



# ***TOOLS AND TECHNOLOGY***



Developed by Leslie Fogg

A Publication of Chugachmiut Heritage Preservation Department

1840 Bragaw Street, Suite 110, Anchorage, AK 99508-3463

With support from US Department of Education,

ANE Grant #S356AQ09090054-10



*We would like to thank the following people and institutions for their contribution: Leslie Fogg, Pua Weichart, Virginia Lacy, Johnny Moonin, Cordova Historical Museum, The National Museum of Natural History at the Smithsonian Institute, Holly Nordlum at Naniq Design, and Great Originals.*

## TOOLS AND TECHNOLOGY

Copyright © Chugachmiut, 2013. Produced by the Chugachmiut Heritage Preservation Department, under the supervision of Helen Morris, with assistance from Rhoda Moonin, Barclay Kopchak, Jed Palmer, Hanna Eklund, Helen Loescher and Bernice Tetpon.

Copies of this publication can be ordered from:

Chugachmiut Heritage Preservation Department

1840 Bragaw Street, Suite 110, Anchorage, Alaska 99508

Tel: 907-562-4155

Fax: 907-563-2891

[www.chugachmiut.org](http://www.chugachmiut.org)

Funded by the United States Department Education, ANA Grant Number S356A090054. Other Heritage Kits available: Abundance of Birds , Medicinal Plants, They are Hunting, Sugpiaq Clothing, Driftwood, Grass and Plant Fibers, Honoring the Seal, Native Trade and Change, Storytelling , Gathering Plants to Eat, Ancestry, Our Foods from the Sea, Symbols, Wamluk – Let’s Play, Alutiiq Hunting Hats, Traditional Fishing.



# Table Of Contents

OVERVIEW .....	4
ACTIVITIES FOR GRADES K-2.....	6
TOOLS: WE CHOOSE TO LIVE HERE: K-2 (1).....	7
SUGPIAT TOOLS: ARCHAEOLOGY: K-2 (2) .....	10
TOOLS: TREASURE HUNT: K-2 (3) .....	14
TOOLS: HOW OLD IS IT?: K-2 (4) .....	17
TOOLS: PREHISTORIC TOOL TIME: K-2 (5) .....	20
TOOLS: MEN, WOMEN, & CHILDREN: K-2 (6).....	24
TOOLS - WHAT IS THE STORY? K-2 (7).....	27
TOOLS: SHOEBOX DIG: K-2 (8) .....	30
ACTIVITIES FOR GRADES 3-6.....	40
TOOLS: YOUR VILLAGE: 3-6 (1).....	41
TOOLS: HOW DID THAT GET HERE?: 3-6 (2).....	47
TOOLS: MAKE A SLATE TOOL: 3-6 (3).....	50
TOOLS: FORM AND FUNCTION: 3-6 (4) .....	53
TOOLS: KNIFEWORK: 3-6 (5).....	56
TOOLS: SHOEBOX DIG: 3-6 (6) .....	58
ACTIVITIES FOR GRADES 7-9.....	72
TOOLS: TRAVELING: 7-9 (1).....	73
TOOLS: RAW MATERIALS TO TOOLS: 7-9 (2) .....	79
TOOLS: DIVISION OF LABOR BY GENDER: 7-9 (3) .....	83
TOOLS: LIVING FROM LAND AND SEA: 7-9 (4).....	91
TOOLS: EXPLORATION AND CONTACT: 7-9 (5).....	97

<b>ACTIVITIES FOR GRADES 10-12 .....</b>	<b>101</b>
<b>TOOLS: INTRODUCTION TO TOOLS OF THE NORTH: 10-12 (1) .....</b>	<b>102</b>
<b>TOOLS: DAY AT THE MUSEUM: 10-12 (2).....</b>	<b>106</b>
<b>TOOLS: HISTORICAL COMPARISON: 10-12 (3).....</b>	<b>112</b>
<b>TOOLS: LIVING IN PLACE: 10-12 (4).....</b>	<b>115</b>
<b>TOOLS: IDENTIFYING ARTIFACTS: 10-12 (5).....</b>	<b>118</b>
<b>TOOLS: WHAT IS LEFT BEHIND: 10-12 (6) .....</b>	<b>122</b>
<b>TOOLS: DATING ARTIFACTS: 10-12 (7) .....</b>	<b>125</b>

# Overview

## *Sugpiaq Tools*

In the Chugach legend “How Raven Brought Fire,” as told by Makari, the villagers of Urumiertuli had many furs but no knowledge of fire or tool making. Raven revealed how to spark a fire two sticks and a cord. He also explained how to look for greenstone and use it to make an adze and how to make hunting implements out of stone. The people of Urumiertuli went on to teach neighboring villages how to build fires and hunt with stone tools. The legend thus acknowledges the primary importance of fire and tools that made Sugpiaq traditional life possible.

The Chugach region was first inhabited some 10,000 years ago during a climatic warming period. The retreat of glaciers left an ice-free coastal shore teeming with fish. As people migrated to this temperate area specialized tools for coastal living such as fish traps, nets, and innovative hooks were gradually developed and acquired. The throwing board and toggling harpoon head improved hunting and fishing success rates. The development of storage systems to preserve this bounty allowed enough excess for trade purposes.

The Sugpiaq in Prince William Sound were known for their precisely knapped slate blades, a tool they perfected some 500 years before their neighbors. These slate blades became a valued trade item. Indeed, the development of, and active participation in, a vast cross-cultural trading network greatly expanded the variety of Sugpiaq tool making resources. Obsidian and chert from the far north and copper from the Ahtna provided sharp cutting edges, moose and caribou antler from the Denaina were desirable for strong handles and hafts.

Not only material items contributed to the evolution of tool technology. Through trading contacts similar coastal lifestyles developed along the Gulf of Alaska’s shores and even spread to across the Bering Sea to the Sea of Okhotsk in Russia. “Comparative studies of Alutiiq art, tool and clothing design, beliefs, and oral traditions also suggest a very close relationship with Yup’ik culture, although Tlingit and Unangan characteristics are also well represented.” (Crowell, et al., 2001. p.29)

The Tools Heritage Kit curriculum allows students to examine the archaeological record of Sugpiaq tool development, determine tool uses and their efficacy, and appreciate the relationship between the Sugpiaq traditional subsistence lifestyle and the tools that sustained them. Furthermore students will understand tools as culture bearers whose use depended upon traditional social roles and a respectful attitude towards the use of local resources.

### References:

Crowell, A.L, Steffian, A.F., & Pullar, G.L. (2001). *Looking Both Ways: Heritage and Identity of the Alutiiq People*. Fairbanks, Alaska: University of Alaska Press.

Johnson, J.F.C., & Page, B. (Eds.). (1984) Chugach legends. Anchorage: Chugach Alaska Corporation.

# Activities for Grades K-2

**TOOLS: WE CHOOSE TO LIVE HERE: K-2 (1)**

**Grade Level:** K-2

**Overview:** Through this introductory lesson on the Sugpiaq/Alutiiq the students will explore how the nature of the land, bodies of water, climate, available resources, and weather affect where people have lived and modified their environment in prehistoric and modern times.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<b>E2:</b> Culturally-knowledgeable students demonstrate an awareness and appreciation of the relationship and processes of interaction of all elements in the world around them. Students who meet this cultural standard are able to understand the ecology and geography of the bioregion they inhabit.	<p><b>Geography B1:</b> A student should be able to utilize, analyze, and explain information about the human and physical features of places and regions.</p> <p><b>Geography B6:</b> A student who meets the content standard should: know that places have distinctive geographic characteristics; make informed decisions about where to live, work, travel, and seek opportunities.</p>	<p><b>S8:</b> Students should be able to learn/observe the weather and tides.</p> <p><b>G4:</b> Students should be knowledgeable about natural vegetation.</p>

**Estimated Time:** One 30-minute class

**Lesson Goal:** Discover what makes a habitable location and how the Sugpiat/Alutiiq used tools to modify the area for habitation.

**Lesson Objectives:** Students will:

- Discuss the terrain, weather, and resources of where they live
- Learn about the tools the Sugpiaq/Alutiiq people use for constructing shelters
- Learn what makes a site habitable.

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
Wind	aqlaq	aqlaq
Rain	qiteq	qiteq
Mountain	ingngiq	ingngiq
Shore		quta
River		kuik
Trees	napaq	napaq
House	ena	ena
Adze		cuu'uk

**Materials/Resources Needed:**

- Photographs of your town to include home sites, schools, commercial areas, churches, harbor, mountains, and shore line.
- Pictures of the adze, maul, and splitting adze (in the heritage kit)
- "Aialik Bay Archaeological Site" DVD that details the Elders' visit to the site and the artifacts uncovered by Dr. Aron L. Crowell and staff from the Rasmussen Museum Arctic Studies Program, approximate length 30 minutes (in the heritage kit).

**Websites:**

“<http://alaska.si.edu>, Retrieved 1.12.13, Smithsonian Institute Arctic Studies Program, Anchorage, AK, images of artifacts from the Sugpiaq/Alutiiq Culture (30 min.)”

“<http://www.oceanalaska.org/research/coastarch-images.htm>, Retrieved 1.12.13, Aialik Bay archaeological site, Kenai Fjords National Park, Seward, AK (10 min.)”

**Teacher Preparation:**

- Display of photographs from your community displayed in the classroom
- Culturally Modified Trees (CMT), “Look! The Chugachmiut Were Here” by Ron Kent, 1999. Found in the addendum.
- “Habitat of the North Gulf Coast” compiled from information obtained from the Kenai Fjords National Park Service, C.J. Rae, Seward, AK. Found in the addendum.
- “Prehistoric Wood Harvesting”, “Chugachmiut Corporation, 4201 Tudor Center Drive, Suite 210, Anchorage, AK 99508, Dr. Robert Shaw, September 2000, Curriculum Project: Trees to Boards Using Prehistoric Tools of the Chugach People of Alaska’s Pacific Coast.” Found in the addendum.
- Background Information:

**Artifacts**

Stone adzes made of greywacke have been found inside the remains of Sugpiaq houses. An intact artifact will display a cutting edge and grooves for lashing to a handle. The splitting adze was used to fell hemlock or spruce trees and to shape them into beams and rough lumber. Planks were split off the trees using a maul to drive a wedge made from stone or bone. The planning adze smoothed out the rough surfaces of newly cut wood surfaces. Culturally modified trees reflect stripping of bark to use as roofing material and to get to the inner layer to use for food. See the Ocean Alaska Science and Learning Center website:

“<http://www.oceanalaska.org/research/coastarch-images.htm>, retrieved 1.12.13, for an additional visual sense of how the adze was attached to a handle and used (5 min.)”

Planks were used to frame houses, smokehouses, and kayaks as well as used to form wall siding. Wood was also carved to make boxes, bowls, spoons, and handles for tools. Bark was stripped off trees and had several uses. Outer bark strips were loosely woven for roofing, and the inner bark with the cambium layer was dried to use as a food seasoning. Pitch and roots were also used.

