

North by Southwest

Bering Sea Communities,
Collaborations and Collections



For Grades 3-5



Loan Kit Curriculum

*celebrating 75 years
of understanding the
human cultural experience*



**MAXWELL
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OF ANTHROPOLOGY

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Note to teachers:

Take your students on a visit to Alaska! This curriculum explores the native people of the Bering Sea region. With these activities, you will meet the people of the region, study their material culture, explore their environment and discover their interesting lifestyle.

The *North by Southwest* curriculum accompanies the loan kit for teachers, which features pictures and objects on the people of the Bering Sea region. Most of the items needed for each activity are found in the loan kit. Lessons are meant to be completed in sequential order; however, some lessons will stand on their own. This is an integrated curriculum and teachers of various disciplines can present the activities. Be sure to adapt each lesson to your curriculum and classroom. Some activities have suggested extensions. The final few lessons use technology, which serves as a good means of doing research on each of the topics featured in the curriculum. Also included is an evaluation. Please complete a form and return it with the trunk when finished. Please include any additional ideas you have for presenting the concepts covered in this curriculum.

Have fun!

The People and the Place

Introduction:

Imagine a land of snow and ice, where the sea stretches for miles and the sun sometimes never rises or sets. Who are the people who live here and how do they survive? How are their lifestyles the same and different to your own?

People have been living in the Bering Sea region or Beringia for thousands of years. The people who live here can be divided into three main language and geographical groups. Iñupiat (in-u-pee-at) and Bering Strait Yupiat (yu-pee-at) “the real people” of northwest Alaska and St. Lawrence Island, Yupiat (yu-pee-at) and Cup’ik (chew-pick) of western Alaska and the Bering Sea and the Unangan (u-nan-gan) “the original people” of the Aleutian (al-u-shun) Islands.

Historically, the people of the Bering Sea region were nomadic, leading a hunting and gathering lifestyle. Hunting animals is very important in a place where people cannot grow their own food. Every part of an animal is used for food, clothing, and making tools and other items. People also gathered plant foods. They set up and maintained social networks and kinship practices, organized trade fairs and shared information about environmental conditions. Over time, people moved to permanent villages, establishing temporary seasonal hunting and fishing camps. Recently with environmental changes and government control, the ways of life of the Bering Sea people have changed. Maintaining traditions in a changing world is an important goal for these people.

Objectives:

- Make observations about people and determine who they are and where they live
- Identify the Bering Sea region on a map
- Find Bering Sea cities on a map
- Match photos of residents with their cities

New Mexico State Standards:

Social Studies

Content Standard I – History

Students are able to identify important people and events in order to analyze significant patterns, relationships, themes, ideas, beliefs, and turning points in New Mexico, United States, and world history in order

to understand the complexity of the human experience.

Content Standard II – Geography

Students understand how physical, natural, and cultural processes influence where people live, the ways in which people live, and how societies interact with one another and their environments.

Materials:

- ☐ Map of North America
- ☐ Map of Western Alaska and the Bering Sea
- ☐ Pictures of Alaskan Natives of the Bering Sea
- ☐ Poster putty, Velcro or tape
- ☐ One observation worksheet per student and pencils

Process:

1. Start by discussing what is anthropology. Anthropology is the study of humans, both in the past and the present. An anthropologist then is a person who studies humans. Explain that the students are going to be anthropologists, studying a particular group of people. Set the stage by having the students imagine they are a curator (someone who organizes and takes care of a collection of objects) at an anthropology museum. One day, a woman came in to the Museum with a box of photographs she inherited from her uncle. Although the photographs are a nice collection and should be kept safe in a museum, all the information about the photographs was unfortunately lost. As the curator of the museum and an anthropologist, it is your job to study the pictures carefully and try to determine who are the people featured in the photographs.
2. Next have the students compare the housing, clothing and accessories and tools they observe among the people in the pictures. Distribute one picture sheet to groups of 4-5 students each and one observation sheet and pencil to every student. Have students discuss in their groups similarities and differences they find among the people in the pictures and record their observations on their observation sheet.
3. When complete, have one representative of each group report out some of their observations.
4. Next, as an entire class discuss the possibilities of who these people are and where they live. They should determine from studying the pictures that the people live in a cold environment near the water. Mention that these people live in a US state. Finally, determine these are Alaskan Natives of the Bering Sea region.

5. As a group, have the entire class find Alaska on a North American map and determine where it is in relation to New Mexico. Highlight some specific areas such as the Arctic Ocean, Bering Strait and Bering Sea. Discuss that this is the region where these people live and that the environment influences the lifestyle of the people who live there. Compare housing, clothing and transportation of these people with people (native and other) in New Mexico.
6. Explain that although the people who live along the Bering Sea are closely related and share a similar lifestyle, they actually speak different languages and practice different rituals. We will explore some of this in later lessons.
7. Be sure to explain that these photographs were taken by a dentist named Dr. Julien G. Manser as he worked on a Coast Guard ship in the Bering Sea. He donated these photographs to the Maxwell Museum of Anthropology along with information about the people. The photos are of people of two language groups, Iñupiat and Yupik. All except one were taken in the 1930's. The one exception, taken in 1901, is from the Lois Minium collection.
8. Finally, select 9 students to place the pictures, one at a time, in each of the appropriate spots on the map. The cards have the location where the photograph was taken. The students need to find that village on the map and place the photograph where it belongs.

Conclusion:

The culture and lifestyle of groups of people are greatly influenced if not determined by the environment in which they live. The housing, clothing they wear, resources for tools and other items they use, local transportation of goods and people and how they obtain their food are all influenced by where they live. The next activity will take a close look at some of the household items, clothing and accessories used in daily life and determine the source of materials for these items.

Extensions:

- Do a comparative study of Native Americans in your area with Alaskan Natives. Compare environments, lifestyles, resources and cultural practices. Use books or the Internet as resources.
- For older or more skilled students, give latitude and longitude for the cities where the people live and have the students find the cities using that information.

Resources:

Reference books:

Alaska Geographic, Inupiaq and Yupik People of Alaska, volume 28, number 3, 2001

Langdon, Steve J., The Native People of Alaska, Greatland Graphics, Anchorage, AK, 2002

The People and the Place

Name _____

Observation Worksheet

Fill in the chart below with your observations of the following things in the pictures of Bering Sea people.

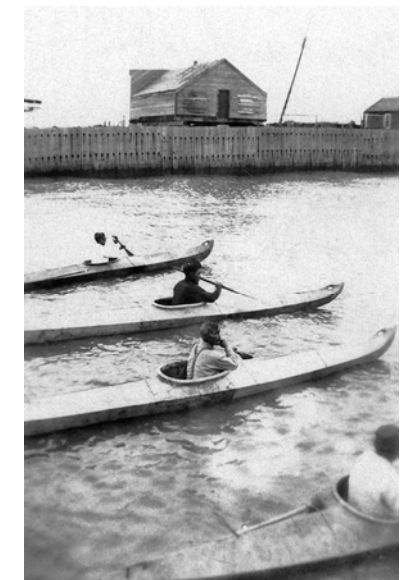
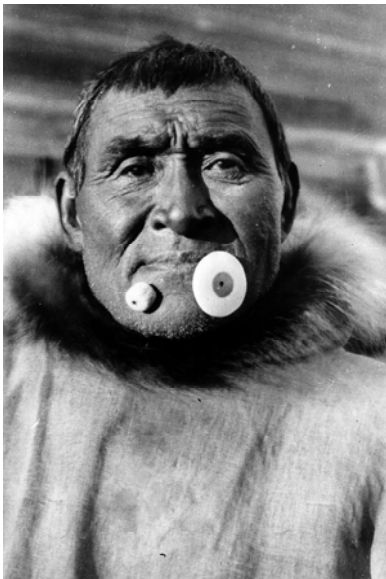
	men	women	children
clothing			
accessories			

describe

	house 1	house 2	house 3
housing			

transportation	
----------------	--

hunting implements and other tools	
---------------------------------------	--



Woman fishing for tomcod
Suzanne Bernardi photo album
Wales, Alaska
Lois Minium Collection
1901
89.5.18
Maxwell Museum of
Anthropology

Yupiat man standing in front of
door to part-subterranean home
Nunivak Island
Nash Harbor, Alaska
Dr. Julien G. Manser Collection
1932
69.71.108
Maxwell Museum of
Anthropology

Boy, Orville Ahkinga, Sr., holding
murre eggs he has gathered
from rock cliffs
Little Diomede, Alaska
Dr. Julien G. Manser Collection
1933
69.71.213
Maxwell Museum of
Anthropology

Teller, Alaska
Dr. Julien G. Manser Collection
1932
69.71.98
Maxwell Museum of
Anthropology

Florence Napaaq with sibling
St. Lawrence Island, Alaska
Dr. Julien G. Manser Collection
1932
69.71.184
Maxwell Museum of
Anthropology

Man wearing labrets
Point Hope, Alaska
Dr. Julien G. Manser Collection
1932
69.71.129
Maxwell Museum of
Anthropology

Start of kayak race
Nome, Alaska
Dr. Julien G. Manser Collection
July 4, 1932
69.71.256
Maxwell Museum of Anthropology

Man demonstrating bird spear with throwing
board Dr. Manser noted that he hit a piece of
paper (3"x5") two times out of three at a
distance of 25 feet
Kivalina, Alaska
Dr. Julien G. Manser Collection
1932
69.71.234 Maxwell Museum of Anthropology

Charles Brower Family
Barrow, Alaska
Dr. Julien G. Manser Collection
1932
69.71.120
Maxwell Museum of Anthropology

What Is It???

Introduction:

Material culture includes all the belongings used in daily life and the arts and crafts that a particular group of people produce. The resources for making these items are typically found in their immediate environment; therefore the types of things they produce are very specific to the region in which they live. In the Bering Sea region of Alaska, the people depend very heavily upon animals as resources not only for food but for materials for making items used in their day to day life. Skins, bone, ivory from walrus tusks, intestines and baleen from some whales are all animal parts that are modified and used in some way. Although, there are some plant materials such as driftwood, willow and grasses and rock such as slate that are also used as resources, the bulk of materials used to make most of the items used come from animals. By studying the material culture of a particular group of people, much can be learned about the lifestyles and environment of those people. The following household items, clothing, accessories and tools give a glimpse of daily life, past and present.

Objectives:

- Describe and record observations on artifacts
- Determine what an artifact is made of and how it was used
- Determine who used the artifact and where they lived

New Mexico State Standards:

Content Standard II – Geography

Students understand how physical, natural, and cultural processes influence where people live, the ways in which people live, and how societies interact with one another and their environments.

Vocabulary

Artifact-anything made and used by a human

Materials:

- ☐ baby's Caribou skin suit-object (1)
- ☐ Caribou skin mukluks-object (2)
- ☐ round fur and seal skin box with ivory elements-object (3)
- ☐ wooden goggles-object (4)
- ☐ wood and leather bolo-object (5)
- ☐ "gut skin" parka-object (6)
- ☐ girl's qaspeqs-object (7)
- ☐ boy's shirt-object (8)

- ☐ ivory and leather sewing kit-object (9)
- ☐ observation worksheets and pencils

Process:

1. Start with a discussion of material things we use in our daily life and how they can be used to determine specific things about the individual who made and uses them. Ask the students if they went into a child's bedroom when the child was not home, could they determine if the child were a boy or girl? Could they determine if the child shared their room with a sibling? Could they determine what kind of music the child liked or sports the child played? Could they tell if the child lived in a very cold climate or a very warm one? Most likely, they will say "yes" to all of the above questions. This is because the material things that we use in our daily lives tell the story of our lives, how we live and what type of environment we live in.
2. As anthropologists, the students are going to study some items from the collections of the Maxwell Museum that are made and used by Alaskan Natives of the Bering Sea region and determine what they are made of, what they are used for, and who would use these items by completing a chart on their observations.
3. Divide the class up into groups of about 3-4 students each. Pass out a worksheet and pencil to each student. Distribute the artifacts, one to each group and allow the groups ~3-4 minutes to study the artifacts and record their observations on their sheets. Rotate the artifacts through each group until every group studies every artifact.
4. When complete, collect all the artifacts and begin a discussion of each object. Have groups report out on their results for each object. You can keep a "master chart" on the board to summarize all the observations if desired. If the students miss anything from the following answer key, include that in the discussion.
5. Finally, conclude the discussion with ideas on what the lifestyle of the people who made and used these items was like. How much time and effort is needed to create these things? Also, to prepare for the next unit, ask the class based upon the items made and what they were made from, what kinds of animals live near the people?

Conclusion:

This activity is just like a puzzle. When you put all the pieces together

you get a picture. Each of the artifacts the students studied is a piece of the puzzle. By putting the pieces together, they create a picture of daily life for the people of the Bering Sea. Although a picture is worth a thousand words, it doesn't represent all the words of a people. Some ideas can be implied through studying material culture, but not all. In a later activity, the students will understand this better by looking at the ceremonial life and mythology of these people.

Extensions:

Compare these artifacts with those of Native Americans in the Southwest. For example, compare the fur container with a seed pot. Would Native Alaskans have any use for a seed pot? Would they be able to use clay?

What is It???

Name _____

Study each of the nine objects and record your observations in the following chart.

Object #	What is the object made of?	How is the object used?	Who uses the object?	What do you use that is similar to this object?
1				
2				
3				
4				
5				
6				
7				
8				
9				

What is It???

Name _____ KEY _____

Study each of the nine objects and record your observations in the following chart.

