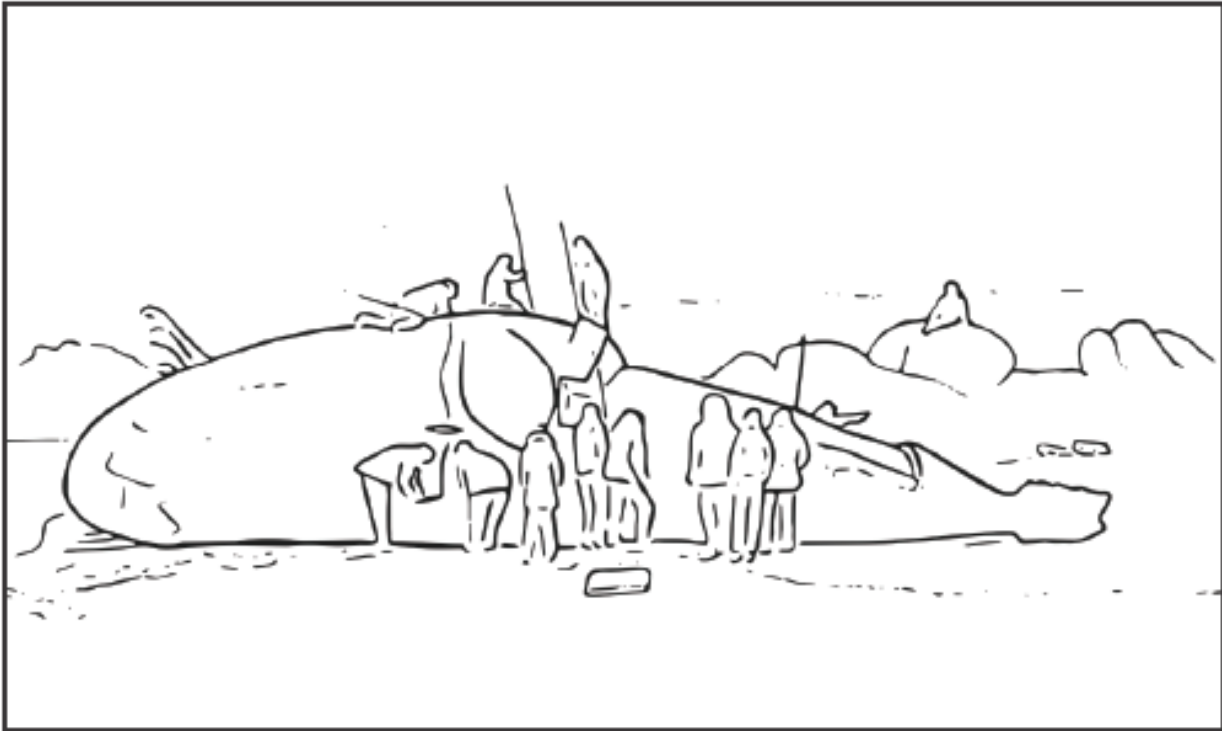




Today, eleven Alaska Native communities along with the Makah tribe in Washington state have the right to hunt bowhead whales in North America. Bowhead whales are harvested through legal, noncommercial hunts in spring and autumn. The many products of the bowhead whale provide important nutrient-dense food for whaling villages. The harvesting of bowhead whales also provides the opportunity for Alaska Native peoples to continue cultural lifeways. Hunting and harvesting bowhead whale supports communal wellbeing through cultural activities and fosters a responsible lifestyle.

Registered whaling captains are permitted to harvest a specific number of bowhead whales each year in accordance with the International Whaling Commission (IWC). The IWC researches and monitors whale populations around the world and regulates whaling activities. The Alaska Eskimo Whaling Commission helps to implement the rules of the IWC in Alaska and advocates for the needs of local whaling communities. The Alaska Eskimo Whaling commission supports the continuance of whale harvest while also protecting the bowhead whale population inhabiting Alaska's waters.