**Opening:** Begin by having the students draw a picture of where they live. Include those things that make the community a habitable place to live, such as houses, trees, nearby river or lake, mountains, ocean, and animals. (Have various photographs of the community on display in the classroom, for example: houses, church, school, beach, and mountains.)

**Class I:**

1. Have the students share their pictures of the community and ask class what they see in the drawings. Repeat the random responses. When appropriate introduce the Sugt’sun vocabulary words and have the students repeat the words throughout the lesson.
2. Compare the students’ drawing with the photographs, and discuss the needs that are met by living by a natural harbor, source of fresh water, and hunting grounds.



- a) Ask them to think about where their own home is located and answer the following questions: Weather: Ask how the weather is in winter and summer. Land: Where do they live? High ground/low ground, flat ground/side of a hill/top of a hill, by a mountain/by the harbor (shore), up the highway (inland)/in town. Water: by a stream or the bay? Trees: By a lot of trees, some trees, or no trees?
  - b) Ask question about what kind of problems weather can cause, such as: What can happen to a house or street when it rains for a long time? (*i.e. street icy in winter after a rain, flooding in low lands after heavy rain, basement fills with water, etc.*)? Can trees near a house or street in a windstorm cause problems? (*i.e. trees fall on electric lines and cause power outages, etc.*)
  - c) Ask questions about food sources in the area.
  - d) Conclude this portion of the discussion by making a comparison between why we live in this community and why our ancestors chose to live in this area.
3. Once a site has been located, began to make the area livable by gathering needed resources and constructing shelters.
- a) Show the drawings of the stone splitting adze and planning adze. Ask students if they have seen such modern tools as an axe, wood splitter, and plane used before. Explain and demonstrate how the adze works.
  - b) Show the images from the website “ <http://www.oceanalaska.org/research/coastarch-images.htm>, retrieved 01.12.13, Aialik Bay archaeological site, Kenai Fjords National Park, Seward, AK (10 min.)”
  - c) Talk about the role of a wedge and maul to split wood and fell tree. Refer to “Prehistoric Wood Harvesting”, “Chugachmiut Corporation, 4201 Tudor Center Drive, Suite 210, Anchorage, AK 99508, Dr. Robert Shaw, September 2000, Curriculum Project: Trees to Boards Using Prehistoric Tools of the Chugach People of Alaska’s Pacific Coast.”

### **Going Further:**

- Bring in modern hand tools such as an axe, splitter, modern adze, plane, and/or saw. Ask children about what they know and show how the adzes corresponds either differently or similarly to these common tools used in working with wood.
- Discuss how different parts of evergreen trees were used by the Sugpiaq and the Russians (ship building, housing, etc) and are used by people living here today. (Refer to “Look! The Chugachmiut Where Here” on page 9 for uses of wood.)

## SUGPIAT TOOLS: ARCHAEOLOGY: K-2 (2)

### **Grade Level: K-2**

**Overview:** By making a peanut butter and jelly sandwich, the students will discover the archaeological concept of the oldest layer is on the bottom (stratigraphy), the technique of using a core sample, and interpreting results by building an edible archaeological site using items representing Sugpiaq/Alutiiq tools from the Paleoarctic period and learning about the tool traditions of the past through the discoveries of artifacts.

### **Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
A3: Acquire and pass on the traditions of their community through oral and written history.	Geography E2: Understand how resources have been developed and used.	

**Estimated Time:** One class period of 30 - 50 minutes

**Lesson Goal:** Discovery of Sugpiaq/Alutiiq tool artifacts through archaeology.

**Lesson Objective(s):** Students will:

- Demonstrate how time is recorded in layers
- Define and demonstrate stratigraphy/layer upon layer
- Understand how archaeological sites can be destroyed through human intervention

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
Point/head		cigniq
Rocks		yaamat

**Materials/Resources Needed:**

- 3 slices of bread, jelly, peanut butter (or substitute), raisins, sprinkles, hard candies, plastic spoon, plastic knife, large clear straws, napkins, paper plates

**Websites:**

<http://www.nps.gov> Retrieved 1.16.13, archaeological discovers within the Alaska Nation Parks of Gates of the Arctic, Skagway, Brooks River, Katmai, and Sitka.

<http://www.alaska.si.edu> Retrieved 1.16.13, browse Suqpiac Culture for a collection of artifacts at the Smithsonian Institution Arctic Studies Center at the Rasmussen Museum, Anchorage, AK.

**Teacher Preparation:**

- To help eliminate the expense of this project, it is suggested that a list of materials be given to the students to bring from home.
- Invite an elder or recognized expert to read the narrative and introduce the Sugt'stun vocabulary words for the students to repeat in chorus while they build the "sandwich."

- Have available ingredients and items representing tools at each station. Refer to the attached “Archaeological Site Narrative” for the suggested ingredients.
- Display photographs of tools, such as points and spears (included in the kit). Additional pictures of artifacts can be retrieved from the listed websites.

**Opening:**

Have you ever found something special on the ground, or when digging in the dirt, or something that was hidden in the snow all winter?

**Class I:**

1. Have each group of students build their archaeological sandwich with the material provided.
2. As the students begin layering, read the attached “Archaeological Site” narrative. Invite an elder or recognized expert to read the narrative and share their personal knowledge. Request the elder to introduce the Sugt’s tun vocabulary words and have the students repeat the word during the activity.
3. As various items are placed between the sandwich layers, liken them to the tools made of stone/slate, bone from food, and sand/gravel between layer as well as signs of habitation such as fire pits, broken rock, charcoal, and tent post holes. Explain that should layering continue to be constructed, then through time the material of copper and iron were also used for tools.
4. The students will exchange “sandwiches” and will use archaeological methods to locate artifacts as the attached narrative “Archaeologists Discover Site” is read.
5. Review the artifact that the students discovered.

## Archaeological Site Narrative

1. We are at a prehistoric site located at the edge of the sea about 10,000 years ago. (*Lay down a slice of bread.*) The land looked much different then due to lower sea levels that allowed dry land between the continents of Asia and Alaska.
2. The site becomes flooded and a new **LAYER**/layer of sand and gravel is left behind. (*Spread the peanut butter/or substitute.*)
3. A group of Paleoarctic hunters camped on this site and built a fire. Their fire leaves behind charcoal and **ROCKS**/rocks that crack from heat. (*Have students slice raisins in half, or use chocolate chips, and arrange them in a circle on the sandwich, and sprinkle chocolate sprinkles inside the circle.*)
4. Through time another **LAYER**/layer of sand and gravel accumulated over the campsite. (*Lay down another piece of bread.*)
5. Many years later, perhaps between 2500-1500 B.C., which is 4,500 years ago, another group of sea mammal hunters set up camp between nearby rookeries. They set up animal skin tents. (*Have the students gently cut small indentations or holes in the last slice of bread/or used Cheerios for the holes. These represent the holes dug to hold posts for the tents.*)
6. The tent floor has a simple hearth/fire pit surrounded by **STONES**/stones and bits of charcoal. (*Have the students slice raisins in half and arrange them inside the tent postholes and sprinkle chocolate sprinkles inside the circle.*)
7. While the hunters inhabited this site they left behind food bone and tool artifacts of slate **POINTS**/points and lances. The hunters shaped and sharpened their tools to be ready for the next hunt. (*Have the students add small pieces for gummy worms to represent the food bones and broken cookies for the points and lances.*)
8. Water reaches this site. (*Students spread jelly, which may cause some redistribution of artifacts.*)
9. Through time another **LAYER**/layer of sand and gravel covers this ancient hunting site. (*Students put on the top layer of bread.*)

### Archaeologist Discover Site

1. Another group of Native people began to inhabit the site. (*Have the students exchange the "site" or sandwich.*)
2. Today, an archaeologist suspects this site was a prehistoric habitation site and conducts random core samples and surveys. (*Have the students push large straws randomly through their sandwiches. If they find a sprinkle or hit something, they may have found a habitation site.*)
3. The archaeologist conducts a test excavation at the site. (*Students cut a square into the sandwich and remove layers, one by one. If they find something, they have found the habitation site.*)
4. From this test excavation, the students can see their layers. This is stratigraphy. Ask the students to identify the oldest layer. Have the students take the sandwich pieces apart one by one and identify as many artifacts as they can. Remind them of the two fire pits, bits of food, points and spears, tent postholes.
5. Explain to the students that the process of excavation actually destroys the site and cannot be recreated for further study. (*Have the students fully excavate the site by removing each layer from the "site/sandwich". Have the students consider if they would still have a sandwich.*)

Or as an alternative have the students eat their sandwich. If they find an artifact before it is eaten it may be considered salvage archaeology done in the face of impending loss. If it gets in their mouths before they "discover" it, it is lost in the action of modern use.

**TOOLS: TREASURE HUNT: K-2 (3)**

**Grade Level:** K-2

**Overview:** Sugpiaq/Alutiiq tools can be found in our local surroundings. Small groups of students will be given clues to location and type of artifact they are seeking. Each group will then give a brief statement about the artifact they found.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<b>B4:</b> Identify appropriate forms of technology and anticipate the consequences of their use for improving the quality of life in the community.	<b>History C3:</b> Apply thinking skills, including classifying, interpreting, analyzing, summarizing, synthesizing, and evaluating, to understand the historical record.	<b>SS6:</b> Students should know the proper use, respect, and care of each traditional tool.

**Estimated Time:** One 30 - 50 minute class period

**Lesson Goal:** To develop an understanding that Sugpiaq/Alutiiq tools performed many of the same functions as our tools of today.

**Lesson Objective(s):** Students will:

- Follow a basic set of instructions
- Predict what types of artifacts could be found in various locations
- Learn how the tool was used

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
House	ena	ena
Tools		piktsutet
Spoon	luskaq	luskaq
Bowl		ciquq
Arrow	rruq	rrug
Spear	panak	panak

**Materials/Resources Needed:**

- Pictures of tool or artifacts to be hidden (in kit)

**Websites:**

[www.alaska.si.edu](http://www.alaska.si.edu) Retrieved 1.17.13, pictures of Sugpiaq artifacts

**Teacher Preparation:**

- Hide the pictures or artifacts in the specified areas prior to the treasure hunt.
- Divide the classroom or outdoor area into 4 quadrants and within each area place a picture of a modern tool and a Sugpiaq/Alutiiq tool. One group of students should be searching for the new tools and another group for old tools within each area.

NW area – house site: paired items (bentwood basket/cooking pot, oil lamp/lamp, gut skin parka/raincoat, ulu/knife, Alutiiq bobbin/bobbin, grass boots/rubber boots, bone needle/medal needle.

NE area – community area: paired items (women’s bowl/china bowl, wood doll/Barbie, serving spoon made of sheep horn/large ladle, beads of bone or ivory/plastic beads, child’s toy bow and arrow/toy bow and arrow with suction cups.

SW area – men’s work area: paired items (slate points and arrows/metal arrow points, wood floats/plastic floats, fish hooks/metal halibut hooks, carving tool with bone or wood handle/metal carving knife, adze/axe, bone wedge/metal wedge, hammer stone/hammer

SE area – trash pile: paired items usually found damaged (food bones/boxes or wrapper, wood plate/foil pie pan, broken arrow shaft/bent metal shaft.