Object #	What is the object made of?	How is the object used?	Who uses the object?	What do you use that is similar to this object?
1	Caribou, ground squirrel, wolf or wolverine fur and cotton cloth	Worn over baby's under clothes	A baby	Snowsuit
2	Caribou fur, seal hide, cotton	Worn on the feet	A child or small adult	Snow boots
3	Seal (?) fur, seal skin, feather, shell and ivory	As a container to store something	Any person-child or adult	Small box or basket
4	Wood	It's propped on the nose and strung around the head to reduce glare from the snowy ground	Any person This one is for an adult	Sunglasses
5	Wood and leather	It's swung over the head like a propeller and released into a flock of birds while hunting	A hunter – most likely a male	Sling shot?
6	Cloth, thread and beads (authentic ones are made of seal gut skin and have bird beaks and feathers)	Worn over the clothes to protect from rain and wind	Every person. This one is child size.	Raincoat
7	Cotton cloth and rickrack	Worn as clothing	A young girl	A dress
8	Cotton cloth and rickrack	Worn as clothing	A young boy	A shirt
9	Leather, ivory and sinew (animal tendons)	The needle is used to sew clothing, leather thimble to protect the finger when sewing.	A woman or girl	Needle, thread and thimble

The Land of the Midnight Sun

Introduction:

The Bering Sea region of Alaska is very near to or above (i.e. north of) the Arctic Circle. Because of its unique position on the Earth's surface, seasonal light levels are quite different from the temperate or tropical zones of the Earth. The varying light levels result in some temperature extremes. Long, dark winters therefore lead to long cold winters. Summers are very short here. The variance in daylight hours is directly related to temperature and precipitation in this part of the world. This climate then, creates the biome found here called a tundra or treeless plain. A biome is a large geographical area of distinctive plant and animal groups, which are adapted to that particular environment. In this lesson, students will study the seasons as they occur in the arctic, see their effect on climate and how the climate determines the environment or biome. In the next lesson, students will take a closer look at the plants and animals, including humans of this type of environment.

Objectives:

- Explain how light levels vary during different seasons in the Bering Sea region
- Show relationships between seasons, light, temperature and precipitation and determine the climate of an area
- Describe how climate determines the environment of an area

New Mexico State Standards:

Content Standard III – Earth and Space Science

Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

Vocabulary:

Climate – the long term seasonal weather of a particular area

Precipitation – rainfall or snowfall

Biome – a particular vegetation (or life) zone that sustains wildlife specially adapted for the area

Materials:

- ☐ Globe with foil taped over Alaska
- ☐ Flashlight or table lamp without a shade
- ☐ Darkened room

Process:

1. Explain to the students that Alaska is sometimes referred to as “the Land of the Midnight Sun.” This is because the earth is tilted toward the sun during the summer months. Therefore, since Alaska is so near the North Pole, the sun circumvents (circles around at the horizon) the region, never really rising or setting in late June, early July.
2. You will demonstrate this phenomenon by setting up a small portion of our solar system using the flashlight or lamp as the sun and the globe as the earth. Before doing so, review the terms to describe the actions of the earth. The earth rotates on its axis which allows for each day. The earth revolves around the sun which allows for each year. The earth is also tilted on its axis which allows for the seasons. Demonstrate this. Ask for a student volunteer to hold the flashlight or set up the lamp on a desk or small table in the middle of the darkened room. Hold the globe up to the light and rotate it on its axis. Ask the students to use New Mexico as their reference point. (You may need to indicate where NM is on the globe with a finger or some other visible marker.) Ask them to call out when it is daytime in NM and nighttime in NM. Now, revolve around the “sun.” (If using a student held flashlight, the student must turn so that light is shining on the globe at all times.) Ask the students to indicate when a year has passed. Now, demonstrate how the seasons come about. You will repeat the demonstration for a year, but this time tilt the globe toward the sun for $\frac{1}{2}$ the revolution and tilt the globe away from the sun for the other $\frac{1}{2}$ the revolution. (A fun extension to this activity if space allows would be to mark the earth's orbit on the floor indicating each month of the year as well.) Ask the students to indicate when it is summer in NM and when it is winter in NM.
3. Next, repeat the seasons demonstration to show the seasons in Alaska. Hold the globe at an angle so that the arctic region is facing the light. Rotate the globe so that the light “rises” in the east and “sets” in the west, representing each day. Have the students observe how the light shines off the foil on the globe throwing a reflection around the room. They should also notice how there is never a break to this reflected light, the sunlight always shines on the foil. Discuss how this positioning of the earth facing the sun creates 24 hours of daylight in this part of the world-the Land of the Midnight Sun. Repeat the demonstration with the globe tilted away from the sun. How does the reflected light differ in this arrangement?

4. Next, put the foil over New Mexico. Repeat the experiment again and note whether the light shines off the foil at all times or intermittently. The students should observe that the light always hits the foil whether the globe is tilted toward or away from the light, but that there is still a daytime and nighttime pattern to the reflection and that light is reflected more during the summer (i.e. longer day) and less during the winter (i.e. shorter day.)
5. Finally, discuss how the varying light levels will affect temperature in each region and therefore overall climate. Make predictions on temperature during various seasons. How do these predictions compare with the charts below? How do climate variations affect the plants and animals that live in the region? This will be the topic of the next activity.

Conclusion:

Alaska is often referred to as the “Land of the Midnight Sun.” This is because the sun shines on the earth’s surface in the summer for up to 24 hours a day. Seasons are caused by the tilt of the earth on its axis. Because Alaska is so near the North Pole, it is tilted nearly directly towards the sun for the summer. The opposite happens in the winter and therefore Alaska has very long, dark, and cold winters. Such a cold climate results in a very cold and icy environment. Therefore, a specially adapted vegetation grows here and the animals that live here are adapted to a cold environment. The next lesson will look at the diversity of wildlife in this region.

Extensions:

Have half the students bring in a flashlight and the other half bring in a small ball from home. Working in pairs, have them play around with how the light reflects off the balls when holding them in the various arrangements demonstrated. They can also use a globe and pick a country to see how light levels are affected by the seasons there.

Kumak's House

Introduction:

Reading the story of Kumak's House will take the students to the "Land of the Midnight Sun." This story relates an old folktale about appreciating what you have. It also shows the unique connection the people of this region have with their environment and the animals that live there. The students will see how many of the things they have studied so far are made and used. They will also get a little glimpse of what transportation is like in this cold, snowy environment and what types of food the people eat. If time allows, read the author's note about the story as it includes more about the items used in everyday life and interesting facts about the environment.

Another story to read is "Mama, Do You Love Me?" This story features many different animals and objects used by the people of the arctic. After reading these stories, the students will have a much better picture of what the climate and environment is like in this area and how the humans and other animals survive here.

Objectives:

- Explain the diverse structures and functions of living things and the complex relationships between living things and their environments
- Identify the plants and animals that inhabit the Bering Sea region
- Determine the geographical distribution of the plants and animals in the area
- Complete a "web of life" game
- Explain how changes in the environment can have different effects on different organisms
- Describe how human activity impacts the environment

New Mexico State Standards:

Science

Content Standard 2 – Life Science

Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Language Arts

Content Standard 1 – Reading and Listening for Comprehension

Students will apply strategies and skills to comprehend information that is read, heard, and viewed

Content Standard 3 – Literature and Media: Students will use literature and media to develop an understanding of people, societies, and the self.

Materials:

- ☐ Storybook: *Kumak's House*
- ☐ Storybook: *Mama, Do You Love Me?*
- ☐ Habitat poster and animal pictures
- ☐ Ball of string or yarn
- ☐ Plant and animal cards
- ☐ Circle time space

Process:

1. Now that the students have a rather good idea of what the environment and climate are like in the Bering Sea region, they will now discover what types of plants and animals live in the area. You can start this activity by asking for their guesses. Hopefully, after completing the activity on what the artifacts are made from, they will be able to guess animals like caribou, seal, maybe walrus, puffin and polar bear. If they guess penguin, make sure they understand that regardless of the soft drink commercials they have seen, penguins do not live in the Northern Hemisphere!
2. Read the stories *Kumak's House* and *Mama, Do You Love Me?* to the class. Make a list of habitats, plants and animals mentioned in the stories on the blackboard.
3. Then, as a class, complete the habitat match poster. Aana Lulu says where the animals Kumak must find are located, so students should be able to match the animal with its habitat. In the *Mama, Do You Love Me* story, students will have to deduce where the animals live. Discuss the interdependence of the animals with each other and the plants found in this region. What type of food webs may exist?
4. Next, distribute the plant and animal cards to the students to create a food web. Play the web of life game to determine connections among living things in this area. See attached instructions.
5. Eliminate parts of the food web due to environmental destruction or change from oil spills, global warming, over fishing and forest fires. What happens to the remaining organisms in the web? How may this impact the human population?
6. Discuss the delicate balance of ecology. Ecosystems are complex and each individual component plays a vital role to the health of the whole. By eliminating just one element, the whole web can feel the effect. Some organisms are keystone species. Like a keystone in an arch, eliminating this species can make the whole structure fall down.

Conclusion:

A region's climate determines the wildlife found there. Each plant and animal is specially adapted to live in this environment and together create a web of life unique to that area. This interdependence can be disrupted due to some sort of environmental change. The humans that live in this area are just as sensitive to changes in the environment as the plants and animals that live there. The people of the Bering Sea do not take this for granted and therefore respect and honor the wildlife needed for their everyday life.

Now that you know what Alaska is like, you can pack for your trip because Kumak and his family have invited you to visit, study the people where they actually live and join them in a gathering celebration to honor the animals!

Extensions:

Discuss any physical or behavioral adaptations the animals and people have that allow them to live in such a cold harsh environment.

Art activity: Draw pictures of the food web.

Web of Life Game

Objective: to show students the complex interrelationships among species in a particular area and how they are all dependent upon each other.

Materials:

- ☐ Ball of string or yarn
- ☐ Picture cards
- ☐ Large activity space

Process:

1. Gather your students in a circle and randomly distribute the picture cards.
2. Explain to the students that they will be the plant or animal pictured on the card. When it is their turn, they will read the card, decide on a diet item or predator that that animal or plant has, and pass a ball of string or yarn to that food item or predator.
3. Pick a student to start. Give the ball of string or yarn to that student and have him or her read the card. The student will then choose a food item or predator to pass the ball of yarn to while holding the end of the string or yarn. The student will ask the group who has that particular card and pass the ball of string or yarn to that student.
4. The next student will do the same, holding on to the string while passing the ball along to one of the items read from the card. Continue in this fashion until all students have a part of the string or yarn. Some students may hold the yarn more than one time.
5. When every student is a part of this food web read the following scenarios one at a time. When a species is impacted or eliminated from the web, that student will gently wiggle her or his portion of the string or yarn. When the other students feel the wiggle, they will then wiggle their portion of the web. Eventually, every student will wiggle their portion. Discuss the implications of this. (Every species in the web is impacted by changes among all other species.)
6. When each scenario is completed, collect all the cards, and ball up the string or yarn.

Scenario 1: Oil Spills

An oil tanker full of petroleum from Prudhoe Bay hit some bad weather on the way to the Bering Strait and spilled millions of gallons of oil. This spill threatens the wildlife from Point Hope to Wales, AK. Shorebirds, seals, whales, fish and all other plants and animals along the coast are at great risk of losing their lives.

Scenario 2: Over Fishing

A commercial fishing industry is rapidly depleting Pacific herring from the waters of the Bering Sea. They are an important food source for adult fish, seabirds, seals and other important mammals. They are also an important subsistence resource for coastal Native people.

Scenario 3: Global Warming

Global warming and climate change have dramatically reduced the polar ice cap and ice floes in the Arctic Ocean. Polar Bears are threatened by this environmental change and are being lost in great numbers. As a result, their main food source, the Bearded Seal is increasing in great numbers and depleting the water of important food sources such as fish and shellfish.

Scenario 4: Forest Fire

Rising temperatures due to global warming has created a drier environment in Alaska's interior. A catastrophic fire in the forests of the Kuskokwim Mountains occurred and caused a large volume of soil to run off into the Yukon River. Debris from the fire and soil and silt from the land has made its way down to the mouth of the river where the Beluga Whale lives. The change to the environment in this area greatly affects and threatens all wildlife living in the area.

Conclusion:

The people of the Bering Sea region are highly dependent upon the plants and animals that also live in the area. Any changes in the environment that impact the plants and animals have an impact on all the other species in the complex web of life including humans. Survival for all in this harsh landscape requires adaptation and a delicate balance of resource use and environmental stewardship.

1969

Keystone Species Hypothesis

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*From chilly Alaska to sunny Baja California, on the exposed rocky shores between low and high tide, lives a group of marine organisms in delicate balance with one another. But one organism, the starfish *Pisaster ochracus*, is the pillar of the community on which the stability of the entire system depends.*

If that single predator is removed, dramatic changes result in the varieties and population densities of all the other species in the community. Interestingly, no comparable changes appear when other "consumers" are removed from the biological fabric. That starfish is the "keystone" species governing biological diversity in the entire intertidal zone.¹

The keystone species concept has been a mainstay of the ecological and conservation biology literature since its introduction by UW zoology professor Robert T. Paine in 1969. His seminal paper extended the conclusions of a field experiment published three years earlier. The research resulting in the keystone species concept was done on Makah Tribal lands on the outer coast of Washington State, with the Makahs' permission. It involved the sustained removal of a single predator species over a three-year interval and documentation of the resultant changes.

Keystone species are usually noticed when they are removed or they disappear from an ecosystem, resulting in dramatic changes to the rest of the community. The phenomenon has been observed in a wide range of ecosystems and for a wide range of organisms.

Put another way, a keystone species is one whose impacts on its community or ecosystem are large and greater than would be expected from its relative abundance or total biomass, explains Paine. Species that are known to play this role, besides the starfish mentioned above, include the sea otter, the freshwater bass, and the predatory whelk *Concholepas* (a kind of elongated sea snail). By contrast, trees, giant kelp, prairie grasses, and reef-building corals all have impacts that are large but not disproportionate to their total biomass, and therefore they are not keystone species.

A good illustration of Paine's keystone species concept is provided by the sea otter, which formerly occupied a range extending from the northern Japanese archipelago, through the Aleutian Islands, down the coast of North America as far south as Baja California. The return of the sea otter to southern California, for example, is restoring kelp beds and associated marine life there. That's because one of the

favorite delicacies of the otter is the large sea urchin, which in turn feeds on kelp. As the sea otter returns to its native territories, scientists expect the population of invertebrates, like urchins and abalone, for example, to decrease as marine plant biomass increases. In fact, a decrease in sport and commercial abalone fisheries was reported following an influx of sea otters into areas of California, causing a controversy there.²

Paine's work has been cited by hundreds of researchers over the years, and it has been proposed as a foundation for management efforts to protect the biological diversity of the world's ecosystems.