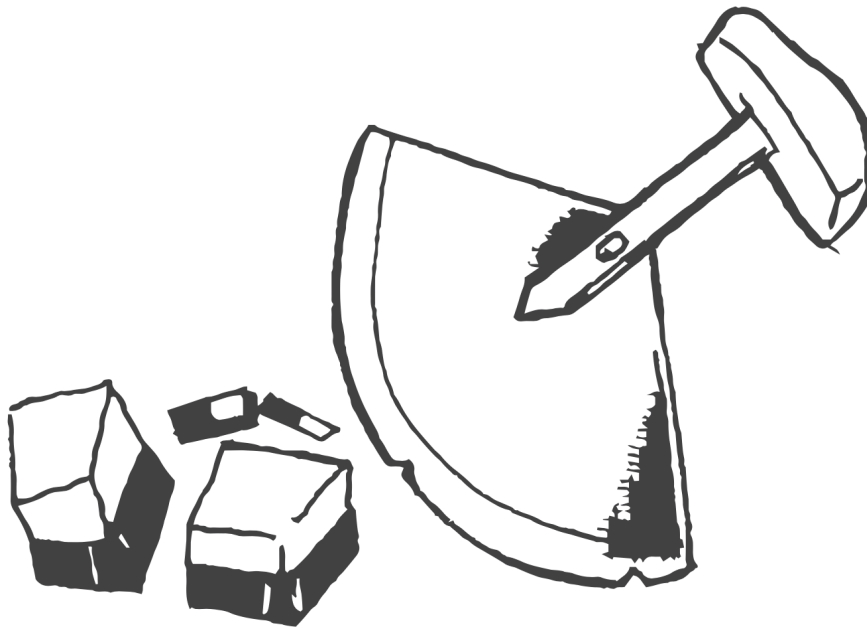


Sketch of Simon Koonook's *Attungaruk the 3rd's Whale*, 1980, acrylic paint, canvas, 1980.25.1

Alaska Natives have depended on marine mammals for thousands of years. Methods of harvesting have changed over time and vary between communities. Today, as in the past, every part of the whale serves a purpose.

*Aḡvaḡniaq* North Slope Iñupiaq verb for the hunting of bowhead whales

*Aghveghniqq* St. Lawrence Island and Siberian Yupik term for whale hunting



Whale blubber and skin is consumed as a traditional food of the Inuit and Chukchi cultures. This meal provides important nutrients such as vitamins A, C, and D as well as iron and omega-3 fatty acids. Once harvested, whale meat and fat are preserved and stored to be eaten throughout the year.

*Maktak* North Slope Iñupiaq term for traditional meal of whale skin and blubber

*Mangtak* St. Lawrence Island and Siberian Yupik term for whale skin with attached blubber

## ACTIVITY 1

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Invite students to think about what ingredients are important in their life and community.  
*Where do these ingredients grow? When, where and how are they purchased or gathered?*

**PROMPT** Think about what ingredients are important to you and your community. Ask a family or community member to share with you a recipe for making a dish using one of those ingredients. Record the recipe here.

Encourage students to name the food in the language that feels most comfortable.

Share with the group. Photocopy the recipe cards and distribute so each student has a copy.





Sketch of *Whale Oil Lamp*, American, Massachusetts, 1860-1880, metal, 1984.9.2ab, Alaska exhibition

This lamp belonged to Captain Edward Penniman, a whaling captain in the 1860s-1880s. This gimbal style lamp burned whale oil. A single bowhead whale could produce 250 barrels of oil.