- Pre-assign students into appropriate size groups
- Arrange for an elder of the village or community to share a brief history of the area and their memories of the village.

### **Opening:**

Discuss having a treasure hunt as the students assist you in dividing the room into four quadrants along the north/south and east/west axis. Point out specific compass directions using references such as North-wall, South-SmartBoard, West-windows, East-door.

### **Class I:**

#### Activity I: Hidden Treasure Hunt

1. Have Elder tell the story of their memories of the village as a child growing up.
2. The students should predict what they think might be found in each of the areas.
  - a. For instance, would you find a fire ring, an oil lamp, a basket, or other artifacts around a house site? In the men’s work area would there be tools? What would you find in a midden/trash pit? What might be found in an area where large groups of people gathered? You may wish to have the students associate what they have in a modern home that could be found in a traditional native home.
3. Allow each student group to investigate their assigned area and collect the artifacts, pictures, or items. Advise the students that they may find a broken artifact or an artifact with a part missing and that these are important finds that should be preserved.
4. When the class reconvenes, have the students match their finds with pictures gathered by their group. You should find students in pairs of two each holding a picture of related items. Each laminated photo will have a brief description of the artifact (name in English and Sugt’s tun, age/time period, use, and culture/cross culture. Request the elder to assist in helping the students repeat the name of the artifact in Sugt’s tun.
5. After the artifacts have been identified, have each student or groups tell about what they found, and if the predictions were correct.
6. Ask the students if they can determine the use of the artifact by comparing it with the modern day equivalent.

#### Activity II: Prompt and response game.

1. Give a verbal clue about a modern tool and the students should respond with a matching Sugpiaq/Alutiiq tool or artifact.
2. If I didn’t have a hammer, I would use a \_\_\_\_\_. (stone)

3. If I didn't have thread, I would use \_\_\_\_\_. (sinew)
4. If I didn't have a nail, I would use a \_\_\_\_\_. (wood peg)
  - a. Continue using similar pairs of modern and ancient artifacts items.
    - i. canoe (kayak), pot (bentwood box), shell/glass bead necklace (plastic necklace),
    - ii. silverware (wooden spoon), china plate (wooden plate), halibut hook (bent wood
    - iii. raincoat (gut skin parka), nylon tent (animal skin tent)
5. As the students become familiar with the rhythm of the game, ask the students to think of the modern tool and another student respond with the ancient artifact. Remind the class that the Sugpiaq/Alutiiq people used items derived from natural resources in their area or traded from neighboring tribes. Organize the students in two rows facing each other and have one student give the clue and the student on the opposite side respond.



## TOOLS: HOW OLD IS IT?: K-2 (4)

**Grade Level:** K-2

**Overview:** The students will explore stratigraphy or layering as one of the methods used to determine an artifact's age range by identifying various tools and placing them on a stratified timeline diagram.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
E5: Recognize how and why cultures change over time.	History C3: Apply thinking skills, including classifying, interpreting, analyzing, summarizing, synthesizing, and evaluating, to understand the historical record;	S6: Students should know the proper use, respect, and care of each traditional tool.

**Estimated Time:** One 30-minute class period

**Lesson Goal:** Introduce students to stratigraphy dating of Sugpiaq/Alutiiq tools made from stone, bone, wood, copper, and iron.

**Lesson Objectives:** Students will:

- Recognize tools based on form by comparison with present day tools
- Verbalize how the tool might be used
- Develop an understanding of the resourcefulness of Native people
- Develop an archaeology site time line to record tool technological advancement

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
Oil Lamp	qangihlat lampat	qangihlat lampat
Ulu	ulluaq	uuluaq
Adze	cuu'uk	cuu'uk
Wedge		qupuisutet

**Materials/Resources Needed:**

- Chugachmiut Timeline (in addendum)
- Archaeology Dig display panel (in kit)
- Laminated photographs of tools (adze, wedge, harpoon, oil lamp, slate lance, fish hook, ivory figurine, ulu, bobbin, copper sea otter point) (in kit)
- 'Archaeological Site Tools Profile' Handout – master copy attached (one copy per student)
- 'Tools Picture Page' Handout (one copy per student)
- Scissors, glue

**Websites:**

<http://alaska.si.edu> Retrieved 1.12.13 Smithsonian Museum Arctic Studies Center, Rasmuson Museum, Anchorage, AK. Photographs of Sugpiaq/Alutiiq tools and artifacts.

### **Teacher Preparation:**

- Additional tools photographs can be viewed on <http://alaska.si.edu> website and projected onto SmartBoard.
- Photocopy “Archaeological Site Tools Profile” Handout and tools picture page.
- Display the laminated timeline and tool photographs.

### **Opening:**

Ask students to describe something they regard as really, really old. (*dinosaurs lived 245-65 million years ago; Egyptian pyramids were built 5,000-3,000 years ago and Mayan pyramids 3,000-1,000 years ago; glaciers’ ages vary but the most recent glacial formation period was the Little Ice Age of 4,000 years ago....*)

With these observations in mind, display the Chugach timeline to illustrate just how old they are and where (and when) on the timeline tool artifacts would have originated.

### **Activity:**

1. Distribute the tools picture page and have students color and then cut out tools.
2. While students are cutting out pictures, distribute the “Archaeological Site” handout.
3. Have students glue pictures to the “Site” page as you provide instructions. You may choose to begin with the present day and ‘dig down’ to the oldest layer to illustrate that artifacts found in the bottom layer of soil are the oldest.
  - a) Present Time—ask students what you would find left behind at a campsite or home site: (*plastic spoons, shoot gun shells, fish bones, aluminum cans*). Note that Present Time includes students’ great-grandparents’, grandparents’, and parents’ lifetimes – back to the turn of the 20<sup>th</sup> century.
  - b) AD 1893-1760 —Contact Period: bobbin for sinew thread, spool, food bowl, copper sea otter points
  - c) AD 1100 -1760 —Late Pre-contact Era: bentwood boxes, slate lances, barbed harpoon, needle, toys (ulu, scoop, war club, shield, doll)
  - d) 3,500 years ago – AD 1100 —Middle Era: similar use of raw materials as the Early Coastal Life and employ many of the same tools, stone hearths, clay-lined pits, gut scraper, stone weight used for fishing, decorative ivory carvings
  - e) 7,500 -3,500 years ago—Early Coastal Life: rock rings that held down edges of tent covers, small post holes left by tent frames, slate lances, stone oil lamp, fish hooks
  - f) 10,000 years ago—Paleoarctic Time Period: micro blade chips from chert, barbed harpoon for sea mammal hunting
4. As the class glues their pictures to the “site” page, show the photographs of the tools and ask the students to repeat the tool name in English and Sugt’s tun.
5. Review the tool artifacts and discuss how they were used. Refer to the information on the reverse of the laminated tool photographs. Ask the students to make a comparison to tools that are used today.

**ARCHAEOLOGICAL SITE  
SUGPIAQ/ALUTIIQ TOOLS PROFILE**

	Era: _____
AD 1760 – 1893	
	Era: _____
AD 1100 – 1760	
Era: _____	
3,500 years ago to AD 1100	
	Era: _____
7,500-3,500 years ago	
	Era: _____
10,000 years ago	

**TOOLS: PREHISTORIC TOOL TIME: K-2 (5)**

**Grade Level:** K-2

**Overview:** By observing the form and shapes of tools from the Sugpiaq/Alutiiq past, students will make predictions about tool functions. The study of prehistoric artifacts can tell us a lot about the people who made them and used them. Artifacts provide a record of ancient technology, subsistence practices, and lifeways. They give clues about population size, settlement patterns, and a people's relationship to their environment.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
B2: Make effective use of the knowledge, skills and ways of knowing from their own cultural traditions to learn about the larger world in which they live.	History A9: Understand that history is a fundamental connection that unifies all fields of human understanding and endeavor.	CE7: Students should have knowledge of traditional and contemporary tool making

**Estimated Time:** One 30-minute class period

**Lesson Goal:** To discover that form follows function.

**Lesson Objective(s):** Students will:

- Brainstorm in groups, or in a teacher led activity, ways in which certain tools were used
- Explain how the Sugpiaq/Alutiiq used the natural resources available to them to fashion tools needed for daily living
- Compare the functions of prehistoric tools to their modern counterpart

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
Form/Shape		cangurlluni
Function/Use		aturulku
Old		qangirllaq
New		nuta'aq

**Materials/Resources Needed:**

- Photographs of traditional Sugpiaq/Alutiiq tools (in kit)
- Catalogs and magazines from which pictures of modern tools can be cut out
- Glue and scissors

**Websites:**

<http://alaska.si.edu> Retrieved 1.24.13, photographs of artifacts  
<http://www.webrangers.us/activities/photo> Retrieved 1.24.13, interactive activity using photographs from the Moore Family of Skagway, Alaska about 100 years ago.

### **Teacher Preparation:**

- Make copies of handout “Compare New and Old Tools”
- Provide catalogues with pictures of tools, household goods, and hunting items
- **Background Information:**
  - The prehistoric people of the Chugach Region lived along the coastlines of Prince William Sound, the Kenai Peninsula to the west, and the Gulf of Alaska to the east as far as Icy Bay. Hundreds of prehistoric and historic sites are scattered along these shorelines. Some of these sites used to be villages, some were hunting camps, and others were burial sites. These sites contain many artifacts that form a record of the prehistoric peoples and their activities.
  - There are many kinds of prehistoric artifacts found in the Chugach Region such as stone lamps, slate ulu blades, bone harpoon points, and ivory figurines. Some artifacts are preserved in their original shape. Some artifacts are found broken and missing perishable parts such as wooden handles.
  - Prehistoric artifacts preserve an important record of Native culture in the Chugach Region, which extends back thousands of years before the introduction of writing with the arrival of Russian and European explorers. Artifacts and discarded bones tell us about the history of Native traditions of hunting sea mammals such as seals and whales, and fishing for salmon and bottom fish. Artifacts also tell us about Native ingenuity, and a different way of life in this beautiful yet sometimes harsh environment.

**Opening:** Bring a collection of old items (wooden spool, thimble, needle threader, darning egg, etc.) and place them on a table for the students to view. Then open a discussion regarding nuta’aq/new and qangirllaq/old by asking: Have you ever said, “that’s old fashioned”, “I don’t want to be caught wearing that”, “I don’t know what that is for, just throw it away.”? State that the students are going to take a look at some of those “old” things and see just how useful they still are.

### **Activities:**

I. Classify tools by the aturluku/function or job they were designed to accomplish. In this activity cangurlluni/form, or the physical shape of a tool, follows the tool’s aturluku/function, or how it was used.

1. Distribute catalogs and scissors to students. Each student is to select four tools, implements, or utensils from the catalogs.
2. While the students are completing cutting out the tool items, distribute the “New and Old Tool” handout. Tell the students to glue the pictures on the handout under “New”. Introduce the Sugt’stun words for nuta’aq/new and qangirllaq/old and have the students repeat the words several times during this lesson.
3. Then compare the items chosen with one from the past. Draw a picture of the Sugpiaq/Alutiiq artifact.
4. Discuss or demonstrate how the two performed the same aturluku/function. A bone wedge/a metal wedge for splitting wood, a knife/an ulu for cutting, a ceramic bowl/wood bowl, an adze/axe for chopping etc. Introduce the Sugt’stun words for cangurlluni/form and aturluku/function and again have the students repeat the words several times.