"Its importance," says Paine, "is that it convinced managers and conservationists alike that the ecological impact of single species matters. That is, in order to manage, understand, and restore ecological assemblages, the roles of individual species have to be understood and considered."

The concept has provided a powerful model for understanding the forces that organize ecological communities, and it has influenced the thinking of managers and policy makers as they set priorities in their efforts to conserve species and habitats. Over the years, controversy in scientific circles has grown up around the term keystone species as a result of "overly expansive usage."² Through a United Nations Environmental Programme workshop held in 1994, prominent researchers in the field reached a new consensus about a definition of the term and new guidelines for its expanding applications in the future.³

-
1. "The Keystone-Species Concept in Ecology and Conservation," L. Scott Mills, Michael E. Soule, and Daniel F. Doak, *BioScience*, **43** (4), 219 (1993).
 2. "Sea Otters: Their Role in Structuring Nearshore Communities," *Science*, **185**, 1058 (1974).
 3. "The Keystone Cops Meet in Hilo," Mary E. Power and L. Scott Mills, *TREE*, **10** (5), 182 (1995).

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Pathbreakers - Published November 1996

Storytelling with Story knives

Introduction:

Story knives are dull knives made of wood, bone or ivory used to draw pictures and symbols in snow or mud to illustrate a storyteller's tale. Traditionally, a grandmother would relate a story to her granddaughter about domestic activities (sewing, cooking or weaving) or the importance of proper behavior (respect for elders, quiet and avoidance of dangerous areas). This training emphasized obedience, the interdependence of people and the responsibility of a person for his actions. An oral tradition such as this was highly important because there was no written language to preserve these stories. Today, with other languages being spoken, attendance at schools and outside influences such as television and other media, this storytelling practice for educating children is a dying art form.

Students will experience this tradition by creating symbols and pictures to relate a story or legend to their classmates. Singing was another important form of expression for arctic people. Therefore, students will relate their stories in the form of songs or chants. A popular theme for these stories or songs is the activities of animal spirits or the creation of animals. Students can build upon their knowledge of animals studied in the previous lesson and create legends about animals or just create stories on any topic.

Objectives:

- Create symbols to represent different things or ideas
- Use symbols to illustrate a story
- Relate a story through song
- Demonstrate how the people of the Bering Sea region are closely connected to the animals that live there

New Mexico State Standards:

Language Arts

Content Standard 1 – Reading and Listening for Comprehension

Students will apply strategies and skills to comprehend information that is read, heard, and viewed.

Content Standard 2 – Writing and Speaking for Expression

Students will communicate effectively through speaking and writing.

Content Standard 3 – Literature and Media

Students will use literature and media to develop an understanding of people, societies, and the self

Materials:

- ☐ Raven story attachment
- ☐ Writing paper and pencils
- ☐ Drum and drumstick (optional)

Process:

1. Tell the students that Kumak and his family have invited all of you as a team of anthropologists to visit them and attend a gathering at a neighboring village. The people of the other village speak a different language. They will need to tell a story to describe the people of the village they are visiting to the people from the other village. Each student will describe a different part of their village and life style. Explain that they will need to communicate with symbols because they may not be able to communicate with spoken words. They cannot write to the other village because their language is not a written language. Be creative! Tell a story about the village's history. Or create a myth!
2. Start by discussing ways in which people communicate. Many answers may include means of communicating, such as by phone, radio, television, newspapers and the like. These are all very good examples for the following activity. Phone and radio communication involve speaking and listening. Television and print communication involve images as well. The people who live in the Bering Sea region of Alaska today, use all of these means of communicating. But historically, when the people spoke their traditional languages and did not have any print or electronic media, they communicated using their spoken language. They did not have a written language so stories they told and lessons to be learned had to be heard or symbolized. They did (and still do to a limited extent) communicate using images. Summarize the attached information about story knives for the class. Explain that they are going to experience this tradition by creating symbols to use while telling a story or legend.
3. Start by making a list of some of the things, occurrences, and ideas they have learned about the environment and lifestyle of these people. Use some of the enclosed pictures and objects to help make your list. Also, use your list of all the animals mentioned in *Kumak's House* or *Mama, Do You Love Me?* You can also read the Raven Myth Creation story to make a list of animals and activities. Write these on the blackboard in columns with space to draw a symbol in between.
4. Next, call upon each student to come up to the board and draw a symbol to represent each word on the board. Keep the symbols simple and not so abstract so that the students can easily draw

- them while telling their story. You can have your students copy these things down or leave the words and symbols on the board for the next part of the activity. You will need room on the blackboard for each student to relate their story knife tales.
5. Now assign the students the task of making a short story or legend. Make sure they use as many of the symbols from the board as they can. They can write out their story, if time allows, but eventually they will have to tell their story from memory and illustrate it with the symbols on the board. You can choose whether they write a story about everyday life or a legend about the spirit world. Be creative!
 6. When complete, call up each student to tell their story while drawing out the story in symbols using their story knife (chalk) into the mud (blackboard). Have them put it to a rhythm making it a traditional song. Someone can keep the rhythm for their song by using the drum provided, if desired.

Conclusion:

Storytelling is an important means of communicating and remembering all the traditions and history of a people. Children will learn about important tasks in life through storytelling as well. By communicating a story using symbols, people of other language groups can understand the meaning of the story.

Extensions:

1. Do the activity using moist clay from a craft store and craft sticks fashioned into story knives. Work in groups of 4-5 students each, relaying their stories to others in their group.
2. Compare symbolic communication among Alaskan natives with symbolic communication in the Southwest. Use images of Newspaper Rock in Utah for your discussion. Why is it called "Newspaper" Rock?

The Raven Myth

It was in the time when there were no people on the earth. For four days the first man lay coiled up in a pea-pod. On the fifth day he stretched out his feet and burst the pod, falling to the ground, where he stood up, a full-grown man. He looked about him, and then moved his hands and arms, his neck and legs, and examined himself curiously.

After a while he had an unpleasant feeling in his stomach, and he stooped down to take some water into his mouth from a small pool. The water ran down into his stomach and he felt better. When he looked up again he saw approaching, with a waving motion, a dark object which came on until just in front of him, when it stopped, and, standing on the ground, looked at him. This was a raven, and, as soon as it stopped, it raised one of its wings, pushed up its beak, like a mask, to the top of its head, and stared at the man, and after it was raised he stared more than ever, moving about from side to side to obtain a better view. At last he said: "What are you? From where did you come? I have never seen anything like you." Then Raven looked at Man, and was still more surprised to find this strange new being was so much like himself in shape.

Then Raven told Man to walk away a few steps, and in astonishment exclaimed again: "From where did you come? I have never seen anything like you before." To this Man replied: "I came from the pea-pod." And he pointed to the plant from which he came. "Ah!" exclaimed Raven, "I made that vine, but did not know that anything like you would ever come from it. Now wait for me here." Then he drew down the mask over his face, changing again into a bird, and flew far up into the sky where he disappeared.

Man waited where he had been left until the fourth day, when Raven returned, bringing four berries in his claws. Pushing up his mask, Raven became a man again and held out two salmonberries and two heathberries, saying, "Here is what I have made for you to eat. I also wish them to be plentiful over the earth. Now eat them." Man took the berries and placed them in his mouth one after the other and they satisfied his hunger, which had made him feel uncomfortable.

Raven then led Man to a small creek nearby and left him while he went to the water's edge and molded a couple of pieces of clay into the form of a pair of mountain sheep, which he held in his hand, and when they became dry he called Man to show him what he had done. Man thought they were very pretty, and Raven told him to close his eyes. As soon as Man's eyes were closed Raven drew down his mask and waved his wings four times over the images, when they became endowed with life and bounded away as full-grown mountain sheep.

Then Raven made two animals of clay which he endowed with life as before, but as they were dry only in spots when they were given life, they remained brown and white, and so originated the tame reindeer with mottled coat. In the same way a pair of caribou were made and permitted to get dry and white only on their bellies, then they were given life; in consequence, to this day the belly of the caribou is the only white part about it. Raven told Man that these animals would be very common, and people would kill many of them.

"You will be very lonely by yourself," said Raven "I will make you a companion." He then went to a spot some distance from where he had made the animals, and looking now and then at Man, made an image very much like him. Then he fastened a lot of fine water grass on the back of the head for hair, and after the image had dried in his hands, he waived his wings over it as before and a beautiful young woman arose and stood beside Man. "There," cried Raven "is a companion for you," and he led them back to a small hill nearby.

In those days there were no mountains far or near, and the sun never ceased shining brightly; no rain ever fell and no winds blew. When they came to the hill Raven showed the pair how to make a bed in the dry moss, and they slept there very warmly; Raven drew down his mask and slept nearby in the form of a bird. Waking before the others, Raven went back to the creek and made a pair each of sticklebacks, graylings, and blackfish. When these were swimming about in the water, he called Man to see them. When the latter looked at them and saw the sticklebacks swim up the stream with a wriggling motion he was so surprised that he raised his hand suddenly and the fish darted away. Raven then showed him the graylings and told him that they would be found in clear mountain streams, while the sticklebacks would live along the seacoast and that both would be good for food.

In this way Raven continued for several days making birds, fishes, and animals, showing them to Man, and explaining their uses. After this he flew away to the sky and was gone four days, after which he returned, bringing back a salmon for the use of Man.

Looking about Raven saw that the ponds and lakes were silent and lonely, so he created many water insects upon their surfaces, and from the same clay he made the beaver and the muskrat to frequent their borders. Man was shown the muskrat and told to take its skin for clothing. He was also told that the beavers would live along the streams and build strong houses and that he must follow their example, and likewise that the beavers would be very cunning and only good hunters would be able to take them.

At this time the woman gave birth to a child, and Raven directed Man how to feed and care for it, telling him that it would grow into a man like himself. As soon as the child was born, Raven and Man took it to a creek, rubbed it over with clay, and then returned with it to his stopping place on the small hill. The next morning the child was running about pulling up grass and other plants which Raven had caused to grow nearby; on the third day the child became a full-grown man.

After this Raven thought that if he did not create something to make men afraid they would destroy everything he had made to inhabit the earth. Then he went to a creek nearby, where he formed a bear and gave it life, jumping to one side quickly as the bear stood up and looked fiercely about. Man was then called and told that the bear would be very fierce and would tear him to pieces if he disturbed it.

Then he made different kinds of seals, and their names and habits were explained to Man. Raven also taught Man to make rawhide lines from sealskin, and snares for deer, but cautioned him to wait until the deer were abundant before he snared any of them.

Then Raven found that three other men had fallen from the pea-pod that gave the first one. These men, like the first, were looking about them in wonder, and Raven led them away in an opposite direction from that in which he had taken the first man, afterward bringing them to firm land close to the sea. Here they stopped, and Raven remained with them a long time, teaching them how to live. He taught them how to make a fire-making device (a bow drill) from a piece of dry wood and a cord, taking the wood from the bushes and small trees he had caused to grow in hollows and sheltered places on the hillside. He made for each of the men a wife, and also made many plants and birds such as frequent the seacoast, but fewer kinds than he had made in the land where the first man lived. He taught the men to make bows and arrows, spears, nets, and all the implements of the chase and how to use them; also how to capture the seals which had now become plentiful in the sea.

After Raven had taught the men how to make kayaks, he showed them how to build houses of drift logs and bushes covered with earth.

Looking about Raven thought the earth seemed bare; so, while the others slept, he caused birch, spruce, and cottonwood trees to spring up in low places, and then awoke the people, who were much pleased at seeing the trees. After this they were taught how to make fire with the bow drill and to place the spark of tinder in a bunch of dry grass and wave it about until it blazed, then to place dry wood upon it. They were shown how to roast fish on a stick, to make fish traps of splints and willow bark, to dry salmon for winter use, and to make houses.

One day Man went out seal hunting along the seashore. He saw many seals, but in each case after he had crept carefully up they would tumble into the water before he could get to them until only one was left on the rocks; Man crept up to it more carefully than before, but it also escaped. Then he stood up and he seemed full of strange feeling, and the water began to run in drops from his eyes and down his face. He put up his hand and caught some of the drops to look at them and found that they were really water; then, without any wish on his part, loud cries began to break from him and the tears ran down his face as he went home. When his son saw him coming, he called to his wife and mother to see Man coming along making such a strange noise; when he reached them they were still more surprised to see water running down his face. After he told them the story of his disappointment they were all stricken with the same strange ailment and began to wail with him, and in this way people first learned how to cry.

Where the first man lived there had now grown a large village, for the people did everything as Raven directed them.

Abridged version of the Raven Creation Myth from William W. Nelson's translation.

Arctic Art

Introduction:

Art work in the Bering Sea region was (and still is) created for several reasons. Some artistic works had a purely aesthetic function. Other works a more utilitarian function. Some pieces were created as trade items while others were created as toys.

Children in most cultures learn about many of their future adult roles through play, often with small-scale toys that resemble tools with which they might work or activities in which they might engage. These pieces are often constructed with as much care and detail as the real items used. In this activity, students will make a toy sled (this miniature item was a popular trade item or used as a toy) along with some origami sled dogs. Students will study how the art objects compare with the real items as well as compare art forms from the Bering Sea region with art of Japan (origami).

Objectives:

- Examine art forms from the Bering Sea region
- Identify and compare 2D and 3D art forms
- Discuss the continuity of art among a particular culture
- Compare and contrast art works from two dissimilar world cultures
- Create a wooden sled sculpture
- Create origami sled dogs

New Mexico State Standards:

Art

Content Standard 1: Learn and develop the essential skills and technical demands unique to dance, music, theatre/drama, and visual arts.