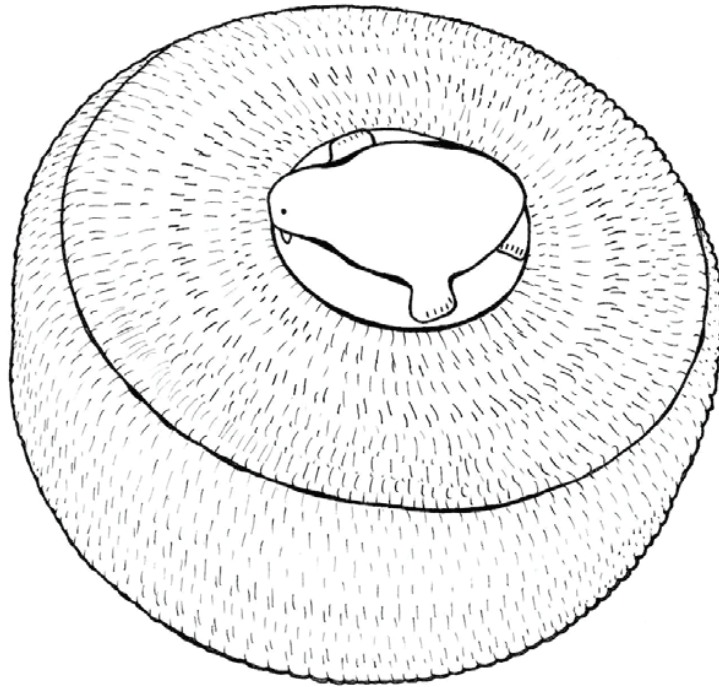
The gimbal mechanism allows an object, such as the gimbal styled lamp above, to pivot and stay horizontal while in motion and prevent oil from spilling. For example: a compass needle points at north, even when the compass as a whole is moved.

*Aḡviñḡaq*                      North Slope Iñupiaq term for oil rendered from whale blubber

*Aḡviñḡamik*                      North Slope Iñupiaq expression for making oil from whale blubber  
*Misiḡarriruq*

#### EXTENSION ACTIVITY

Invite students to think about an object they would want to take with them on a sea journey. Students will draw a design of a carrier or a means to secure the object.



Sketch of *Basket*, Carl Hank Sr., Iñupiaq, Utqiagvik, 1972, 1972.56.1ab, Alaska exhibition

Baleen is the material found within the mysticeti whale mouths, in place of teeth. The baleen hangs down from the roof of the mouth in two finely packed rows of over 600 plates. These plates are typically black in color and can reach up to 14 feet long.

Baleen is used to create objects such as baskets. Baleen basketry was developed in the early 20th century, after the end of commercial whaling, to provide a market for Iñupiaq craftsman. Baleen is prepared for weaving by soaking in water to soften the material, splitting a plate longitudinally to make the wefts and removing away the inner core.

*Suqqaq* North Slope Iñupiaq term for baleen

*Suqaq\** St. Lawrence Island and Siberian Yupik term for baleen (asterisk, is written after final q of a noun indicates that the base, or combining form, of that noun terminates in an unpredictably strong gh)

*Mysticeti* a suborder of Cetacea (aquatic mammals) which names whales that have baleen

## ACTIVITY 2

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Students are invited to look closely at a baleen basket and sketch a detail that attracts their attention.