5. Compare the size, weight, materials (natural resources), accuracy, and cost (in money/time and material).
6. In group discussion or brainstorming, ask who made the tool, who used the tool, and what it was used for (refer to the information printed on the reverse side of the artifact pictures included in the Tool Heritage Kit).
7. Display additional artifact photographs by viewing the website <http://alaska.si.edu> and selecting the Sugpiaq Culture.

II. Tools can also be classified by their age or period of use. When classifying by age a timeline can portray things that happened in the community or area going back from the time the student was born to contact by Russian explorers when the first historical accounts of the Sugpiaq/Alutiiq culture were recorded. To help the students relate to the dates on a timeline, structure the time periods from when mother/father/grandparents/great grandparents were born (refer to the timeline used in Activity I).

1. Have each child bring in an old photograph of their community or family to explore the time frame and the artifact that were used (e.g. clothing, jewelry, events, houses, and tools are all useful in interpreting information from the photograph).
2. As an alternative, display several photographs to the class and ask the students what they see in each picture, and list the artifacts on the board noting the time period.
3. As a class activity discover secrets hidden in old photographs from the Moore family who lived in Skagway, Alaska about 100 years ago (1896-1913) by viewing the website <http://www.webrangers.us/activities/photo>.
4. Ask an elder or parents to participate with the students in identifying the time frame and tools used.

**COMPARE NEW & OLD TOOLS  
FORM & FUNCTION**

New Tool	Sugpiaq/Alutiiq Tool	Form & Function

**TOOLS: MEN, WOMEN, & CHILDREN: K-2 (6)**

**Grade Level:** K-2

**Overview:** The students will learn that each gender used certain tools to accomplish their daily tasks. From the Karluk 1 archaeological site on Kodiak Island a toy doll, ulu knife, scoop, war club, shield, and bow reveal the grown-up play of children. Children grew up learning the many skills they would need as adults by playing with toy versions of women’s and men’s tools. Girls played with dolls, toy stone knives, and other women’s tools, and began to learn to weave baskets, process skins and sinew, and sew when very young. By age six girls polished thread and plaited cords. Boys played with toy boats, paddles, spears, and bow and arrows. It was believed that each type of child’s play was appropriate to a certain time of year. Some pastimes were thought to influence seasonal changes, such as tops, which were spun in winter to hasten the return of the sun. Men and boys brought out bow and arrows in the spring when the geese migrated for shooting competitions on the beach. Boys played with toy boats in spring, pulling them along the shoreline on strings. When the swallows returned the girls took out their dolls.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<b>B2:</b> Make effective use of the knowledge, skills, and ways of knowing from their own cultural traditions to learn about the larger world in which they live.	<b>History C2:</b> Use historical data from a variety of primary resources, including letters, diaries, oral accounts, archaeological sites and artifacts, art, maps, photos, historical sites, documents, and secondary research materials, including almanacs, books, indices, and newspapers.	<b>CE7:</b> Students should have knowledge of traditional and contemporary tool making.

**Estimated Time:** Three 20-30 minute class periods

**Lesson Goal:** To classify tools that may be useful to a man, woman, or child. To identify and learn about tools both men and women may use.

**Lesson Objectives:** Students will:

- Learn how technological advances in tools increased hunting capabilities
- Discover and learn what tools/toys children used for tasks and play
- Identify tools by their gender appropriate user group
- Participate in a traditional skills game of Kankangaq

**Vocabulary Words:** Sugt’stun Dialects

English:	PWS:	Lower Cook Inlet:
Toy		wamqutaq
Boy		tanyurraq
Girl		arnanguasaaq
Tossing Disks		kankangat
Atlatl/throwing board		nukaq



### **Materials/Resources Needed:**

- Photographs of tools (in kit)
- Access to the below websites below to display photographs on the SmartBoard (the information on the site is very extensive and should be navigated prior to the lesson)

### **Websites:**

<http://alaska.si.edu> Retrieved 1.24.13, artifact photographs from the Arctic Studies Center, Rasmussen Museum, Anchorage, Alaska. Select Sugpiaq Culture for entire collection or refine the search by using a key word.

<http://www.worldatlatl.org> Retrieved 1.24.13, video demonstration of spear throwing with an atlatl (5 min).

### **Teacher Preparation:**

- Class I: Select pictures of tools and toys provided in the kit to be used in determining the gender that most likely would use the tool or play with the toy. Pictures of toys can be found on pages 45-49 of “Looking Both Ways” and also available on the website <http://alaska.si.edu>.
- Class II: Fabric and disc (in kit) for Kankangat game
- Class III: Preparation of area for “Chuck-it” throwing skill game
- **Background Information:**
  - Women wove grass baskets and spruce root hats; worked with skins and membranes such as intestines of bears, seals, sea lions, and whales to make waterproof jackets and bags; and feathers, fur, and hair to create traditional garments. Their tools were bone and ivory needles, awls, gut scrapers, and stone knives. Women also sewed the skins onto boat frames. Women kept a sewing bag to hold scraps of fur and other sewing materials.
  - Men built boat frames and made boxes, bowls, spoons, hunting weapons, wooden hats, masks, and many other objects. They used eagle feathers in fletching arrows and darts. Men’s tools were stone and metal adzes, chisels, bone wedges for splitting planks, beaver and porcupine-tooth knives, and knives with curved metal blades (used for carving). When men took to the ocean on a hunting trip they also carried a small sewing kit to make any necessary repairs to the kayak or skin boat.
  - Iron and copper tools were used before European explores and Russian fur traders arrived in the region. Copper came from sources in Prince William Sound and along the Copper River, while iron was obtained in trade or found embedded in planks from shipwrecks that washed up on the beach.

**Opening:** In your home what type of tools does your family use and who uses them most often? Explain the traditionally distinct gender roles in Sugpiaq life by reading aloud the background. We are going to learn about Sugpiaq/Alutiiq tools and discover their use.

### **Class I:** Gender Identification of Tools

1. As a class activity, display the pictures of tools one at a time and ask the students to identify if a man or a woman would have used it. You may wish to choose a picture that will challenge their imagination, such as the spools or bobbin used by women.
2. Display all the pictures in the appropriate men and women groups for the class to review.
3. Discuss with the students how the tools were used. Refer to the reverse side of the photograph for additional information.
4. Next display the toys and ask the students to identify those played with by the girls (arnanguasaaq) and boys (tanyurraq). Since playing with toys was also a way to teach children adult tasks, ask the students to share what they might learn by playing with a specific toy.

**Class II:** Kankangat—tossing disks: Kankangaq was a traditional game in which players threw disks of wood or ivory toward a target in the center of a seal skin. Competitors tried to land their disks on the target, or to knock someone else’s out of the way. Scores were counted by the positions of the disks and tallied with wooden sticks. A complete description of the game is available in “Alutiiq Traditions: An Introduction to the Native Culture of the Kodiak Archipelago” 2009, Amy F. Steffian and Alril G. Laktonen, P. 39, as reported by Larry Matfray.

1. Form teams of four students, each to construct their target from a fabric square drawing three concentric circles.
2. Each student will decorate three disks with an approximate diameter of 3.5 cm
3. The students stand on opposite sides of the target and toss their disc; first one student and then the other. When the first team of two has tossed all their discs the score should be tallied with 3 point for the center, 2 points for the next ring, and 1 point for the outer ring.
4. The second team of two then pair off on opposite sides of the target to test their skills.
5. Play can continue for another round by changing partners.

**Class III:** An atlatl, known as a naqaq, is a throwing board that was a tool used by hunters to allow them to throw arrows, darts, and spears from a greater distance. See photographs of hunters and throwing boards on page 164 of “Looking Both Ways” or visit <http://www.worldatlatl.org> and view “How to throw an atlatl.”

Today children often use this type of tool in the form of a “Chuck-it” toy for dogs allowing the ball to be thrown a greater distance.

1. Set up a field of play, perhaps at the school football field.
2. Have students experiment by throwing a ball using only their arm and wrist action and then throw the ball using the stick.
3. Have students watch from the sideline to determine the landing spot (not where the ball bounced after hitting the ground) and mark with a red flag.
4. After the students have measured the distances, determine what method is the best.
5. Discuss what advantage the hunter had when using the throwing board. Did he need to use both hands? In what hunting environment might the throwing board be best suited?

## TOOLS – WHAT IS THE STORY? K-2 (7)

**Grade Level:** K-2

**Overview:** The students will learn that Alutiiq stories and legends are links to ancestors and past events such as a hunter’s trip, a fierce storm, or a battle waged for revenge. Stories are an important way of sharing history, values, and cultural meanings. Younger generations are provided with a sense of heritage and connection to previous generations. It is suggested by Gordon Pullar that time is circular where the past is part of the present and events from distant times continue to inform daily life and shape the future (Looking Both Ways, p.100). Myths are pathways to the beginning of time, explaining the universe and its mystical events. By using a “Quick Write” the students will be able to share their story about a prehistoric tool and how it was used. Also, encourage the students to read their stories to the class, and participate in the Alutiiq oral tradition.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
D4: Gather oral and written history information from the local community and provide an appropriate interpretation of its cultural meaning and significance.	History A5: Understand that history is a narrative told in many voices and expresses various perspectives of historical experiences.	CE6: Students should have knowledge of traditional stories and methods of teaching through storytelling.

**Estimated Time:** One 30-minute class period

**Lesson Goal:** To learn about storytelling and oral tradition through writing and sharing their story about a tool used in the Alutiiq/Sugpiaq culture.

**Lesson Objectives:** Students will:

- Listen to an elder or recognized expert tell a story.
- Write about a prehistoric tool used by the Alutiiq/Sugpiaq culture using 3 to 5 sentences.
- Share in the oral tradition by telling their story to the class.

**Vocabulary Words:** Sugt’stun Dialects

English:	PWS:	Lower Cook Inlet:
Adze	cuu’uk	cuu’uk
Spear		panak
Oil Lamp	qangihlat lampat	qangihlat lampat
Wedge		qupuisutet

**Materials/Resources Needed:**

- Display 8”x10” photographs of the following tools: adze, wedge, oil lamp, spear point (in kit)
- Tray of sand for stick drawing

**Websites:**

<http://alaska.si.edu> Retrieved 2.14.13, select Sugpiaq Culture and view tools

### **Teacher Preparation:**

- Set up picture display of tools used during the Paleoarctic Period: adze, spear point, oil lamp, and wedge.
- Invite an elder or recognized expert to share a story about what they learned as a child from listening to stories; their knowledge of tools and toys they used as a child; as well as descriptions of the tasks they performed as a child, and the importance of becoming a contributing member of the village.
- Background Information:
  - Since there was not a written account of events or books to learn from, knowledge was shared through stories, song, and dance to teach children about traditions, morals, and heritage. Often correction was given to a child in the form of a story, usually by a parent or grandparent, and was expected to be understood by the child. Stories held individual meaning for each person. There is not just one interpretation of a story as each listener takes away the knowledge that is needed to be known at that particular time. As stories were told, a “story knife” (Yupik tradition) was often used to draw illustrations. The story knife was a traditional girl’s toy used for drawing pictures on the ground or the snow. The pictures show clothing, people, houses, animals, and events. Sometimes a game was played in which others try to guess the artist’s subject. Songs accompany Snow knife stories. Traditional story knives were made of wood, bone ivory, or walrus tusk and were carved, polished, and engraved. Old knives were often ornamented with carvings of salmon, gulls, seals, and other animals, but others were simple and plain. A girl’s father or grandfather made her the knife, and were given as gifts. After the girl reached adulthood, she gave away her story knife along with her dolls.