Math

Strand: Number and Operations

Content Standard: Students will understand numerical concepts and mathematical operations

Strand: Geometry

Content Standard: Students will understand geometric concepts and applications

Strand: Measurement

Content Standard: Students will understand measurement systems and applications

Materials:

- ☐ Photos of sleds and toys
- ☐ Popsicle sticks prepared for each student. See separate instruction sheets.
- ☐ String cut to various lengths
- ☐ 3" x 3" square paper for origami dogs (can be scrap copy paper if desired)
- ☐ Wood glue
- ☐ Markers
- ☐ Cotton balls or cotton batting (if desired)

Process:

1. Tell the students that at many gatherings, people will bring art forms for sale or trade with others at the gathering. They will spend many days or weeks preparing items for the gathering. Since they have been invited by Kumak and his family to attend a celebration, the students will need to make an item for the art fair.
2. Start by having a conversation about art, how it can function for many purposes (aesthetics, for sale or trade or as toys) and often it depicts life situations or represents a people's culture. Ask the students what they would expect to see depicted in art of the people of the Bering Sea region. Encourage responses about all of the things they have learned about these people up to this point.
3. Discuss some different types of art forms, i.e. painting, sculpture (including pottery and basketry), textiles, etc. Include in your discussion art forms that are primarily 2 dimensional (painting, photography and maybe even some textiles) and 3 dimensional (sculpture and maybe even some textiles). Mention that the students will be making some 3 dimensional objects from 2 dimensional materials.
4. Next, study the following photo sheets and determine if these art works represent the culture of the people they have been studying up to this point. Divide the class up into 6 groups of about equal size. Distribute the 3 photo sheets to rotate them among 3 groups. Ask the students to discuss in their groups whether they think these art works represent the people who made them. Are different art forms represented? How would they classify each piece? What purpose was each piece made for? Is there any evidence that the art has changed or remained the same over time? Allow enough time for discussion.
5. When each group is finished, collect the photo sheets and report out as an entire class. Go picture by picture and ask each

- question and share all ideas.
6. Next, each student will make their own toy sled and origami sled dogs. Use the instructions that follow. Mention that the wooden sled is an art distinctive to the Bering Sea area, whereas origami is an art distinct to Japan. Compare and contrast these sculptural forms.

Conclusion:

Art is a means of expression practiced by every culture. Quite often the art depicts the every day life of the people. Many artistic forms can be used to represent an idea. Sometimes these forms change over time and sometimes they stay the same. Distinctions among styles of art occur between different cultural groups, but depictions of every day life in the environmental context in which they are made are often the same.

Extension:

Explore the art of origami and compare the influence of the natural world in this art form with those of the people of the Bering Sea region.

Some background on Origami

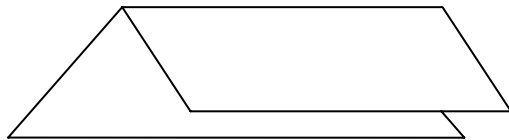
1. History of Origami

Origami is the Japanese art of paper folding. “Ori” is the Japanese word for folding and “kami” is the Japanese word for paper. Origami originated in China in the 1st or 2nd century then spread to Japan sometime in the 6th century. Initially it was done by the wealthy as paper was rare and expensive. As the techniques of paper making improved, paper became more common and Origami became more and more popular. For centuries, this was an oral tradition passed down from generation to generation. With the publication of the book *How to Fold 1000 Cranes* in 1797, written instructions for paper folding were available for the first time. The instructions were for folding a paper crane, a sacred bird and symbol of peace in Japan.

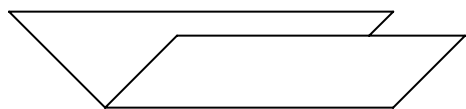
2. Types of folds

The two folds you will be using to make the dogs are the mountain and valley folds.

Mountain folds have the crease higher than the edges as shown below.



Valley folds have the crease lower than the edges as shown below.



Other folds include reverse folds, squash folds and pleats.

3. Teaching Origami to children

- Explain and point out the edges and tips.
- Go step by step and stop to make sure each child is where they need to be and that their folds are correct.
- Make sure they match the edges and tips well.
- Crease each fold sharply.
- Talk about shapes, proportions and measurements as you go, reinforcing those concepts.



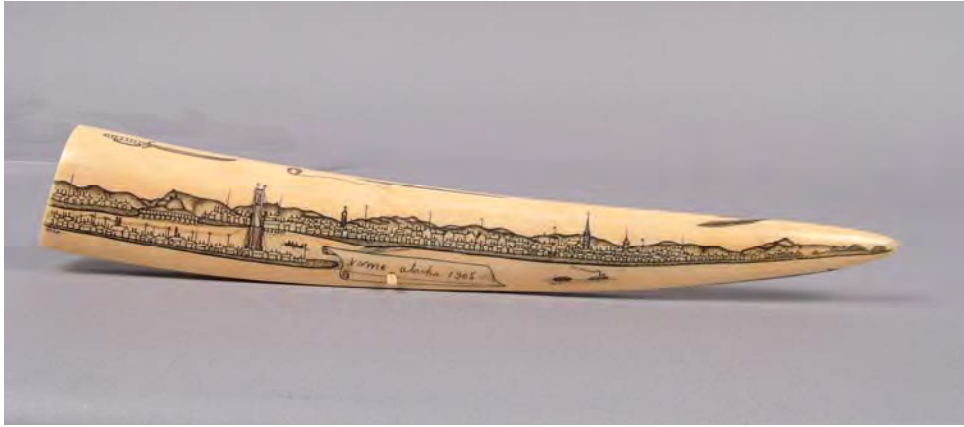
Arctic Art

Hunting sled pulled by dogs
Men hauling whale meat to another village
Suzanne Bernardi Photo Album
Lois Minium Collection
1901
89.5.41
Maxwell Museum of Anthropology

Model sled
Wood
Donation from Col. David Ross
66.2.13
Maxwell Museum of Anthropology

Note sled made to be pulled by reindeer
Suzanne Bernardi Photo Album
Lois Minium Collection
1901
89.5.51
Maxwell Museum of Anthropology

George Ahgupuk
Painting on seal skin
Donation from Mrs. Mildred Maria Austin
2006.54.2
Maxwell Museum of Anthropology



Art and Trade

Polar Bears

Ivory

Donation for Dr. Julien G. Manser

69.71.11 and 13

Maxwell Museum of Anthropology

Cribbage Board

Ivory

Donation of Mrs. Lois Minium

89.5.10

Maxwell Museum of Anthropology

Baleen Basket

Baleen, Ivory

Donation from Mrs. Betty Karlson Lane

Muriel Karlson Collection

69.71.45

Maxwell Museum of Anthropology

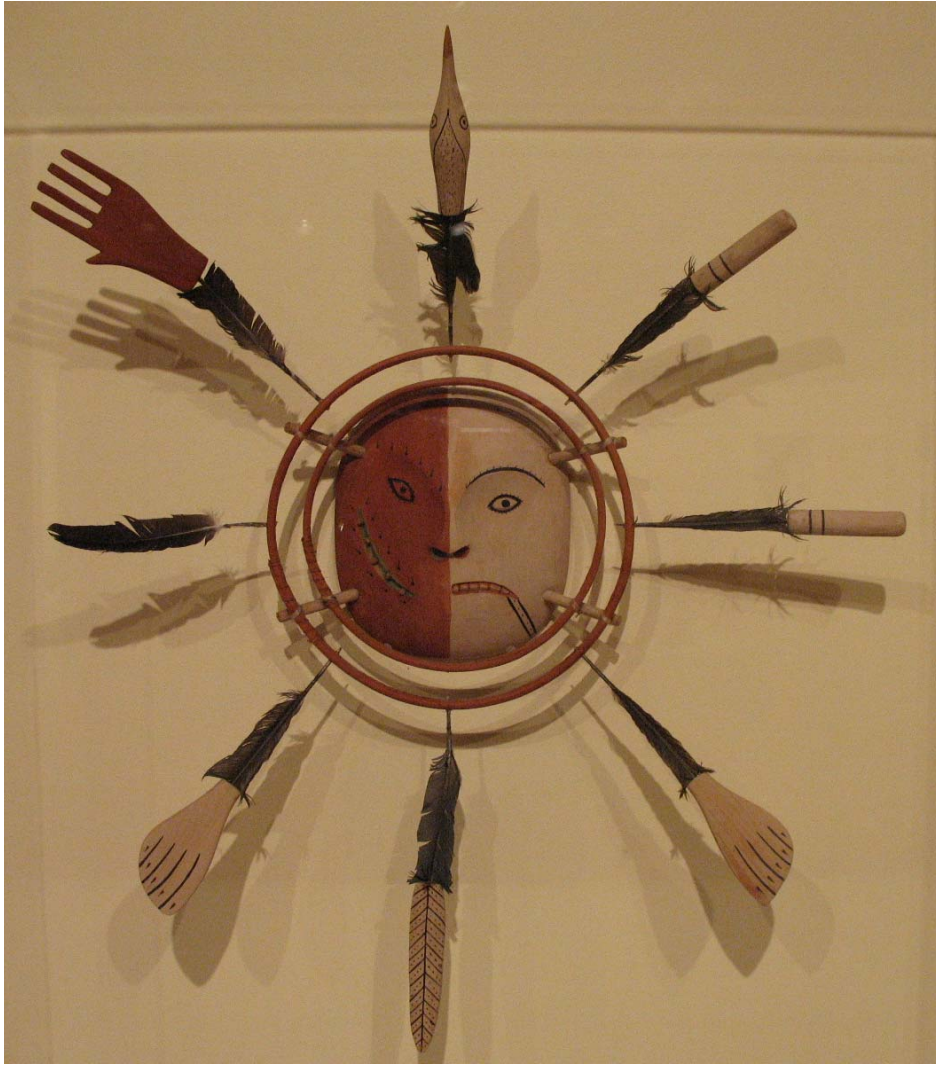
George Ahgupuk

Painting on seal skin

Donation from Mrs. Mildred Maria Austin

2006.54.1

Maxwell Museum of Anthropology



Arctic Art

Doll

Donation from Dr. John Martin Campbell

64.37.6

Maxwell Museum of Anthropology

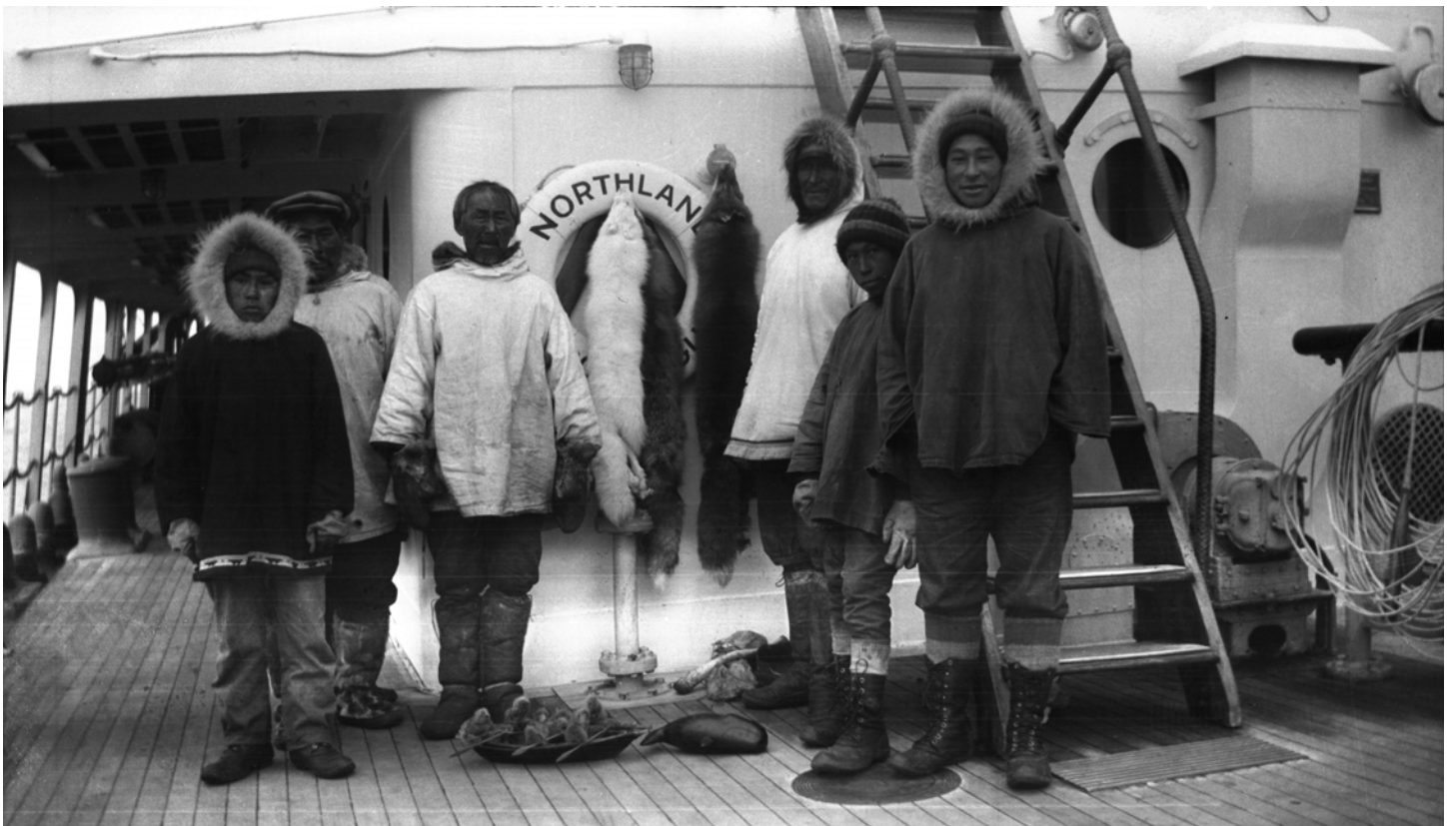
Ircenrraq Mask

Wood, feathers, string

Donation from Dr. Frank C. Hibben

2006.24.120

Maxwell Museum of Anthropology



Artisans and Traders

Thomas Asila using bow drill on ivory

King Island, Alaska

Dr. Julien G. Manser Collection

1932

69.71.285

Maxwell Museum of Anthropology

Group of men aboard the USCGC Northland
selling fox skins and trade goods, a wooden
whale and a miniature *umiak* full of dolls

Wainwright, Alaska

Dr. Julien G. Manser Collection

1932

69.71.226

Maxwell Museum of Anthropology

Popsicle Stick Sleds!