**PROMPT** Look closely and examine a baleen basket. Sketch a detail that attracts your attention.

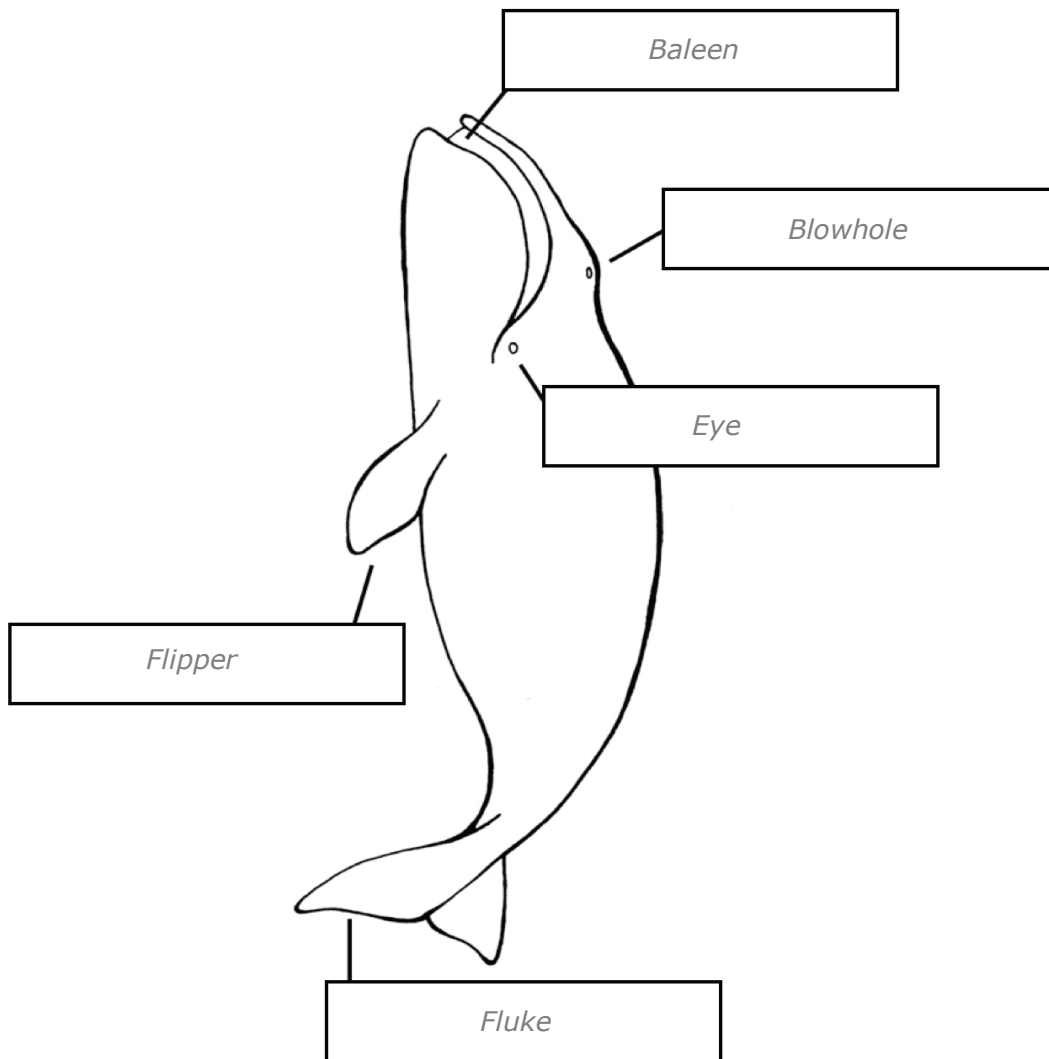




### ACTIVITY 3

Students are invited to label parts of the bowhead whale using the word bank below. Examine further photographs of the bowhead whale online.

**PROMPT** Label the parts of the bowhead whale using the word bank below.



WORD BANK

Flipper  
Fluke

Eye

Baleen  
Blowhole



## IMPORTANT DATES IN BOWHEAD WHALING HISTORY

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### EXTENSION ACTIVITY

Invite students to select an item on the timeline that they want to learn more about. Ask students to present on the date they choose—what caused this important event, who was involved in this event and what impact did it have?

- |      |   |
|------|---|
| 800  | Archaeological evidence suggests that the Alaska Native peoples have been whaling since at least 800.   |
| 1712 | American commercial whaling begins.   |
| 1848 | Whaling captain Thomas Roys discovers whale in the Bering Strait. Due to the discovery of bowhead whales in the Bering-Chukchi-Beaufort Seas, commercial arctic whaling increases.  |
| 1947 | The International Whaling Commission (IWC) is formed to provide proper conservation of whale stocks and regulate commercial hunting of whales. After severe depletion of the bowhead whale population, the group has worked to regulate whaling around the world in order to prevent extinction.  |
| 1971 | The Alaska Native Claims Settlement Act was signed into law on December 18, 1971 by President Richard Nixon. This act provides for the settlement of certain land claims of Alaska Natives, securing some rights for whaling communities.   |
| 1972 | The Marine Mammal Protection Act of 1972 was enacted on October 21, 1972. This act establishes a Marine Mammal Commission to protect marine mammals and also regulates the sale of marine mammal products.  |
| 1973 | The bowhead whale was added to the endangered species list under the Endangered Species Act. The Eastern Arctic bowhead whale stock population diminished from over 30,000 prior to commercial whaling to less than 1,000. The Bearing Sea Stock also plummeted in the early 1900s with an estimated population to be around 5,000 in the late 1970s. |
| 1977 | The International Whaling Commission ceased all bowhead hunting due to an alarming population drop—significantly impacting the Indigenous whaling communities.  |
| 1977 | As a result from ceasing bowhead whale hunting, Alaska Native whalers established the Alaska Eskimo Whaling Commission to represent the whaling communities in order to convince the government to preserve   |