**Opening:** You will be a TIME TRAVELER and go back in time to write a story about discovering an Alutiiq/Sugpiaq artifact.

### **Activities:**

#### **Class I: Listen and Write**

1. Instruct the students to respectfully listen and respond to the recognized expert or elder as they share their story.
2. Ask the elder to stay and listen to the stories the class will tell.
3. When using a quick write, grammar, spelling, punctuation, and sentence structure are not required.
4. Review the pictures and the information about the artifacts found on the reverse side.
5. Provide the following writing prompts, or others prompts as appropriate:
  - a. What is under my feet? (discovery of a buried Sugpiaq artifacts)
  - b. How interesting is that? (spear, atlatl, basket, adze, wedge)
  - c. I was there! (What would it be like to live in an Alaskan native village many years ago?)
6. Brainstorm as a class about writing ideas and spelling of specific words in English. Ask the elder to help the class to pronounce the Sugt’stun words.
7. Allow the students a specific amount of time to “Quick Write”.

8. Have the students draw and color a picture of one of the tools or illustrate something in their story.
9. Prior to having the students share their story, tell them about how important story telling was to the Native community (refer to the background information).

**Class II:** Story Telling by Girls and Boys

Traditionally, Sugpiaq girls would tell a story and draw pictures in the sand with a stick. The boys would tell a story about a hunt by acting/dancing, using motions such as throwing a spear, placing their hand on their forehead to shield their eyes as they looked for their prey, or paddling a kayak.

1. Have the girls tell their written story by drawing pictures in a sand tray. The illustrations (in the addendum) became common knowledge and consistently used to tell stories. Draw the illustrations on the smart board and add other ideas the girls may want to use in their story.
2. Play a game by having a group of girls try to guess the storyteller's subject.
3. Instruct the boys to act out their stories for the class. Encourage the students to watch carefully and interpret the clues given by each motion. Discuss as a class what they thought the story was about.

**TOOLS: SHOEBOX DIG: K-2 (8)**

**Grade Level:** K-2

**Overview:** This lesson allows the students to create a prehistoric archaeological site by layering tool artifacts in soil materials and then use the horizontal excavation technique on their site to locate the buried artifacts.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
A3: Acquire and pass on the traditions of their community through oral and written history.	Science F2: Develop an understanding that some individuals, cultures, and societies use other beliefs and methods in addition to the scientific methods to describe and understand the world.	CE9: Students should have respect and appreciation for their own culture as well as the cultures of others.

**Estimated Time:** Two 40-minute class periods

**Lesson Goal:** To further the student’s knowledge of prehistoric Sugpiat culture as successive groups of people who lived in the same area leaving behind buried clues about their culture.

**Lesson Objective(s):** Students will:

- Create their own prehistoric village site by layering soil and artifacts.
- Experience excavation of their site with care to preserve their finds.
- Conclude that the oldest tool artifacts are located on the bottom layer.
- Understand that not all materials survive through time.

**Vocabulary Words:** Sugt’stun Dialects

English:	PWS:	Lower Cook Inlet:
Sand		qaugyaq
Tools		piktsutet
Fishing		iqallusurluni
Hunting		pisurluni

**Materials/Resources Needed:**

- Clear shoeboxes included in the kit
- 3-4 types of soil materials (sand, dirt, small rubble, mix of dirt and vermiculite)
- Artifacts for each layer included in the kit
- Plastic drop clothes to protect work surfaces
- Plastic spoons and small paint brushes for excavation
- Master copy of “Dig Record Sheet” in addendum to lesson

**Websites:**

<http://www.archaeological.org> Retrieved 3.21.13 Archaeological Institute of America resource information and lesson plans for K-12 on various topics

<http://alaska.si.edu> Retrieved 3.15.13 pictures and information on artifact collections.

<http://alutiiqmuseum.org> Retrieved 3.15.13 video of How do Archaeologist Know Where to Dig (from home screen click on research results then on tab to view video) run time 12 minutes.

### **Teacher Preparation:**

- For Kindergarten students, it is recommended to have a teacher-led activity with students participating as directed in the building and excavation of the “shoe box” site.
- Set up work stations for site creation and excavation
- Make sufficient copies of the “Dig Record Sheet”
- Read “Basics of Archaeology for Simulated Dig Users” in the addendum of Level I lessons.
- Review Chugachmiut Time Line in the addendum
- If available, request an elder/recognized expert to read the story about the “shoe box” site being created.
- Review the “Archaeological Site Story” included within the lesson (Class I number 5).
- Newspapers
- A collection of 4 items for opening activity

### **Opening:**

Demonstrate the concept of stratigraphy in which the oldest artifacts are located in the bottom layer by placing four stacks of newspapers in the student group work area. Ask the students to arrange the newspapers with the oldest paper on the bottom. Discuss what information could be used to determine the oldest to the newest, such as dates, written content, or pictures. Inform the students that they are going to be the prehistoric Sugpiat and build our village site using layering by starting from the bottom and working up.

As an alternative, label items from 1 to 4 and ask the students to place them in order from oldest to newest. For example, this could be pictures such as a horse and buggy, Model T car, a 1940 type car, and a modern car (or 78 rpm record, 8 track tape or reel to reel, cassette tape, CD/DVD). Discuss what factors were used to determine the oldest item.

### **Activities:**

#### **Class I:**

Create the archaeological site by building a basic “layers upon layers” site using sand, gravel, and soil in a clear plastic shoebox.

1. Supply each group of students with a shoebox, soil material, and artifacts.
2. Instruct the students to build their archaeological site as the site story is read.
3. Within the site story are the vocabulary words piksutet/tools and pisurluni/hunting. Have the students repeat these words in the Sugt’stun dialect as the story is read.
4. Request elders/recognized experts to share in the activity with the class or read the site story.
5. Read the following story about the Sugpiaq/Alutiiq coastal culture and insert the tool artifacts in the layers as the site is built.

About 10,000 years ago, or 8,000 B.C., the first Native people traveled across the southern edge of the Bering land bridge and followed the coastal area. Some may have traveled by skin boat. These people were sea mammal hunters and set up hunting camps

along the coastal areas. They took shelter in skin tents, repaired their spear points, and built fire pits using rock rings (*add the first layer of sand in the bottom of the box and place the artifacts of small plastic arrows whole and broken, small pebbles for the fire ring, plastic play bricks to represent rocks to hold down the tent edges, bits of charcoal, and small bones representing food debris*).

Many years past and the coastal areas were changed by increased water levels. A new layer of material covered the hunting camp. This is now the early coastal life from 5,500-1,500 B.C. (*add a layer of gravel like material—vermiculite mixed with a small amount of soil*). Sugpiaq/Alutiiq hunters still traveled the coastal areas and left behind many tools for both marine hunting and river fishing. Families of parents and children dwelled in small animal skin tent and may have visited the area seasonally. They slept around a stone hearth and used tanned hides for bedding (*add small microblade points, barbed harpoon, spear points, oil lamp, needle, bone fishing hook, adze, hammer stone, wedge, animal remains-bones were from sea otters, small whales, seals, sea lions, porpoises, auklets, murrets, ducks, salmon, cod, halibut, shellfish, and bears*). The weather began to change to a colder and wetter climate late in this period and the Native people developed a new form of housing. They dug shallow pits and erected wooden frames and covered them with sod (*add small pieces of wood*).

As people continued to inhabit the coastal area more soil material covered the village area. We are now in the Middle Era from 1,500 B.C. to 1,100 A.D. (*add a layer of dirt only half as thick as the previous layers*). The area is only sparsely populated perhaps due to the climate related to glacial advance. Many stone and bone tools are found at village sites along with ivory carvings. People traveled between summer and winter houses to take advantage of the resources available. Winter village provided access to sea mammals, marine fish, and birds. Summer camp harvested salmon at the mouths of the bay or lakes (*add barbed harpoon, toggling harpoon, slate point, stone weight for bottom fishing, clam and mussel shells, ulus, stone weight for bottom fishing, ivory carvings*).

With the sparse population of this site only a small amount of soil covers the area (*add the other half of the soil*). We are in the Precontact era from 1,100 A.D. to 1760 A.D. where many changes are taking place. Consider that the latest date is only 252 years ago and those Native Villagers were your Great, Great, Grandparents. They lived in larger houses for the extended family and continued to live a subsistence life style. Trading with other villages was common. Many similar tools are still being used (*scatter pieces of a broken point, a barbed harpoon, labret, arrows, and beads*).

6. Now that the site is constructed, ask the students to speculate as to what could be found on the top layer from their village in the present time.
7. Instruct the students that they will trade sites in their next class and begin the process of excavation.

## **Class II:** Excavation



Now it is up to you to discover what you have left behind. What do you think is hidden in the archaeological site?

1. Distribute “shoe boxes” to a different group of students along with a “Dig Record Sheet”, spoon, and small paintbrush.
2. Instruct each group to carefully remove each layer of soil with the spoon and brush away soil around the artifact before collecting it from the stratigraphy site.
3. Students should place the artifact on the Dig Record Sheet according to the layer excavated.
4. When the excavations are complete, ask each group to share what they have discovered.
5. Ask the students what might happen if they just dug a large hole all the way to the bottom and scooped out everything at once? Are all the layers mixed together?

### **Class III:**

As an alternative to building a layered site, use individual pre-assembled one layer shoebox with artifacts.

1. Distribute each individual shoebox to small groups of students.
2. Instruct the students to empty the entire shoebox on a large piece of butcher paper.
3. The students should identify as many artifacts as possible by matching their finds with photographs of artifacts displayed in the classroom from the heritage kit.
4. Ask the following questions:
  - a. What type of soil do you have?
  - b. Name the items you found. If unsure, make a guess about what you think it is.
5. After all the teams have had a chance to respond, read the site narrative to the class. Ask the students in what time period they believe the artifacts were used.

# Shoebox Dig

*Shelby Brown*

THE ARCHER SCHOOL FOR GIRLS  
LOS ANGELES, CALIFORNIA

**Acknowledgements:** Shoebox digs and other small-scale excavation projects have been developed, refined, and passed on by many teachers over the years. Examples can be found in books, on the web, and in teachers' personal collections of lesson plans.