Instructions

Make your own Popsicle stick sled to take home! Gather the following materials and assemble your sled by following the instructions below.

Materials:

4 large (4.5") sticks

2 medium (cut into 3.5") sticks

14 small (cut into 1.5") sticks

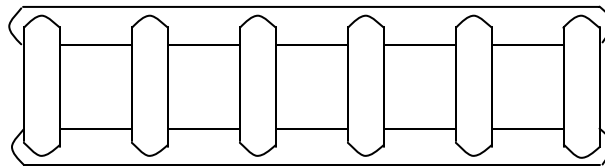
glue

string

origami dogs

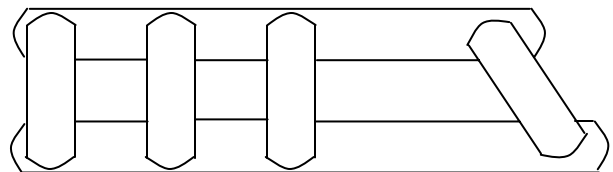
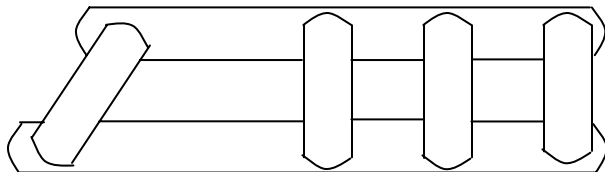
1. To make the base of the sled

- Glue 6 small Popsicle sticks to the 2 large sticks as shown below
- Set aside to dry



2. To make the sled runners and sides (make 2nd as shown below)

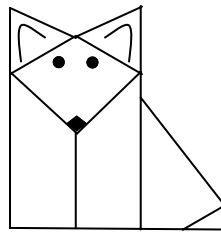
- Arrange 1 medium and 1 large stick as shown below
- Glue 1 small stick to the ends of both sticks arranged above at about a 45 degree angle
- Glue 3 small sticks from the middle to the opposite end
- Set aside to dry



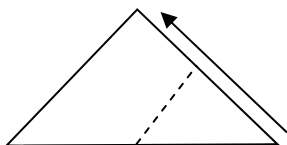
3. Assemble your sled!

- When dry, glue the base to each runner and side about 1/4 inch above the runners
- Attach the dogs with the string. Dog sleds with animals hitched in a line 2-by-2 are for traveling through a wooded area. In the northern lands with no trees, dogs are hitched in a fan configuration for pulling a sled.

Make Your Own Origami Dog!

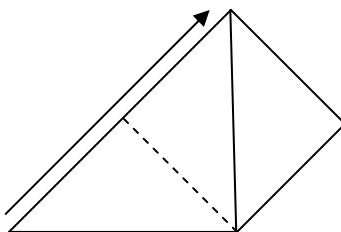


2.



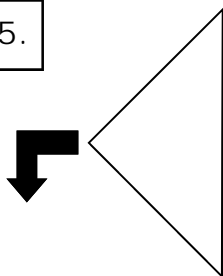
Valley fold the right tip up to the top tip and crease sharply. The result is a small triangle on the right and large triangle on the left.

3.



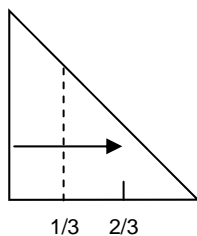
Repeat on left side. Valley fold left tip up to the top tip and crease sharply. The result should be a bisected diamond.

5.



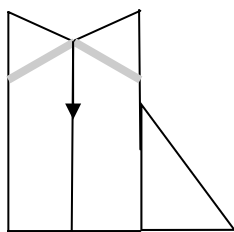
Rotate the triangle 45° so that you have a right triangle on the desk in front of you with the 90° corner to the lower left.

6.



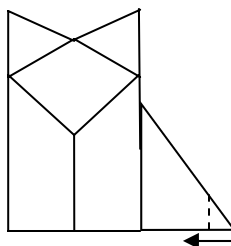
Mark the bottom edge of the triangle at the $1/3$ and $2/3$ mark. Valley fold the left edge at the $1/3$ mark to the $2/3$ mark.

8.



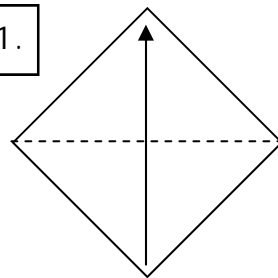
The dog's face in the center between the legs should now be sticking out in front of you. Fold the tip down to the line between the legs.

9.



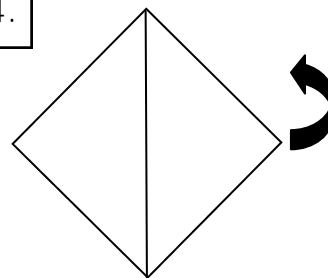
Fold the right tip to the left along the bottom edge. (This will help the dog stand up freely.)

1.



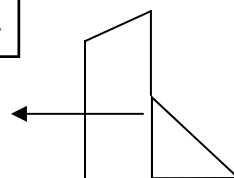
Place a 4" x 4" paper in front of you on the desk, print side up (if applicable) so that it looks like a diamond. Valley fold the bottom tip to the top tip and crease sharply.

4.



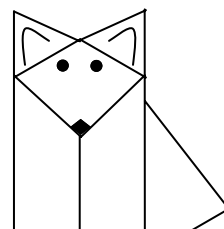
Mountain fold the right tip back to the left tip and crease sharply. The result should be a triangle.

7.



The edge just folded to the right consists of multiply folded layers. Fold just the top layer back to the left.

10.



Your dog is finished! Decorate as desired.

Alaska Olympics!

Introduction:

The people of Alaska including the Bering Sea region give a special twist to the Olympic Games. They don't compete in the usual games of track and field, gymnastics, swimming, skiing, sledding, and figure skating but games like the blanket toss, ear weight and high kicks. These games originally started to test the competitors' skills needed for a subsistence life style in a harsh environment. These tests of strength, balance and endurance were necessary qualities for survival and now are fun skills to hone for these Olympic Games. For more information on the history of the games and descriptions of events, see the following web page.

This activity will give students the opportunity to try some of the games the native people of Alaska do during their Olympic Games. Students will not only test their physical skills of strength, balance and endurance, they will also practice taking measurements, recording data and calculating averages.

Objectives:

- Work in a group to complete tasks
- Demonstrate some Alaska Olympic Games
- Measure and record event results
- Calculate averages

New Mexico State Standards:

Physical Education

Standard 6: Demonstrates understanding and respect for differences among people in physical activity settings.

Standard 7: Understands that physical activity provides opportunities for enjoyment, challenge, self-expression and social interaction.

Math

Strand: Measurement

Standard: Students will understand measurement systems and applications

Strand: Data Analysis and Probability

Standard: Students will understand how to formulate questions, analyze data, and determine probabilities

Materials:

- ☐ Kick ball with string
- ☐ Meter stick

- ☐ Point and cone (4 sets)
- ☐ 4 sticks
- ☐ Game station posters (5)
- ☐ Data sheets (1 for each group)
- ☐ Shady grassy area or exercise mats to crawl on
- ☐ Tree limb or ceiling rafter to hang kick ball

Preparation:

1. Set up each game station with the materials needed.

Process:

1. Explain to the students that as part of the gathering and celebration, the communities are going to compete in the Alaska Olympic Games. Summarize the history and tradition of these games with the students in an entire group. Use the following information web page and be sure to describe some of the games that are played in Alaska.
2. Next, explain the games your students will be partaking in. Use the posters to show the basic gist of the exercise. Demonstrate each exercise, if needed. Tell them that they will be working in groups of 4-5 students each. They will read the poster to determine what they will be doing. They need to work together to decide who will compete in what order, who will measure and who will record the results when needed. Show the data sheets and explain how to complete them.
3. Break the class up into smaller groups of about 4-5 students each. Give each group a game station poster and direct them to the station. Give them time to complete each game and rotate all groups through each game until complete.
4. When finished, reassemble the group and ask them of their experiences. Were the games easy or difficult? Who excelled in the kick ball? Who excelled in the point and cone? And etc. Discuss how different skills are needed for each game and that some competitors skilled in one area may not do as well in others. It's very difficult to determine a winner when looking at results of all games. Therefore, all enthusiastic participants are winners.
5. Back in the classroom, report out high scorers in each game. Then as a group, calculate averages for each game in which a definitive score was achieved.

Conclusion:

Gatherings and celebrations among the Alaskan people of the Bering Sea region are times in which they can renew family ties, share information, tell stories, sing and dance, trade their artworks, feast and compete in sports games. These gatherings really feature all aspects of the culture practiced by all groups. Many traditions are handed down from generation to generation and reinforced at these events, strengthening the ties that bind these unique people.

<

Brownielocks



& The 3 Bears

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Cartoon Fun

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By *Maile* TM

What's so interesting up there on our ceiling?

Nothing! I thought I had great ears for the Eskimo Ear Weight Contest so I put some weights on to get them in shape. But, now I've got this crink in my neck!



Cicchi

and

The History of the World Eskimo Indian Olympics

July 18-21, 2007

General History and Background

Although these are called "Winter Olympics" they are held in Mid-July or early August in Fairbanks, Alaska. The first Eskimo Olympics began in 1961, two years after Alaska became a state. How, why and who started it?

Alaskans have always had a tradition of occasionally getting together to play games. These games were meant to test certain qualities needed to survive in the harsh climate they lived in, where hunting food was necessary no matter how extreme the weather. So, people from small villages would get together, usually during Christmastime, to informally compete. They also did cultural events such as dancing, storytelling and feasting.

Over 40 years ago, a pilot for Wien Airlines kept seeing these traditional sports get-togethers while he traveled across the state. He was worried these games would disappear so he convinced his employer and the Fairbanks Chamber of Commerce to include these games as part of the city's annual Golden Days Celebration. Frank Whaley was the pilot. And, in 1961 the games became a part of the celebration. Nine years later, the Tundra Times, Alaska's only native newspaper took over the sponsorship of the event. When they did, they also changed the name to the World Eskimo-Indian Olympics to reflect the wide range of native people participating in the games. The late A. E. "Bud" Hagberg, also co-chaired the first several events with Frank Whaley. Other pilots, Bill English and late Tom Richards, Sr. served as the emcees.

A lot of the contests are the same as those in the [Arctic Winter Games](#), such as the Knuckle Hop, arm pull, Ear Pull, High Jump and Toe Kicks. These contests challenge the participants pain endurance, balance skills and agility, or are associated with skills needed for hunting and whaling, like the Blanket Toss. Other contests are to test a participant's brute strength that is needed to haul seals and other animals through holes in the ice.

From 1961 to 1969, only men competed in these games. Then in 1970's and 1980's. In 1998 women placed First, Second and Third in the Ear Weight, a contest in which competitors lift weights that are attached to their ears by loops of twine. (Ouch!!) They must lift the weights by standing up as straight as they can and then move forward over the

greatest distance possible. In addition to the athletic contests, they also have fish-cutting and seal-cutting contests, a Native Baby Contest (both mother and child appear in tribal costumes), an Eskimo dance contest and the very popular Miss WEIO Pageant.

Through these past 40+ years, the World Eskimo-Indian Olympics have increased in popularity and drawn larger crowds of spectators. They've also continued to increase in their record-breaking accomplishments. It is no longer sponsored by The Tundra Times. Instead, there is now a non-profit, independent organization dedicated to planning, organizing, promoting and running this event. These games may be strange to some of us. But, the organizers work hard to present these games as an important connection to the survival of a culture, rich in history, stories, and spirituality.

Some Contests, Symbols and Customs

The Blanket Toss

This is also called the **Nalakatuk**. Team members hold up a huge walrus-skin "trampoline" style blanket. The competitor is thrown as high as 30 feet in the air by sitting or standing in the middle of this leather trampoline. This practice goes back to whaling communities where it was a common practice used to celebrate a good hunt. It was also used as an exercise to improve a hunter's eyesight to spot game by elevating him to a point where he could see over greater distances.

Ear Weight

This contest involves wearing very heavy weights around your ear. In the old days, it was a 25 lb. bag of flour. Today, they use 1 lb. lead ingots, which keep being added (up to 16 ingots). These ingots are threaded through twine. The contestants loop the twine around one ear and then lift up, without using their cheek, pack the weight, and then strive for distance. _

High Kicks

This involves jumping off the floor and kicking a suspended target. There are a few different kind of these contests, depending on the number of feet used. In the **One-Foot High Kick**, the competitor uses both feet to propel himself (or herself) upward, then kick the target with one foot and land on the SAME foot without losing his or her balance. This goes way back to times when messengers used this action to let other villagers or hunters know that a whale had been caught or that other game was approaching.

The **Two-Foot High Kick** is much like the One-Foot, except that the competitor must kick the target with both feet and then land on both feet. The **Alaskan High Kick** is even more complicated, requiring the competitor to hold one foot with the opposite hand and then using the

other hand for elevation and balance, to attempt to kick the target with the foot that is free. The contestant must also land in the same position without losing his or her balance, with the object being to get as much height as possible.

Knuckle Hop

This is also called the Seal Hop because it looks much the same as the movement of a seal. This contest is a real challenge to strength and endurance. The competitor gets into the position normally used for a pushup, but with all his (or her) weight resting on the knuckles (rather than hands) and toes and the elbows partially bent. Then keeping the back straight, and elbows still partially bent, he (or she) attempts to "hop" forward. The goal is to cover as great a distance as possible, but of course not much distance is usually achieved. Originally, this was a game designed to be played in a hut or other confined space during the winter, or on the ground outside in the summer.