subsistence hunting of bowhead whales. Since 1981, the Alaska Eskimo Whaling Commission has managed the bowhead whale subsistence hunt in accordance with the International Whaling Commission and the National Oceanic and Atmospheric Administration.

- 1978 The state of Alaska passed subsistence law requiring the Department of Fish and Game to give priority to subsistence use over other uses of fish and wildlife.
- 1981 The U.S. Department of Commerce and NOAA granted the Alaska Eskimo Whaling Commission responsibility for local management of whale harvest under the 1981 Section 112 of the MMPA (16 U.S.C. 1382).
- 1985 The International Whaling Commission set commercial whaling catch limit to zero.
- 2001 The International Whaling Commission released data demonstrating population growth in the bowhead whale. The Bering-Chukchi-Beaufort Seas stock numbered over 10,500 bowheads in 2001 and the population been increasing at an annual rate of 3% since 1978.
- 2008-2012 The Alaska Eskimo Whaling Commission sets quotas for Alaskan whaling communities. Alaskan whaling communities may land up to 280 whales or make 335 strikes (attempts to harvest) over the five-year period. Strikes may not exceed 67 attempts in any one year. This harvest quota affects 0.1-0.5% of the whale population as well as prevent communities from harvesting cows with calves.
- 2013-2018 The Alaska Eskimo Whaling Commission sets forward new quotas for Alaskan whaling communities in accordance with new world-wide quotas from the International Whaling Commission. Alaskan whaling communities may land up to 336 whales over this five-year period.



“Life in our villages is a lot different from what most of you are used to experiencing. Most of you here go to the grocery store on a regular basis for your food.

In Savoonga, we have one general store with very little groceries. Maybe some canned milk. A pound of meat, if you can find it there, might cost \$10 to \$12. You can buy gasoline there for \$7.56 a gallon.

There are a few jobs in our village, working for local government or the school. But that’s pretty much it.

So we don’t get much of our food from the store. We take most of our food from the ocean — our whales, walrus, seals, and fish.

This is how we live and raise our families, and care for our children and our elders. We’ve been living this way for at least 2,000 years.

....

We may come from places that you have never heard of. Our way of life may seem foreign to you. But we are people just as you are. We have families.

Our food security depends on the ocean, not the grocery store. The food we take from the ocean keeps our families alive and healthy. The hunting practices that enable us to take that food keep our communities and our cultures alive and healthy.”

— George Noongwook, Whaling captain from Savoonga  
Alaska and Chairman of the Alaska Eskimo Whaling  
Commission on the 64th annual meeting of the IWC, July 2, 2012 at Panama City, Panama



## FINAL NOTES AND DISCUSSION

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Allow students time to reflect on what they have learned.

- What objects did they find interesting?
- What drew them to those objects?
- What surprised them or challenged them?
- What more would they like to learn?



## RECOMMENDED READING

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Books below are available at the Anchorage Public Library.