This dig is based on one conducted with the second grade students of Fairburn Avenue Elementary School in Los Angeles and refined with the help of the participants in the 2006 AIA Teacher Session on shoebox archaeology at the AIA/APA convention in Montreal and the October 2006 teacher session at The Archer School for Girls in Los Angeles. Many thanks to the students and teachers for their enthusiasm and helpful suggestions!

This dig also owes a great deal to dozens of fellow excavators who have brought archaeology into schools. AIA member Craig Lesh polled archaeologists about their goals in introducing young students to the discipline, and this lesson attempts to address some of their most pressing concerns about teaching the importance of context.

## OVERVIEW

Students will become archaeologists on a small scale and uncover the stratified layers in a shoebox. This is a manageable, compact, and fun (although sometimes messy!) dig for older elementary school children that can be modified for middle school. Unlike the other small-scale AIA digs (Layer Cake Archaeology and Transparent Shoebox Dig), which allow younger students to see the archaeological layers of a site before digging them, this is a blind dig more like a real excavation. Students excavate in teams, uncover three or four layers, record their findings, and answer questions that reveal how carefully (or carelessly) they served as excavation supervisors and how well their digging strategies worked. Since archaeologists use the metric system, the teacher may incorporate metrical calculations into the lesson.

The Shoebox Dig teaches basics of archaeology, the logic of horizontal excavation, the nature of stratigraphy, and the importance of keeping records and preserving the context of finds. The artifacts used in our example are simple and

easily obtained, and they are not representative of genuine cultures. They permit students to focus on observation and analysis and help them avoid jumping to conclusions based on cultural cues. Alternatively, teachers may choose to add culturally specific simulated artifacts, replicas, or laminated images of real artifacts to relate the lesson to cultures students are studying in class.

## GRADE LEVELS

The dig is designed for third graders and older elementary ages. To adapt the dig for use by middle school students, the shoe boxes can be modified so that they are not all identical. Each older team is then responsible for an area of the site, and the whole site will not be completely comprehensible until all the teams join forces to discuss and interpret their findings.

## GOALS

Interdisciplinary goals are to

- help students practice transferable skills of observation, critical thinking, inquiry, and hypothesis-testing applicable to many disciplines, including science, math, social science/history, art, and English.
- permit teachers to make connections across disciplines and engage in kinesthetic learning, including excavating, presenting orally, writing, listening, and drawing (translating three dimensions into two).
- illustrate the importance of context to the meaningful interpretation of data.
- promote teamwork, sharing ideas, academic honesty, and building on the past work of others.
- show the distinction between observations (the discoveries we make) and inferences (the stories we make up).
- engage students in thinking about multiple interpretations.
- allow for design flexibility, so that teachers can meet their own classroom's needs.

Archaeological goals are to

- introduce principles of stratigraphy and make excavation strategies (digging horizontally and excavating one layer at a time to preserve context) clear and relevant.
- show that our knowledge of the past is incomplete and illustrate how some of its gaps came to exist.

- Beads of different types
- Fake "gems"
- Dried pasta
- Marbles

**Excavation tools**

- Spoons (excavation tools)
- Containers for excavated dirt
- Small sieves
- Small plastic bags to hold the artifacts from each layer
- Waterproof black markers to label the bags
- Pencils
- Brushes
- Top plan
- Record sheets
- Clipboards
- Artifacts and/or laminated images of artifacts
- A top plan for each layer: a sheet of graph paper with a square or rectangle already drawn on it representing the excavation square
- A record sheet for each layer, designed by the teacher and requiring (in a simple version) a list of artifacts found in each layer, or (in a more complex version) a description and sketch of each artifact (see samples)

**Recording is essential**

The teacher should design his or her own top plans and record sheets based on the dig goals, the age and number of students, and the number and type of layers and artifacts. See *Sample Record Sheets 1 and 2* for full-page samples. In the particular dig described here, it can be confusing to find two different types of soil, side-by-side, on top. Showing students what to look for can be helpful; thus the sample record sheet should be emended as follows to clarify the layers:

Record Sheet      Box # \_\_\_\_\_      Team# \_\_\_\_\_

LAYER A (top left/west, soil)

LAYER B (top right/east, colored soil)

LAYER C (middle, soil with birdseed)

LAYER D (bottom, sand)

**CLASS TIME**

The project takes the students at least several hours and requires several adults to remind them not to dig holes with their spoons and to record properly. It will take more time and require more adult supervision if the teacher allows everyone to rotate through needed roles on the team and gives each student a chance to dig. Cleanup takes between a half hour

and an hour. Discussion of the dig and follow-up with questions and answers should take another hour.

**PROCEDURES****Introduce archaeology and the dig**

The class learns basic rules and procedures of archaeology. See *Basics of Archaeology for Simulated Dig Users*.

**Introduce the site**

The teacher should introduce some finds at the site and then have students excavate and infer the rest of the story. Explain how archaeologists know about the site (perhaps through old records and surface survey). The teacher might begin the dig by revealing several finds that have turned up in a farmer's field in this area. These artifacts should reveal something about the nature of the site, and students should discuss what they expect to find and generate hypotheses to test as they dig. The teacher may make some of the finds seem contradictory, and these should lead to discussion of multiple uses of a site or changes in activities at the site through time.

- The teacher should stress how important it is for archaeologists to separate observations of material remains from inferences (invented stories about the finds).

The ultimate story of the site the teacher has in mind should involve simple examples of cultural change (people who eat popcorn and live on a sandy coast are succeeded, once the sea has receded, by people who eat fast food and live on soil instead of sand; artifacts that include small plastic weapons and coins are followed by ones that include peace symbols and . . .). The story can be modified based on available artifacts, the students' ages, and the degree of complexity desired in the dig site.

*Sample (ridiculously simple) story*

*Bottom layer D (sand): artifacts include popcorn, plastic gems, one marble. If possible, arrange gemstones in a circle to reveal the pattern they may have formed in a necklace or bracelet. Do not explain the marble; students will draw their own conclusions later.*

Long ago there was a sandy desert in this part of the world. The sun was very hot, and the people who lived in the desert used to make popcorn by putting the kernels out on hot rocks. The popcorn-eaters did not use money; rather, they traded jewelry for the corn grown by farmers who lived far away near a river (where corn could grow because there was dirt and water instead of sand!).

*Middle layer C (soil mixed with birdseed): artifacts include coins.*

After many years something very upsetting happened. The farmers stopped growing popcorn! They started producing birdseed, AND they wanted money for the seeds, too—not

jewelry. The popcorn-eaters tried to adapt. But they had very little money and they really hated to eat birdseed. "What do they think we are, birds?" they said. They became so discouraged that they moved their whole village 100 miles to be near some other farmers who still grew popcorn and were willing to trade. The popcorn-eaters left behind the birdseed they hated, and money, too.

The whole area was abandoned for a while.

*Top layer A (left/west) (soil): artifacts include plastic bugs and another marble exactly like the one in layer D.*

*Top layer B (right/west) (soil mixed with sugar crystals): artifacts include dried pasta.*

Long after the unhappy popcorn-eaters left, the far-away river changed its course and brought water to the desert. The dry desert became green. Now there were dirt and grass and trees. Two new groups of people moved into the area. They lived side-by-side, but they lived their lives in very different ways. For example, one group liked to eat bugs, and the other, pasta. One group liked sugary sweets, while the other did not.

#### Divide students into teams and prepare to dig

The teacher reminds students that archaeologists would not dig just to "find things," but rather to interpret someone's culture and way of life. On a real dig, nothing would be removed at all until it had been drawn, photographed, and recorded. Every dig destroys as it uncovers.

- The teacher should tell the students how many types of artifacts (not the total number) they should expect to find and the number of layers (four, since the top layer is actually in two parts side by side).
- Students should note that boxes have numbers and one side is labeled LEFT/WEST. Each layer is designated by a letter.
- Each team has 4–5 students (more only if necessary).
- Team members or the teacher decide on roles (excavator, top plan drafts person, artifact recorder, artifact bagger, sieve specialist, overseer, and so on). The teacher may allow team members to rotate through different roles so that everyone has a chance to dig. If everyone does not, it should be emphasized that all contributions to a dig are valuable and result in the final publication. The goal is not just to find artifacts, but to interpret the site!
- Each team receives a top plan and a record sheet for each layer.
- Team members (ideally) take turns digging, drawing, recording finds, and putting artifacts into correctly labeled bags. When everything has been excavated, the teams present their finds and conclusions to the class.
- The students answer the teacher's questions about the artifacts and come to conclusions about the people who lived in the different layers.

#### PITFALLS

Also see Dig Design Tips in *Basics of Archaeology for Simulated Dig Users*.

Sand and loose potting soil can be messy and, even when packed down tightly, are far easier to remove than the hard soil at a real site. Students need to be motivated to dig carefully, or the lessons and rewards of stratigraphic excavation will be lost. If the layers contain too many artifacts, these may become confusing and will be difficult to record, yet too few artifacts mean that not everyone can find something. The team members need to know that all the members of a dig team are contributing, whether they are digging or recording, finding artifacts or not, and that it is not the main goal of this (or any) dig just to "find things." Everyone shares in uncovering and interpreting the puzzle that is the site.

#### ASSESSMENT

It can be difficult to grade an excavation project on results, since it is acceptable to make mistakes and learn from them. The teacher should design a series of questions about the layers that students answer in teams, so that careful observers and diggers can be rewarded for their understanding of collaborative teamwork, their careful stratigraphic analysis, and their attention to detail. The questions should help students recognize the value of the information they can gain from artifacts evaluated in context (see below).

#### SUMMING UP

All the teams come together to share their conclusions and show the accuracy and care they maintained during excavation. Students should start by discussing how information can be lost by carelessness.

#### Questions to ask students

The teacher should design a series of questions to test how carefully students excavated and how well their digging strategies worked. The questions should help students recognize the knowledge they gain from evaluating artifacts in context. Individual teams will answer some questions while the whole class will answer others. If the contents of the shoe boxes are different (because they have been seeded with different artifacts), then discussing them all together will reveal more about the site than any one box can. The teacher should then ask groups to present their different finds and draw conclusions.

#### Sample questions

- What did the people who used shiny gems eat?
- Did the people who ate bugs use green stones, or metal pennies?
- Did the people who ate popcorn live in this area before or after the pasta-eaters?
- What one artifact did both the pasta-eaters and popcorn-

eaters share? (Marble.) Can you come up with an explanation for how the two groups came to use the same object? (Possible inference: the later people found a marble left by the earlier people and used it, too.) How might the object have been used? (Here it will ideally become clear during discussion that sometimes there is just no way to find out the answer using the evidence at hand. What might further digging uncover to help answer the question?)

- What kind of jewelry was made in layer D? (Were gems or beads in the soil arranged in a patterned necklace or bracelet?)
- What kinds of pasta did the pasta-eaters eat?
- How many different kinds of bugs did the bug-eaters eat?
- How careful was your group in keeping the layers separate?
- What surprised or interested your team members the most?

These questions are not particularly deep; they merely require the excavators to observe closely. In a more complex dig, or in one using laminated images of artifacts that represent a real culture, the students can first develop hypotheses about what finds they will excavate based on the surface finds, and consider after excavation what they may discover if they dig further and uncover more of the same site.