Eskimo Ice Cream

This isn't the familiar American ice cream treat known as "Eskimo Pies" we see in our grocery stores. Eskimo ice cream is popular and is called **Akutaq**. It is made from whipped berries, such as salmonberries or cloudberry, that are mixed with snow and either seal or caribou oil.

Muktuk-Eating Contest

In other words, this is a blubber eating contest. Muktuk is the skin of a whale and the thin layer of blubber beneath it. It usually comes from beluga whales. And much like a pie-eating contest, the Muktuk-Eating Contest requires competitors to eat as much of this Eskimo delicacy as quickly as possible.

Miss WEIO Pageant

In 1961, the very first "**Miss World Eskimo Olympics Queen**" contest was featured. Later, it was changed to "**Miss World Eskimo-Indian Olympics.**" It is modeled much like the Miss America Pageant with the competition emphasizing not only physical attraction, but poise, talent, and other accomplishments. They also give an award for Miss Congeniality, Most Traditional, Most Photogenic and Most Talented.

Race of the Torch

This is a 5-kilometer road race that takes place as the start of the World Eskimo-Indian Olympics. The male and female winners of the race are given the privilege of carrying the torches used to ignite the World Eskimo-Indian Olympics official torch, which is modeled after the Olympic Flame used in the Olympic Games.

I haven't listed all the games. For a complete listing and explanation of all the games that go on, [Click Here!](#)

Logo

The World Eskimo-Indian Olympics logo is six interconnected rings (just like the Olympic Games uses) that symbolizes Alaska's six major tribes: Eskimo, Athabascan, Haida, Tlingit, Tsimshian and Aleut. The Olympic Rings symbolize the 5 continents (Africa, America, Asia, Australia and Europe).

Awards

Each year the following awards are presented as a tribute to the contributions to the WEIO.

1. **A. E. "Bud" Hagberg Memorial Sportsmanship Athletic Award** - chosen by the athletes among themselves - this award is presented to the outstanding sportsperson exemplifying the spirit of good sportsmanship.
2. **The Howard Rock Memorial Outstanding Athlete Award** is another award to the best athlete chosen amongst the athletes themselves.
3. **Frank Whaley Award Presentation** for Outstanding Contributions is presented to the one individual or corporation who has demonstrated exemplary contributions of time, money and effort on an annual basis.

Return to our [July](#) or [August](#) Monthly Holidays Page.

Source of Information:
"Holidays, Symbols & Customs 3rd Edition"
By Sue Ellen Thompson
Omnigraphics, Inc. © 2003

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[illegible]

Lesson Title:	Whale Hunt
Essential Question:	How does environment shape culture of everyday living, both past and present?
Guiding Question(s):	What role does whaling play in the survival of the Inupiat people?
Created by:	UNM Summer Technology Academy 2004
Intended Grade Level:	4-5
Subject Area(s) or Topic(s):	Social Studies

Lesson Description

Students will research the whale hunt tradition and its importance in the lives of the Inupiat people in the Cape Prince of Wales. The research findings will be summarized in a timeline poster format in the classroom museum.

Curriculum Objectives

- Students will investigate online the traditional whale hunt of the Inupiat.
- Students will explain the importance of the whale hunt in the Inupiat culture for subsistence living.
- Students will order the major events of the whale hunt (preparation of the gear and boat; the hunt itself; distribution of the whale shares; and the various celebrations held throughout the year).
- Students will create a mural of whaling hunt information to put in the class timeline.

New Mexico State Standards: Social Studies

Content Standard II - Geography

Students understand how physical, natural, and cultural processes influence where people live, the ways in which people live, and how societies interact with one another and their environments.

Language Arts

Content Standard II – Speaking and Writing for Expression

Students will communicate effectively through speaking and writing.

Content Standard III - Literature and Media

Students will use literature and media to develop and understanding of people, societies, and the self.

ISTE – NETS Technology Standards:

Standard 3 Technology productivity tools

Standard 5 Technology research tools

Resources and Materials

Whaling: A Way of Life

<http://www.alaskool.org/projects/traditionalife/whalingawol/englishtoc.htm>

Basic Whaling Information

http://www.uark.edu/misc/jcdixon/Historic_Whaling/Trad_Whaling/trad_whaling.htm

<http://www.highnorth.no/library/hunts/other/al-es-wh.htm>

Inupiat

<http://www.mnsu.edu/emuseum/cultural/northamerica/inupiat.html>

<http://www.alaskanative.net/36.asp>

<http://arcticcircle.uconn.edu/HistoryCulture/Inupiat/>

Umiak making

<http://www.skinboats.com/umiak.html>

Books

Gift of the Whale The Inupiat Bowhead Hunt, A Sacred Tradition by Bill Hess (online reviews of the book give information as well). Can be purchased on Amazon.com.

Other Materials

Large Paper for mural.

Pens/Markers/Colored Pencils/Paint

Prerequisite Skills

Students will need to know about the Inupiat people and how they live.

Students will need to have basic Internet navigational skills.

Process

Anticipatory Set:

After viewing the scrapbook "Tale of a Whale," the teacher leads a discussion about the significance of whaling in the lives of the Inupiat. The teacher also conducts a read aloud with the book Gift of the Whale The Inupiat Bowhead Hunt, A sacred Tradition by Bill Hess in order to familiarize the students with a timeline of the whale hunt. They will also begin to understand how the whole social structure was dependent on the capture of a bowhead whale and the activities associated with the hunt.

Students are separated into 5 groups. Each group will chose a portion of the whale hunt to research:

Group 1) Preparation of the hunting gear and boat (umiak)

Group 2) Hunting and capturing a whale

Group 3) Responsibilities of the whaling captain, his wife and crew members

Group 4) Distribution of the whale shares

Group 5) Celebrations/festivals associated with the whale hunt throughout the year.

Group 1

Students go to the "[Whaling: a Way of Life](#)" website to research and read stories about a whale hunt.

<http://www.alaskool.org/projects/traditionallife/whalingawol/englishtoc.htm>

Students compile information on the basics of preparing the hunting gear and boat.

<http://www.skinboats.com/umiak.html>

<http://cronus.rockisland.com/~kyak/umicon.html>

Preparation information can include: steps of boat preparation and floats; paddles & oars, knives, spades, lances, hooks, bailers, harpoons, shoulder gun, and food.

Group 2

Students go to the "[Whaling: a Way of Life](#)" website to research and read stories about a whale hunt.

Students compile information about what happens during the actual whale hunt.

Students describe the day of the hunt. This can include: the wife's preparation in the morning and checking the equipment, establishing the whale camp, and chasing and capturing the whale.

Group 3

Students go to the "[Whaling: a Way of Life](#)" website to research and read stories about a whale hunt.

Students compile information about the importance of the captain and his wife, and the crewmembers.

Group 4

Students go to the "[Whaling: a Way of Life](#)" website to research and read stories about a whale hunt.

Students compile information about how the whale shares are distributed.

Information can include: The alerting of the village, the very specific pieces of meat and who they go to, extra shares, new captain's pieces, freeing the spirit of the whale, and storing the meat.

Group 5

Students go to the "[Whaling: a Way of Life](#)" website to research and read stories about a whale hunt.

Students compile information on the various celebrations held throughout the year for the whale hunt.

Students should explain the following celebrations: Two *afirruk* feasts (fall & spring), messenger festival, *qakummisaaliq* (when a whale is captured) and one spring whaling festival *nalukatak* at the end of the season. The Inupiat people hold a deep respect for the whale and believe that its spirit can think and feel and talk. If they are respectful to the whale, its spirit will go back under the sea to report on the human behavior. Respectful behavior will result in a good whale hunt the following year. Additional information on feasts/festivals can be found at:

- Inupiat: (<http://www.mnsu.edu/emuseum/cultural/northamerica/inupiat.html>)
- Inupiat of Arctic Alaska: <http://arcticcircle.uconn.edu/HistoryCulture/Inupiat/>
- Eskimos: http://college.hmco.com/history/readerscomp/naind/html/na_011300_eskimo.htm

Students will draw/color/paint a mural on paper depicting the portion of the whale hunt they were responsible for. The murals will be posted in order of occurrence. When the museum is open to other classrooms, students will act as museum docents and present information on the whale hunt to their museum visitors.

Assessment

Teacher-created rubric for the mural and oral presentations.

Extensions / Modifications

- Students can use draw pictures on a computer using a Paint program
- Students can create a video slideshow depicting parts of the whale hunt.

Lesson Title:	<u>Tale of a Whale: Culture</u>
Essential Question:	<u>How does environment shape culture of everyday living, both past and present?</u>
Guiding Question(s):	<u>How does the Inupiat culture differ from your own culture?</u>
Created by:	<u>UNM Summer Technology Academy 2004</u>
Intended Grade Level:	<u>3rd – 5th Grades</u>
Subject Area(s) or Topic(s):	<u>Social Studies, Language Arts</u>

Lesson Description

This lesson consists of 4 different activities which help students investigate the impact that environment has on the everyday living of people. These activities focus attention on values, ceremonial traditions, cultural games, and traditional clothing of the Inupiat peoples.

Curriculum Objectives

Activity 1: Values

The students will:

- research the values of the Inupiat People and what the Inupiat People value.
- use the Venn diagram to identify the differences and similarities in values of the Inupiat People with themselves.

Activity 2: Ceremonial Traditions

The students will:

- research the ceremonial traditions of the Inupiat society.
- analyze the collect data and compare/contrast it to their society using a Venn diagram.
- write a comparison/contrast essay of their analysis.

Activity 3: Cultural Games

The students will:

- use various resources to research cultural games.
- collect game directions, determine sequential order, and share in an understandable fashion.
- effectively communicate directions with peers.

Activity 4: Traditional Clothing

The students will:

- research the traditional dress of the Inupiat.
- relate how the clothing was influenced by the environment.
- display (posters/costumes) during the classroom museum examples of Inupiat traditional clothing.

Standards

New Mexico State Standards

Social Studies

Content Standard II – Geography

Students understand how the physical, natural, and cultural processes influence where people live, the ways in which people live, and how societies interact with one another and their environments.

Language Arts

Content Standard III – Literature and Media

Students will use literature and media to develop an understanding of people, societies, and the self.

ISTE Technology Standards

Standard 4- Technology communications tools

Standard 5- Technology research tools

Process

Activity 1: Values (This can be a small group or large group activity.)

1. Open discussion with the question: "What does it mean to value something?"
2. Have students make a list of their own values.
3. Use the following websites to have students research the values of the Inupiat People.
<http://ankn.uaf.edu/ANCR/Values/index.html>
<http://ankn.uaf.edu/curriculum/Inupiaq/Ilitqusiak/index.html>
4. Create a Venn diagram to compare and contrast their values with those of the Inupiat (see worksheet on page 4).
5. Students will discuss the reasons for the differences and the similarities in the values.

Activity 2: Ceremonial Traditions

1. Group students into small groups and have them use the following web sites to gather information about the ceremonial traditions of the Inupiat.
<http://nnlm.gov/pnr/ethnomed/inupiaq.html>
<http://www.alaskanative.net/>
<http://www2.grand-forks.k12.nd.us/iditarod/spiritmasks.html>
<http://www.anchoragemuseum.org/>
<http://www.ankn.uaf.edu/>
2. Have students will share what they found with the class.
3. Create a web or map showing the different aspects of ceremonial traditions of the Inupiat.
4. Ask students to write an essay that discusses the similarities and differences between their ceremonial traditions and those of the Inupiat.

Activity 3: Cultural Games

1. Using the following web sites, students will work in pairs to research games played by Inupiat children.
<http://www.ih.k12.oh.us/ps/Inuit/inuitgames.htm>
<http://gamesmuseum.uwaterloo.ca/VirtualExhibits/Inuit/english/>
2. Pairs will select one game and become the experts.
3. Students will create a poster with the directions for the game and then instruct peers.

Activity 4: Traditional Clothing

1. Students will research the traditional clothing worn by the Inupiat.
2. Students will design posters of the Inupiat wearing their traditional clothing.
3. Students will provide an explanation of materials used for the clothing. This can be orally during the classroom museum or in writing under the pictures.

Assessment

Teacher-made writing rubric for the essay

Observations by teacher of games teaching conducted by the students

Extensions / Modifications

Activity 1: Values

Students will write a compare/contrast essay comparing their lives to an Inupiat child's life.

Activity 2: Ceremonial Traditions

Students can make the ceremonial objects (such as: masks and drums).

<http://www2.grand-forks.k12.nd.us/iditarod/spiritmasks.html>

Activity 3: Cultural Games

Students will create an instructional video on their selected game.

Students will compare and contrast Inupiat games with the games played by students in their area.