### Preschool to Kindergarten

<i>Whale Snow by Debby Edwardson</i>	E-N EDWARDS
<i>Bowhead Whale by Joanasie Karpik</i>	E-N 599.5276 KARPIK

### Lower Elementary (1<sup>st</sup> to 3<sup>rd</sup> grade)

<i>Mammals of Alaska by Alaska Geographic</i>	J-N 599.09798
<i>Alaska's Mammals by Dave Smith</i>	J-N 599.097

### Upper Elementary (4<sup>th</sup> to 6<sup>th</sup> grade)

<i>Whaling Season: a Year in the Life of an Arctic Whale Scientist by Peter Lourie</i>	J 599.5276 LOURIE
<i>Whale by Vassili Papastavrou</i>	J 599.5 PAPASTA

### Middle & High School

<i>Ice Whale by Jean George</i>	J GEORGE
<i>Gift of the Whale: the Inupiat Bowhead Hunt by Bill Hess</i>	N 639.28 HESS

### Adult/teacher resources

<i>The Bowhead Whale by John Burns</i>	N 599.51 BOWHEAD
<i>Balaena Mysticetus: Whales, Oil, and Whaling in the Arctic</i>	N 599.51 FRAKER



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- McCartney, Allen. *Indigenous ways to the present: native whaling in the Western Arctic*: Edmonton, Canada: Canadian Circumpolar Institute Press, 2003.
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- Williams, Maria Shaa Tláa. *The Alaska Native Reader: History, Culture, Politics*. Durham: Duke University Press, 2009.
- Yenawine, Philip. *Visual Thinking Strategies: Using Art to Deepen Learning Across School Disciplines*. Cambridge: Harvard Education Press, 2013.

## WEB RESOURCES

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- Anchorage Museum Resource Center [anchagemuseum.org/collections/archives](http://anchagemuseum.org/collections/archives)
- Anchorage Museum Collections [onlinecollections.anchagemuseum.org](http://onlinecollections.anchagemuseum.org)
- Alaska Eskimo Whaling Commission [aewc-alaska.com/our-work.html](http://aewc-alaska.com/our-work.html)
- International Whaling Commission [iwc.int/aboriginal](http://iwc.int/aboriginal)
- Smithsonian Arctic Study Center [alaska.si.edu](http://alaska.si.edu)
- Smithsonian National Museum of American History [Engaging Students with Primary Sources](#)



For more teaching resources, visit [anchoragemuseum.org/teachingresources](http://anchoragemuseum.org/teachingresources)

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**HEARST** foundations



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FOUNDATION



**ALASKA**  
**HUMANITIES**  
**FORUM**

## RELATED CONTENT AREAS

Alaska Standards for Science K-12

SCIENCE AS INQUIRY AND PROCESS

A3 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

CULTURAL, SOCIAL, PERSONAL  
PERSPECTIVES AND SCIENCE

F1 develop an understanding of the interrelationships among the individuals, cultures, societies, science, and technology

F2 develop an understanding that some individuals, cultures, and societies use other beliefs and methods in addition to scientific methods to describe and understand the world

Alaska Standards for Alaska History K-12

AH.PPE 2 demonstrates an understanding of the interaction between people and their physical environment by: using texts/sources to analyze the similarities and differences in cultural attributes, movement, interactions, and settlement of Alaska Native peoples

AH.PPE 5 demonstrates an understanding of the interaction between people and their physical environment by: comparing and

contrasting the different perspectives between rural and urban areas

Alaska Standards for Visual Arts 9-12

VA:CN11a-HSAC a. Compare and connect contemporary and/or local art through the context of society, culture and history

Alaska Standards for History K-12

Hist.A5 understand that history is a narrative told in many voices and expresses various perspectives of historical experience

Hist.A6 know that cultural elements reflect the ideas and attitudes of a specific time and know how the cultural elements influence human interaction

Hist.A8 know that history is a bridge to understanding groups of people and an individual's relationship to society

Hist.A9 understand that history is a fundamental connection that unifies all fields of human understanding and endeavor

Alaska Standards for Culturally-Responsive Students

B. 1. acquire insights from other cultures without diminishing the integrity of their own;  
B. 2. make 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





E.7. determine how cultural values and beliefs influence the interaction of people from different cultural backgrounds;

E. 8. Identify and appreciate who they are and their place in the world