#### **FOLLOWING UP**

As a subsequent activity, students can be asked to design (on paper) the possible stratigraphy under their school building. They can imagine or actually research, with assistance, life at the school site before the school was built, and depict the

resulting material remains in layers shown in cross section under the present day surface. Their stratigraphic drawings can range in size from notebook paper-size to the height of the classroom or hallway wall.

In the real world, a dig ends with questions that are still unanswered and reconsideration of hypotheses that were not validated. Older students may continue their analytical thinking by studying the AIAs *Mystery Cemetery*, drawing conclusions about the site (Map 1 and photographs) and then checking their ideas through further excavation (Map 2).

#### **RESOURCES**

See *Basics of Archaeology for Simulated Dig Users* and *Resources National Standards for Simulated Dig Users*.

Coan, J. 1999. *Digging into Archaeology: Hands-On, Minds-On Unit Study*. Pacific Grove: Critical Thinking Books & Software.

Cochran, J. 1999. *Archaeology: Digging Deeper to Learn About the Past*. Nashville: Incentives Publications, Inc.

McIntosh, J. 2000. *Archeology*. London: Dorling Kindersley Ltd.

Moloney, N. 1997. *The Young Oxford Book of Archaeology*. Oxford: Oxford University Press.

White, J.R. 2005. *Hands-On Archaeology: Real-Life Activities for Kids (Grades 4–10)*. Waco, TX: Prufrock Press.

Online:

"Doing Archaeology in the Classroom: A Sandbox Dig"  
<http://www2.sfu.ca/archaeology/museum/classroom/sandbox.html>

**DIG RECORD SHEET**

BOX #

TEAM #

Recorders' Names:

---

---

---

---

List of artifacts in LAYER \_\_\_\_\_

List of artifacts in LAYER \_\_\_\_\_

List of artifacts in LAYER \_\_\_\_\_

List of artifacts in LAYER \_\_\_\_\_

# Activities for Grades 3-6

## TOOLS: YOUR VILLAGE: 3-6 (1)

**Grade Level:** 3-6

**Overview:** Through mapping of their community students discover how tools have modified their village over time to provide a habitable location.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<b>E2:</b> Understand the ecology and geography of the bioregion they inhabit <b>E5:</b> Recognize how and why cultures change over time.	<b>History A1:</b> Understand chronological frameworks for organizing historical thought and place significant ideas, institutions, people, and events within time sequences.	<b>G3:</b> Students should have knowledge of geographic landmarks, safe shelters, and resources maps in their area: hunting sites, gathering areas, fishing locations, and trapping sites.

**Estimated Time:** Three 40-minute class periods and one field trip around the village

**Lesson Goal:** To learn about the historical background of the community, natural resources, and use of tools to create a habitable area.

**Lesson Objectives:** Students will:

- Map their community as it is today, including mountains, forests, hunting areas, and shoreline.
- Recognize what made a desirable site for a barabra
- Identify resources and tools that were used to build a house
- Use a timeline to portray what changes occurred in the community

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
House	barabara	barabara
Tools		piktsutet

**Materials/Resources Needed:**

- Map making material such as butcher paper
- 3 x 5 index cards
- Small plastic collection bags
- Tongue depressors or popsicle sticks for house construction
- Archaeology and Memory DVD (in kit) an elders visit to the Aialik Bay site (20 minutes)

**Websites:**

<http://www.google.com/earth> Retrieved 1.28.13, aerial photograph of community.

**Teacher Preparation:**

- Make arrangements for tribal elders to participate in the field trip and share their knowledge of the community and life experiences in the classroom.



- Review Archaeological Timeline in the addendum to this lesson to organize data for a horizontal construction of the time line.

**Opening:** Show the DVD about the Aialik archaeological site. Open with a discussion regarding why this site was chosen, the artifacts that were discovered, and other facts about the site inhabitants.

**Class I:** Semi-subterranean home

1. Provide the students with a plastic bag and instruct them to collect small twigs, grasses, and twine to be used in constructing a barabara.
2. Using the collected materials, have the students construct a scale model semi-subterranean and barabara dwelling.
3. Have the students write a paragraph description about the materials and tools used by their ancestors to construct a house as well as where the resources were found. For example, if the house had a window, what material was used to make it and where did that come from?

**Class II:** Walking Tour

1. Remind each student to bring a notebook to record information that will be used when mapping the community.
2. Take a walking tour through the community accompanied by an Elder or recognized expert.
3. Focus on historic buildings, commercial businesses, house locations, churches, hunting areas, and natural resources and invite the Elder or recognized expert to share their knowledge regarding the community and the changes they have seen over their lifetime.

**Class III:** Mapping Project

1. Back in the classroom, have the students draw a community map. This can be an individual project or a three dimensional, tabletop class project.
2. To assist with mapping, project an aerial image of the community using the Google Earth website.
3. The students should include a “Key” on the map with area resources, commercial building, residential area, museums, and tribal offices. A map inset can also be used to note specific information about a building (i.e., built in 1902, former occupants, historic significance).

**Class IV:** Change

1. As a class project, assign each student a specific date on the timeline to add information of events that had an impact on the community. Use events such as: Exxon Valdez oil spill, 1964 earthquake, and contact with Russians and other explorers.
2. Distribute 3 x 5 index cards to each student to record the information about an event (photographs can also be included).
3. Use butcher paper or similar material to create the timeline.
4. As a guideline, information from the Chugachmiut Timeline (in the addendum) can be used and expanded upon to include information about your community from 1994 to the present.

**Chugachmiut Timeline**  
Begun December 1, 2009  
Revised 2/17/10

***Contributors:***

Diane Selanoff  
Andy Selanoff  
Julie Selanoff  
Nick Tenape  
Marjorie Christiansen  
Leona Olsen  
Helen Loescher

Tom Anderson  
Don Kompkoff  
Virginia Lacy  
Kathy Brewster  
Jean Huntsman  
Susan Labelle  
Jackie Ladd  
Pat Partnow

*Date Event*

Before 10,000 BP:	Pleistocene (Ice Age); naming of Chugach
10,000 BP to 1700:	Professional weatherman (Ilaluqta), traditional dancing and customs, religion (Raven), good and bad shamans, healers; transportation (qayaqs), traditional education, traditional houses (barabaras); wars (with Eyaks, Tlingits, Ahtna); trade with Eyaks, Tlingits, Ahtnas, Kodiak and Alaska Peninsula Sugpiat
1741:	Bering's ship the St. Peter visits Kayak Island, with naturalist Georg Steller on board
1774-1791:	Spain sends expeditions to Alaska; Malaspina Glacier and Valdez named during those voyages
1778:	James Cook enters Cook Inlet, visits Kenai Peninsula
1780s:	Sea otter hunting for the Russian American Company begins in PWS; importation of tobacco, alcohol, metal, guns, beads, cloth, other trade goods; Russians bring Russian Orthodoxy
1791:	Vancouver explores Cook Inlet; does not see Kachemak Bay (perhaps it was foggy?)
1793:	Fort Constantine on Hinchinbrook Island built
1794:	Baranov builds the first ocean-going vessel at Voskressenski (Resurrection) Bay
1799:	Baranov sails with a flotilla of Kodiak baidarkas into and past Prince William Sound on his way to establish a settlement at Sitka
1812 – 1841:	Fort Ross in California is operated
1826:	Alexandrovsk (fort, later odinochka) at today's Nanwalek appears on maps; Sugpiat moved there from Aialik
1838:	Smallpox epidemic strikes Prince William Sound and the Kenai Peninsula; Sugpiaq confidence in shamans said to decline in the wake of the epidemic
1840s (check):	Russians introduce gardens (potatoes, cabbage, turnips); coal mining, fish salteries
1853:	Oil seeps in Cook Inlet are discovered by Russian-American Company employees
1857:	Coal mining begins at Port Graham
1867:	Treaty of Cession: US purchase of Russian America
1868:	Measles epidemic in Prince William Sound
1870s to 1960s:	Revenue cutters, later Coast Guard, supply law, medical help, policing to Alaska's villages
1880 (about)	First American canneries and salteries established in the region; influx of immigrants begins
1880:	First mention of Tatitlek village in US Census
1880-1867:	Old Chenega inhabited (first reported in the Census of 1880)
1881:	Influenza epidemic strikes Seldovia, killing nearly all children under two
1884:	Organic Act passed, establishing civil government in Alaska
1885-1894:	US Bureau of Education maintained public schools and "contract" schools (contracted to various churches that ran the schools) throughout Alaska
1890:	First large corporate salmon canneries built in Alaska
1894:	All public schools in Alaska were maintained by the US Bureau of Education (eliminating church "contract" schools)

- 1898: Ellamar Mining Co. formed NW of Cordova for copper mining.
- 1898: Height of gold rush; more immigrants to region and passing through region
- 1900: Tuberculosis is so widespread among the Chugach that most people died of it by the age of 50
- 1900: Ellamar Copper Mine sent its first shipment of copper
- 1900: Alaska communities given the right to run their own schools
- 1900: Fort Liscum established near Valdez; closed in 1922
- 1900: First exploratory oil well is drilled in Cook Inlet
- 1900: Tuberculosis reported as prevalent among Chugachmiut
- 1904: Chenega church built
- Early 1900s: Smallpox epidemic decimated Nuchek
- 1900-1921: Post office at Ellamar
- 1904: WAMCATS (Washington Alaska Military Cable and Telegraph System) begins to lay submarine cable between Seattle, Sitka, and Valdez, linking Alaska to the Outside
- 1905: Nelson Act passed; as a result territorial schools were opened which served only “White children and children of mixed blood leading a civilized life;” federal schools continued to serve Native children; Native languages are forbidden and their use is punished in schools; parents are encouraged not to teach their children the indigenous language
- 1906: Native Allotment Act passes: first opportunity for Natives to obtain land under restricted title
- 1910 (about): Large commercial fish traps built
- 1911: Railroad at Cordova into Interior (Kennicott Copper Mine)
- 1911: US, Canada, Russia, Great Britain, and Japan sign fur seal/ sea otter agreement to preserve resources in the North Pacific; end of sea otter hunting
- 1912: Mt. Katmai eruption
- 1912: Port Graham cannery (Fidalgo) built
- 1913: First Alaska Territorial Legislature convenes in Juneau
- 1914: Surveying for railroad from Seward to Fairbanks begins
- 1918: Influenza pandemic
- 1920s – 1940s: Fox farming, mining, trapping, fishing
- 1921: Post office established at cannery at Portlock; there is a cannery, school, sawmill, and ore mining
- 1923: President Warren G. Harding drove golden spike near Nenana to mark the completion of the Alaska Railroad
- 1924: Congress extends citizenship to all Indians in the US
- 1926: Alaska Native Townsite Act allows Natives to obtain restricted deeds to village lots.
- 1926: Benny Benson in Seward designs the Alaska flag
- 1928: Court case resolves the right of Native children to attend public school
- 1929-1945: Great Depression; Civilian Conservation Corps (CCC) builds a number of roads and paths between and within communities in the region
- 1931: Native students’ education was transferred to the Office of Indian Affairs; English-only rule continues
- 1930s: Saltery near Cordova on Evans Island