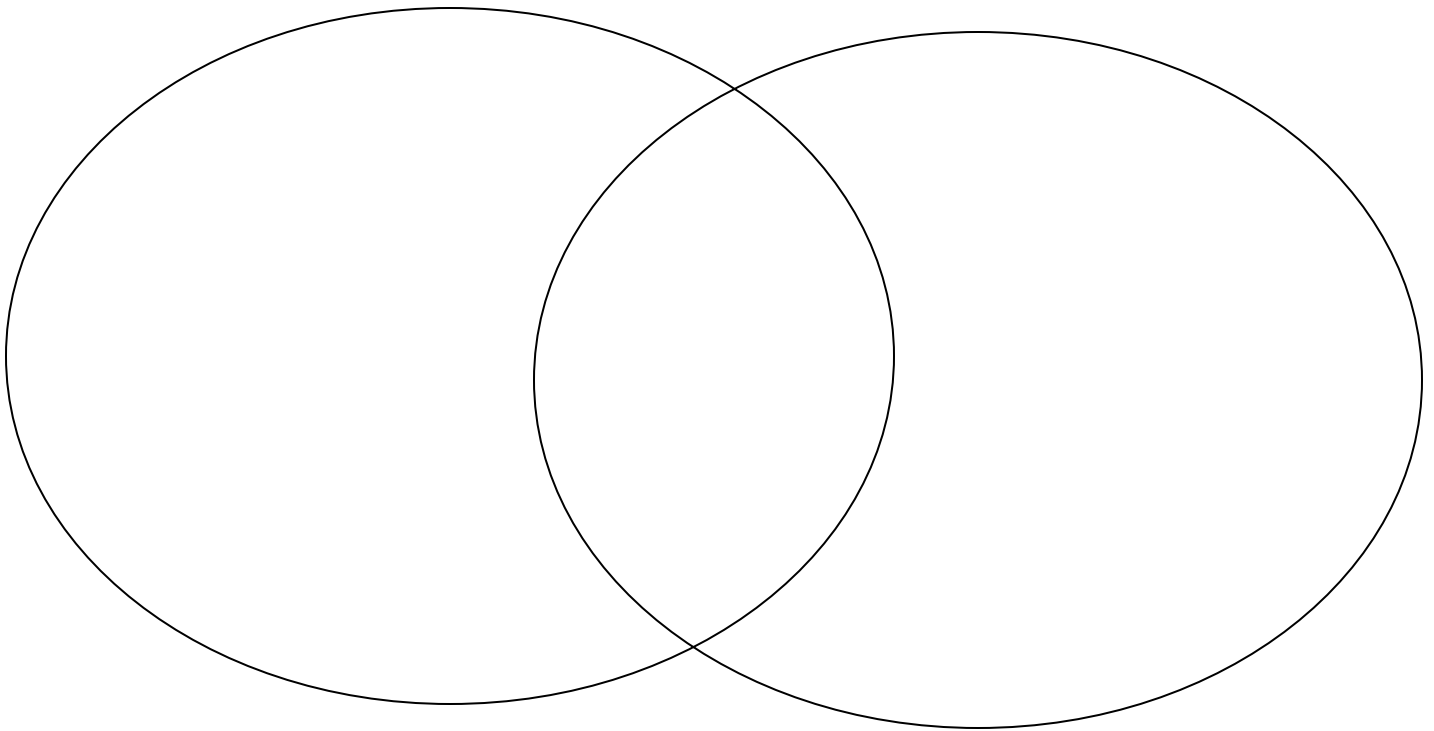
Activity 4: Traditional Clothing

Students will make costumes to be worn during the classroom museum.

<http://www.alaskanative.net/>

Cultural Comparisons

How do the values of the Inupiat People compare with your cultural values?



Inupiat Culture

Your Culture

Lesson Title:	<u>North By Southwest Newspaper</u>
Essential Question:	<u>How does environment shape culture of everyday living both past and present?</u>
Guiding Question(s):	<u>How do the Inupiat people live in the harsh conditions of Alaska?</u>
Created by:	<u>UNM Summer Technology Academy 2004</u>
Intended Grade Level:	<u>4TH – 5TH Grades</u>
Subject Area(s) or Topic(s):	<u>Science and Language Arts</u>

Lesson Description

Students will research, compare, and contrast the environment of the Inupiat people of the Cape Prince of Wales to their own environment (flora, fauna, wildlife, and climate). Students' research findings will be summarized in a classroom newspaper.

Curriculum Objectives

The students will:

- locate the Cape Prince of Wales in Alaska.
- define the tundra and alpine biome and compare it with the biome they live in.

NEW MEXICO Standards

Social Studies

Content Standard II - Geography

Students will understand how the physical, natural, and cultural processes influence where people live, the ways in which people live, and how societies interact with one another and their environments.

Language Arts

Content Standard III - Literature and Media

Students will use literature and media to develop an understanding of people, societies, and the self.

Resources and Materials:

As listed in process section and website resource page

Prerequisite Skills

Keyboarding skills

Mapping and atlas skills

Access internet resources

Process

1. Newspaper teams will consist of four small groups
2. Each group will write one column for the newspaper.
3. Two groups will research the alpine biome.
4. Two groups will research the tundra biome.
5. The alpine biome group will subdivide and do research on alpine animals and plants.

Alpine Biome

This site includes a map and information on plants, animals, and climate.

<http://www.blueplanetbiomes.org/alpine.htm>

6. The tundra biome group will subdivide and do research on tundra animals and plants.

Arctic Ecosystem. Be sure that you read the Fact Sheet.

<http://www.mb.ec.gc.ca/nature/ecosystems/da00s04.en.html>

Arctic Tundra Ecosystem in Northern Alaska

Look here to find images and biome information about Northern Alaska.

<http://biology.usgs.gov/s+t/frame/s113.htm>

Arctic Theme Page

Includes information about alpine and arctic biomes. This is a National Oceanic and Atmospheric Administration Site.

<http://www.nceas.ucsb.edu/nceas-web/kids/biomes/alpine.htm>

7. The alpine biome group will select 5 unique plants of Alaska and 5 unique plants in their area and include:
 - description of plant
 - biome region of plant
 - draw a picture of plant
8. The alpine biome group will select 5 unique animals of Alaska and 5 unique animals in their area and include:
 - biome region of animal
 - description of animal
 - food
 - name for young
 - enemies/defense
 - adaptations to environment
 - other interesting facts
 - draw a picture of an animal
9. The tundra biome group will select 5 unique plants to Alaska and 5 unique plants in their area and include:
 - description of plant
 - biome region of plant
 - draw a picture of plant
10. The tundra biome group will select 5 unique animals of Alaska and 5 unique animals in their area and include:
 - biome region of animal
 - description of animal
 - food
 - name for young
 - enemies/defense
 - adaptations to environment
 - other interesting facts
 - draw a picture of an animal
10. Use your research to write columns for the newspaper, edit, publish, and create a name for your newspaper.

Assessment

Assess completed project with a rubric of your choosing.

Extensions / Modifications

- Discuss how the Inupiat people used the Alaskan plants and animals to make their clothes, food, homes, and transportation in the past and present?
- Contrast how the Native American people in your area used plants and animals to make their clothes, food, homes, and transportation?
- Make a Venn diagram to compare and contrast the Inupiat people and the Native American people in your area.
- Additional newspaper extensions
- Write an editorial, propose new laws to protect endangered plants, animals, and environment of Alaska
- Create a crossword puzzle or cartoons
- Develop a Dear Alaskan Abby column (hypothesize questions, problems, and answers about the problems in the daily life of the Inupiat people)
- Simulate an Alaskan blubber-chewing contest with who can chew the most bubble gum in 10 minutes? (include the results in the sports section page)
- Celebrate the culmination of the Alaskan studies with Alaska Day. Find a recipe for Baked Alaska and make it. Listen to whale sound effects, eat Baked Alaska, and read the class newspaper

Website Resource Page

Basic information should be located using the sites listed below. Use the links under the specific headings for additional information.

EnchantedLearning.com-Biome/Habitat

Although this site has only basic information, it has excellent pictures of the fauna. Select a biome and scroll to find the animals.

<http://www.allaboutnature.com/biomes/>

Biome Basics

This site provides basic information on your biomes.

<http://oncampus.richmond.edu/academics/education/projects/webunits/biomes/biomes.html>

Biomes of the World

The Missouri Botanical Gardens provide good basic information on biomes. There is a good explanation of adaptations.

<http://mbgnet.mobot.org/sets/index.htm>

North Pacific Theme Page

<http://www.pmel.noaa.gov/np/index.html>

Introduction to Biomes

Pay particular attention to the food webs and energy pyramids. (World Builders)

<http://www.world-builders.org/lessons/less/biomes/introbiomes.html>

Scholastic Weather Watch

<http://teacher.scholastic.com/activities/wwatch/index.htm> Scholastic Interactive Weather Maker

<http://teacher.scholastic.com/activities/wwatch/winter/blizzard/index.htm>

Mission: Biomes

This NASA site gives basic information for each biome. It includes some useful charts and graphs.

<http://earthobservatory.nasa.gov/Laboratory/Biome/>

Nature Words: Terrestrial Communities

Written at a basic level, this site provides a starting point by defining and locating the biome and introducing plant and animal adaptations.

<http://www.nhptv.org/natureworks/nwep8.htm>

World Biomes

This site has excellent maps and some good pictures. Good introductory information is also included.

http://www.blueplanetbiomes.org/world_biomes.htm

National Weather Site

<http://www.weather.com/>

Arctic Studies at Smithsonian: (Mammals, Sea Mammals, and Birds)

<http://www.mnh.si.edu/arctic/>

Concentration Puzzle Game on Arctic Animals Smithsonian

<http://www.mnh.si.edu/arctic/game/index.html>

Lesson Title:	<u>Introduction to "Tale of a Whale"</u>
Essential Question:	<u>How does environment shape culture of everyday living, both past and present?</u>
Guiding Question(s):	<u>How do you plan an expedition to Alaska?</u>
Created by:	<u>UNM Summer Technology Academy 2004</u>
Intended Grade Level:	<u>3rd – 5th Grades</u>
Subject Area(s) or Topic(s):	<u>Social Studies, Science, Mathematics, and Language Arts</u>

Lesson Description

Introduce Alaska using the picture book Mama Do You Love Me? Small groups of students will then plan an expedition to Alaska. Planning considerations should include: location, mode of transportation, clothing, distance, duration, accommodations, National Parks, sites of interest, cost, and equipment. The culminating activity will include a presentation board of the expedition route, a travel brochure, and a scrapbook of the sites to visit.

The goal of this project is to familiarize students with the characteristics of Alaska to support the use of the scrapbook "Tale of a Whale" created by Suzanne Rognon Bernardi (1901-02).

Curriculum Objectives

The students will:

- identify the geographical locations in Alaska
- analyze and interpret weather data to determine mode of transportation and needed clothing
- calculate distance, duration, and cost
- communicate their findings through various media

New Mexico State Standards

Social Studies

Content Standard II – Geography

Students understand how the physical, natural, and cultural processes influence where people live, the ways in which people live, and how societies interact with one another and their environments.

Science

Content Standard II – Life Science

Understand the properties, structures, and processes of living things and the interdependence of living things and their environment.

Mathematics

Content Standard – Number and Operations

Students will understand numerical concepts and mathematical operations.

Language Arts

Content Standard I – Reading and Listening for Comprehension

Students will apply strategies and skills to comprehend information that is read, heard, and viewed.

Content Standard II – Speaking and Writing for Expression

Students will communicate effectively through speaking and writing.

Content Standard III – Literature and Media

Students will use literature and media to develop an understanding of people, societies, and the self.

ISTE Technology Standards

Standard 2- Social, ethical, and human issues

Standard 3- Technology productivity tools

Standard 4- Technology communications tools

Standard 5- Technology research tools

Standard 6- Technology problem-solving and decision-making tools

Process

Activity 1: Introduction

Begin the lesson with the book Mama, Do You Love Me? By Barbara M. Joosse. Before sharing the story, create picture and vocabulary cards, on large index cards, for the students with the following unfamiliar terms (If needed, the reader can then share the definition from the back of the book.):

1. Ermine
2. Lemming
3. Mukluk
4. Musk-ox
5. Parka
6. Ptarmigan
7. Puffin
8. Ravens
9. Umiak

Pass out the cards to students before sharing the book. As the reader uses a specific term in the story, the student with that card holds it up. The class then discusses the meaning of the word in context.

Follow the story with a class discussion about Alaska; try including graphics in the discussion.

Where is Alaska? Is it a part of the United States?

Alaska Trivia: Did you know?

Alaska is: 5 times larger than New Mexico.
 2 times larger than Texas.
 586,412 square miles and has 40,544 miles of shoreline (that's 40% of the total shoreline in the United States).

Resources:

Alaska Facts and Trivia

<http://www.50states.com/facts/alaska.htm>

Alaska Office of Economic Development

http://www.dced.state.ak.us/oed/student_info/student.htm

There is a wealth of information available on the Iditarod:

Iditarod: The Last Great Race

http://www.education-world.com/a_lesson/lesson103.shtml

The Iditarod Race Stations "Lesson Plans"

<http://www9.chatham.k12.nc.us/cyberPE/itarod.html>

Northern Journeys-Make a Dog Sled Model

<http://www.uaf.edu/museum/journeys/dogs/race2-2.html>

Activity 2: Location

Anticipatory Set

After seeing the scrapbook "Tale of a Whale," a local business is willing to sponsor an expedition to Alaska for an interested class. Your task is to work in small groups to research the characteristics of Alaska and plan this expedition. Your group will create a presentation board that will include the expedition route, a travel brochure, and a scrapbook of the sites to visit to convince the willing business that you are the class that should be given this opportunity.

Task

As you plan your expedition, you will need to decide the location of each place you plan to visit. Find the latitude and longitude of each of the following sites.

1. Juneau, capital of Alaska
2. Glacier Bay National Park
3. Wales, Alaska
4. Denali National Park

5. Extra Credit: Where is the closest point to Russia? How far away is Russia at this point?

Resources:

Latitude/longitude worksheet:

<http://www.idtarod.com/teachers/lessons.html>

Road maps:

<http://www.mapathon.com/ak.html>

Good maps of Alaska:

<http://www.alaskais.com/AKM.htm>

<http://members.aol.com/hpaumit/georaphy/Alaska.html>

Activity 3: Weather

1. As you travel around Alaska, what type of clothing will you need? Alaska is divided into climate zones. Identify the climate zone for each of the destinations.

Resources: <http://www.travelalaska.com/Climate/index.aspx>

2. Identify the time zone(s) for each location.

Resources: http://timetemperature.com/tzus/alaska_time_zone.shtml

3. When are you clothing taking the expedition? Choose a month for your trip and record the average temperature, average amount of precipitation, the average amount of daylight hours, and type of precipitation for each destination.

Resources: <http://www.travelalaska.com/Climate/index.aspx>

Click on regional climate and clothing.

4. Are there any weather hazards you need to be aware of at any of the destinations? If so, identify them.

Activity 4: Travel

1. Identify the various locations. Where will you go first? Plan the sequence of destinations. How are you going to get there? Will you go by car, plane, train, ship, or a combination of these? List each destination and tell how you will get there. How long will it take you? How far will you travel by each mode of transportation? How many days will it take you to get to each destination?

Resources: <http://www.travelalaska.com/>
<http://www.alaska.com/>

2. Where are you staying at each destination? Are you staying in a motel or camping? If you are camping, what do you need to take with you? How will you transport it?
3. What is the cost of the entire expedition?
 - What is the cost of the transportation (include all modes of travel)?
 - What is the cost of lodging (include the park fees if you are camping)?

Assessment

Teacher created assessment for presentation board.

Extensions / Modifications

- See additional lessons on whaling, the Inupiat culture, and the Alaskan environment to support a classroom museum.

Lesson Title:	<u>Bowhead Whales</u>
Essential Question:	<u>How does environment shape culture of every day living, both past and present?</u>
Guiding Question(s):	<u>What role does whaling play in the survival of the Inupiat people?</u>
Created by:	<u>UNM Summer Technology Academy 2004</u>
Intended Grade Level:	<u>3rd -5th Grade</u>
Subject Area(s) or Topic(s):	<u>Science, Language Arts, Social Studies, and Technology,</u>

Lesson Description

Lesson is designed to research Bowhead Whales.

All the products from this lesson will be part of the Alaskan classroom museum.

Curriculum Objectives

Students will

- present information about the Bowhead Whale.

New Mexico State Standards

Language Arts

Content Standard II – Speaking and Writing for Expression

Students will communicate effectively through speaking and writing.

Content Standard III – Literature and Media

Students will use literature and media to develop an understanding of people, societies, and the self.

Science

Content Standard II – Life Science

Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Social Studies

Content Standard II – Geography

Students understand how physical, natural, and cultural processes influence where people live, the ways in which people, places, and how societies interact with one another and their environments

ISTE NETS Technology Standards

Standard 1 – Basic Operations and Concepts

Standard 4 – Technology Communications Tools

Resources and Materials:

<http://www.enchantedlearning.com/subjects/whales/species/Bowheadwhale.shtml>

<http://www.acsonline.org/factpack/bowhead.htm>

http://www.afsc.noaa.gov/nmml/species/species_bowhead.php

http://www.uark.edu/misc/jcdixon/Historic_Whaling/

Books:

- The World of the Artic Whales: Belugas, Bowheads, and Narwhals, Stefani Paine, 1995
- Whale Snow, Debby Dahl Edwardson, 2003
- The Inuits, Shirleee P. Newman, 1993
- Whaling Days, Carol Carrich, 1993
- Gift of the Whale: The Inupiat Bowhead Hunt, A Sacred Tradition, Bill Hess, 1999
- Arctic Hunter, Diane Hoyt-Goldsmith, 1992
- Wise Words of Paul Tiulana: An Inupiat Alaskan's Life, Vivian Senungetuk, 1998

Prerequisite Skills

Students will need to be able to collect research from different types of medium such as reference books, library books, and websites.

Process

1. Students will brainstorm what they already know about Bowhead Whales and what they want to find out using the **KWL** chart (see page 3.)
2. Students will break into small groups and each group will research one of the following areas: size, physical characteristics, diet, habitat, type of whale, life cycle, etc. Groups will gather research information from books and websites on their specific area of the Bowhead Whale.
3. Each group will then create a teaching poster for the classroom museum that includes information and a two dimensional representation of their part of the bowhead whale.
4. Each group will orally present their teaching poster on the Bowhead whale to become expert museum docents.
5. The teacher will videotape the presentations of the teaching posters. All presentations will be combined into a digital book using imovie that will be shown in the whale museum.
6. With students acting as docents, parents and/or groups from other classrooms will visit the Bowhead whale exhibit to learn more about the Bowhead whale.

Assessment

Rubric for teaching poster and presentation.

Teacher observation

Extensions / Modifications *(optional):*

- Use adding machine tape to measure out the length of the bowhead whale in yards and inches.
- Compare and contrast whales with other mammals
- Create a bowhead whale from tissue paper or poster paper
- Pair up a high reader with a low reader or pair ESL students with native speakers if possible for language support.

KWL

Know	What to know	Learned

Lesson Title:	<u>Whales: Waste Not!</u>
Essential Question:	<u>How does environment shape the culture of everyday living, both past and present?</u>
Guiding Question(s):	<u>What role does whaling play in the survival of the Inupiat people?</u>
Created by:	<u>UNM Summer Technology Academy 2004</u>
Intended Grade Level:	<u>4th-5th Grade</u>
Subject Area(s) or Topic(s):	<u>Social Studies, Language Arts</u>

Lesson Description

Students research how the Inupiat used all parts of the whale after a hunt and then will create a game that emphasizes what they have learned. (e.g., Who Wants To Be a Millionaire, Jeopardy).

Curriculum Objectives

The students will:

- explain how all the parts of the whale were used by Alaskan Natives.

New Mexico State Standards

Social Studies

Content Standard II – Geography

Students understand how the physical, natural, and cultural processes influence where people live, the ways in which people live, and how societies interact with one another and their environments.

Science

Content Standard II – Life Science

Understand the properties, structures, and processes of living things and the interdependence of living things and their environment.

Resources and Materials

http://www.uark.edu/misc/jcdixon/Historic_Whaling/

Index cards for questions and answers for game

Encyclopedias

Books about Bowhead Whales and the Inupiat:

- The World of the Arctic Whales: Belugas, Bowheads, and Narwhals, Stefani Paine, 1995
- Whale Snow, Debby Dahl Edwardson, 2003
- The Inuits, Shirleee P. Newman, 1993
- Whaling Days, Carol Carrich, 1993
- Gift of the Whale: The Inupiat Bowhead Hunt, A Sacred Tradition, Bill Hess, 1999
- Arctic Hunter, Diane Hoyt-Goldsmith, 1992
- Wise Words of Paul Tiulana: An Inupiat Alaskan's Life, Vivian Senungetuk, 1998

Prerequisite Skills

Students will need to know how to research information utilizing a variety of resources.

Process

1. Students will use a variety of resources to gather information about the ways in which the Inupiat people use all the parts of a whale. Explain to the students that the natives believe it is disrespectful to waste any part of the whale.
2. After gathering information, students will work in groups to create a "Game". Sites on how to design games for the classroom:

<http://www.kimskorner4teachertalk.com/classmanagement/reviewgames.html>

3. Information for the teacher: Listed below are various ways in which different parts of the whale were used by the Inupiat:

- Whale meat: food
- Muktuk (whale blubber): food and oil
- Mamaaq (base of baleen): eaten raw
- Vertebrae: building material for steps and work tables, making traditional masks
- Ribs: building fences & posts, rafters for sod houses, arrow points, and spearheads
- Shoulder blades: door mats and ventilation into the house
- Lower jaw bones: sled runners, posts of the boat rack
- Baleen: nets, fish lines, rope, scouring pads, door mats, mukluk, insulation, household utensils such as bowls and buckets; today baleen is used to create art objects such as baskets
- Lining of lungs and liver: drumheads
- Blubber: food, oil lamps for light and heat called "tafibnieiq"-piece of cooked blubber for fuel.
- Internal organs (except bile, liver, and lungs): various purposes

Assessment

Successful creation of and participation in the game

Teacher observation

Extensions / Modifications

See additional lessons on introduction, transportation, culture, and environment to support a classroom museum.



Hunting and Fishing

Boy hunting with bow and arrow
Suzanne Bernardi photo album
Lois Minium Collection
1901
89.5.15
Maxwell Museum of Anthropology

Woman fishing for tomcod
Suzanne Bernardi photo album
Lois Minium Collection
1901
89.5.18
Maxwell Museum of Anthropology

Whale hunters heading out into open water
Suzanne Bernardi photo album
Lois Minium Collection
1901
89.5.29
Maxwell Museum of Anthropology

Man demonstrating bird spear with throwing board
Dr. Manser noted that he hit a piece of paper (3"x5")
two times out of three at a distance of 25 feet
Kivalina, Alaska
Dr. Julien G. Manser Collection
1932
69.71.234
Maxwell Museum of Anthropology

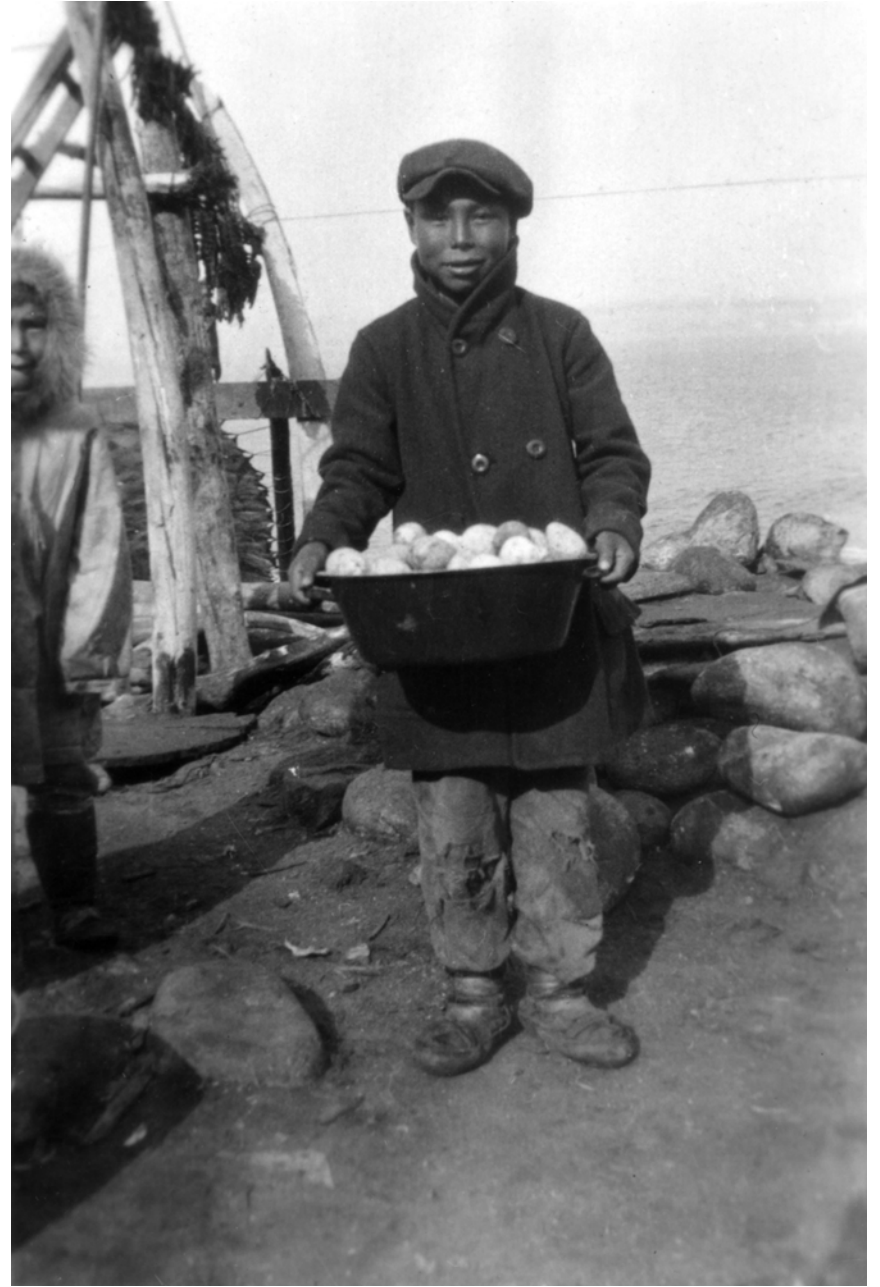


Housing of the Bering Sea People

St. Lawrence Yupiat women and children in
front of a winter house or *agra*
Gambell, St. Lawrence Island, Alaska
Dr. Julien G. Manser Collection
1932
69.71.192
Maxwell Museum of Anthropology

A native sod dwelling
Kivalina, Alaska
Dr. Julien G. Manser Collection
1932
69.71.235
Maxwell Museum of Anthropology

Yupiat man standing in front of door to
part-subterranean home
Nunivak Island, Nash Harbor, Alaska
Dr. Julien G. Manser Collection
1932
69.71.108
Maxwell Museum of Anthropology



Bering Sea Children

Boy, Orville Ahkinga, Sr., holding murre eggs he has
gathered from rock cliffs
Little Diomedes, Alaska
Dr. Julien G. Manser Collection
1933
69.71.213
Maxwell Museum of Anthropology

Children from King Island wearing *gaspeqs*
Dr. Julien G. Manser Collection
1932
69.71.284
Maxwell Museum of Anthropology

Date: _____

School: _____

Teacher: _____

Grade: _____

North by Southwest
Loan Kit Curriculum
Teacher Evaluation

Thank you for borrowing our *North by Southwest* loan kit and curriculum. Your feedback is vital for improving and expanding our programming. Please complete this survey and return it to a Maxwell staff member or mail to: Maxwell Museum of Anthropology, MSC 01 1050, 1 University of New Mexico, Albuquerque, NM 87131, attn: education programs. Thank you!

1. Did the instructions provide you with sufficient background information and were they easy to follow? (1 = not effective 5 = instructions effective)
1 2 3 4 5
2. Were the activities interesting and engaging for your students? (1 = not very interesting 5 = very interesting)
1 2 3 4 5
3. Were the objects and pictures useful for presenting the program content? (1 = not very useful 5 = very useful)
1 2 3 4 5
4. How well did these activities tie into the lessons you already teach in your classroom? (1 = not a good tie in 5 = good tie in)
1 2 3 4 5
5. How well did the activities meet the stated standards and objectives? (1 = did not meet them well 5 = met them well)
1 2 3 4 5
6. Please describe any activities that worked particularly well for your class and why.
7. Please describe any activities that did not work particularly well for your class and why.
8. Any suggestions to improve the trunk and lessons in the future? Please describe.
9. Please describe any adaptations you tried that worked well and you would like to share.
10. Would you like more information on Maxwell school and family programs? ☐ Yes ☐ No

If so, please provide your name: _____, phone # _____

Email address: _____