1930s: Chugachmiut had motorized boats  
1930s: Pneumonia epidemic in the region  
1930s: Polio epidemic  
1930s: Measles and other epidemics; Makari Chimivistky rescued children from epidemic and raised them at Canoe Pass  
1930s: Anesia Anahonak, midwife/healer; Father Nick Moonin;  
1930s: Nick Mumchuk (an advisor or “aceggtaq”), Tim Ukatish and Efrem Moonin establish Native Village of Port Graham  
1936: Congress extends the Indian Reorganization Act to Alaska.  
1936: Nell Scott of Seldovia becomes the first woman elected to the Territorial Legislature  
1936: John Levshakoff is chief of Tatitlek  
1838: Kennicott Mine closes  
1941-1945: World War II; black-out curtains, submarine drills  
1942: BIA begins to run schools throughout Alaska  
1945: Governor Gruening signs the Anti-Discrimination Act  
1945-1950: Peak of tuberculosis epidemic in Alaska  
1946: Mt. Edgecumbe boarding school for Native high school students opens  
1950s: Polio epidemic  
1950s: Soda and other sugary drinks become available; diabetes skyrockets  
1957: Swanson River oil field begins production  
1959: Port Graham cannery burns down  
1959: Alaska becomes a state; fish traps are abolished  
1960s: VHS radios, telephones, refrigerators, freezers (electrification), indoor plumbing, HUD houses come to villages  
1964: Great Alaska Earthquake, March 27  
1964: BIA housing built in region  
1966: Alaska Federation of Natives organized  
1971: Alaska Native Claims Settlement Act (ANCSA) passed by US Congress  
1971: Carroll Kompkoff chief of Tatitlek Corporation; other leaders: Chief Charles Selanoff, Sergius Moonin, Ed Gregorieff, Gary Kompkoff, Father Nick Kompkoff, Lydia Robart, Walter Meganack, Sr.  
1971: State Operated School system (SOS) runs rural schools  
1972: An amendment to the State Constitution brings about the Limited Entry system of commercial fisheries  
1974: Construction begins on TAPS, Valdez at terminal begins boom  
1975: State Operated School System abolished and schools are run by Regional Educational Attendance Areas (REAs)  
1977: First oil flows through the pipeline  
1980: ANILCA passed by US Congress  
1983 (approx): Ratnet comes to rural Alaska  
1984: Chenega Bay (village) rebuilt on Evans Island  
1989: Exxon-Valdez Oil Spill, March 24  
1990: Port Graham cannery burns a second time  
1994: Federal trial results in \$5 billion verdict in Exxon Valdez case

## TOOLS: HOW DID THAT GET HERE?: 3-6 (2)

**Grade Level:** 3-6

**Overview:** Through the creation of a regional map, students will identify resources and the trading goods in the Sugpiaq culture.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
E4: Determine how ideas and concepts from one knowledge system relate to those derived from other knowledge systems.	History B1b: Comprehend the forces of change and continuity that shape human history through the following persistent organizing themes: b. human communities and their relationships with climate, subsistence base, resources, geography, and technology.	SS1: Students should be taught the appropriate use for subsistence equipment and identify for flaws; Be able to identify appropriate equipment for tasks.

**Estimated Time:** Two 50-minute class periods

**Lesson Goal:** To gain knowledge about resources used for trade and the tools made from those resources.

**Lesson Objectives:** Students will:

- Identify the differences in materials and designs used in tools from different areas
- Map a basic trade route
- Identify the locations of specific resources used to make tools, such as obsidian, chert, flint, coal, metal, and copper

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
Trade		cimulua
Trading		cimutarluta
Changed		ciimaq

**Materials/Resources Needed:**

- Laminated photographs of tools with information noted on the reverse (in kit)
- Blank map of Alaska including areas of Russia and Japan (master copy in kit)
- Cultural map (in kit)
- Display of raw materials (in kit)
- Peanut butter, bread, can of soup, kindling, loose tea
- Basket
- Smooth rounded rocks

**Website:**

<http://alaska.si.edu> Retrieved 1.30.13 Select 'Sugpiaq Culture'  
<http://pubs.usgs.gov/bul/b2156/b2156.pdf> Retrieved 5.14.13 Alaska mineral deposits  
[http://www.dggs.alaska.gov/webpubs/dggs/mr/text/mr191\\_06.pdf](http://www.dggs.alaska.gov/webpubs/dggs/mr/text/mr191_06.pdf) Retrieved 5.14.13 minerals

**Teacher Preparation:**

- The evolution of tools over time can easily be seen as implements are displayed in a series with the oldest tool made with locally available material, then regional trade items, metal items following contact with the West (with the exception of some copper from the Prince William Sound area), and finally plastics.
- Review the above website under ‘Sugpiaq Culture’ and select tools to highlight
- Peanut butter, bread, can of soup, kindling, and loose tea to demonstrate the necessity of the proper tools.
- Display the Cultural Map (included in the kit)

**Opening:** Demonstrate the necessity of tools

Ask the students to perform common tasks without the use of a tool.

1. Spread peanut butter on a slice of bread
2. Open a can of soup
3. Start a fire with tinder/kindling
4. Warm a cup of tea

Next, provide the students with the appropriate tool.

1. Knife
2. Can opener
3. Fire Bow (in kit) demonstrate how a fire bow is used without starting a fire
4. Cooking basket (pretend) and rocks

Follow up the activity by discussing why tools were necessary for the development of the Sugpiaq culture.

**Class I:** Map Resources

1. Distribute the blank map and ask the students to label areas according to the language divisions. The island of Japan should be labeled Ainu and Russian areas as Even, Koryak, Chukchi, and Itelmen (Fitzhugh, William W. and Crowell, Aron (1988). *Crossroads of Continents Cultures of Siberia and Alaska*. Washington D.C., Smithsonian Institute Press. page 10)
2. Label the map with the resources, both food and materials, available in each area. An internet search of mineral deposits in Alaska will provide information about various mines throughout the area. Also view these websites:  
<http://pubs.usgs.gov/bul/b2156/b2156.pdf> and  
[http://www.dggs.alaska.gov/webpubs/dggs/mr/text/mr191\\_06.pdf](http://www.dggs.alaska.gov/webpubs/dggs/mr/text/mr191_06.pdf)

**Class II:** Exchange of Goods

1. Compare the traditional Sugpiaq tools with the resources available to them. Discuss which tools are made of items that the Sugpiaq people must have traded for, such as the antler hafts or cutting tools.
2. Discuss what goods the Sugpiaq would have used in cimulua/trade. For instance slate tools, otter pelts, sea mammal oil, seal skins, ivory, and wood utensils.
3. Indicate ancient cimulua/trade routes used to exchange goods. Also consider that a group of traders did not traverse the entire distance between villages and would meet in a specific area (View the trade route map from Fitzhugh, W. and Crowell, A. (1988). *Crossroads of the Continents Cultures of Siberia and Alaska*. page 236).
4. Discuss how the exchange of goods and technology may have influenced the Sugpiaq culture. For instance, accumulation of goods such as dentalia shells and beads indicated

wealth, use of caribou hides for sleeping mats, and dyes. Also, tool implement technology ciimaq/changed as knowledge of throwing boards and harpoons spread across the area (see pages 160-161 of Crossroad of the Continents cited above). Russian cimulua/trade goods changed hunting and cooking techniques with the introduction of tea, guns, pots, kettles, and knives.

5. Use the above website and compare the same tool used by a trading neighbor with that of the Sugpiaq.
6. In conclusion, refer back to the original trade map and eliminate trade items from traditional village life. Discuss what type of items would remain for daily use.



## TOOLS: MAKE A SLATE TOOL: 3-6 (3)

**Grade Level:** 3-6

**Overview:** The students will test their skills at making a ground slate tool. Slate was a readily available resource that could be worked into blades, knives, spears, and points. The crafting of the tool required the skill of selecting the best piece of slate with few visible layers, a hammerstone or piece of antler or wood for striking the edge when percussion flaking to roughly form the point, and a rounded-end tool such as an antler tine for pressure flaking when removing small flakes to refine the shape of a point.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
D2: Participate in and make constructive contributions to the learning activities associated with a traditional camp environment.	History B1b: Comprehend the forces of change and continuity that shape human history through the following persistent organized themes: human communities and their relationships with climate, subsistence base, resources, geography and technology.	CE 7: Students should have knowledge of traditional and contemporary tool making.

**Estimated Time:** A field trip and two 40-minute class periods

**Lesson Goal:** To manufacture a traditional tool using the traditional skills of the Sugpiaq/Alutiiq people.

**Lesson Objectives:** Students will:

- Learn the traditional techniques to make a slate point
- Discover the patience and skill required by the Sugpiaq/Alutiiq craftsmen when making points.
- Become familiar with the tools used to shape points.

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
Slate		unialnuq yaamaq
Point/arrow		cigniq

**Materials/Resources Needed:**

- Safety goggles
- Light weight cotton gloves
- Long-sleeved shirts
- Hammer stone and slate (collected on field trip)
- Previously collected slate pieces suitable for making a point
- Cups for water and sand
- Twine and scraps of cloth
- Slate point photograph

**Website:**

<http://www.oplin.org/point> Retrieved 2.7.13 'What's the Point': identification of flint artifacts and blade design terminology.

### **Teacher Preparation:**

- Review the above web site and 'point' terminology.
- Collect pieces of slate for student observation.
- Arrange a field trip to a suitable destination to readily find slate.
- Display a photograph of a slate point or blade (included in the kit)
- Set up a work area using newspaper and pieces of corrugated cardboard to protect the work surface.
- Consider taking pictures or creating a video of the progress through each phase of slate point making.

**Opening:** Try your skill at slate grinding. Slate is a plentiful raw material and can be fashioned into a variety of tools. In pre-contact days slate was the most effective blade material available. The Prince William Sound peoples developed and perfected slate blades approximately 500 years before their neighbors. These blades became one of their common trade items. In addition to the ulus and double-edged knives used to process subsistence foods, the Sugpiaq people ground lances, bayonets, and arrows for hunting, and fashioned beads and labrets from slate. (Note: Labrets were ornamental facial 'plugs' worn in holes pierced below the mouth – See Fienup-Riordan, A. (2007). The Way We Genuinely Live p.321.)

### **Class I:** Field Trip

1. Prior to the field trip, review the steps in making a slate point. Each student should make a list of the materials needed.
2. Provide each student with a collection bag for the items needed.
3. Have several pieces of slate available for the students to observe and study the quality of the slate required to make a point.
4. Go on field trip

### **Classes II and III:** Making a Slate Point

Prior to starting the project, have the student work through the interactive activities on the above mentioned website, and note the vocabulary used in describing a point. This could be accomplished as a class activity.

Each student should wear gloves and a long sleeved garment and use eye protection when working with the slate.

When giving the instructions, integrate the Sugt'stun vocabulary words and ask the students to repeat the words.

1. Select a piece of **SLATE**/slate. There are many different types of slate, and not all slate is suitable for tool production. The ideal material is hard with few visible layers. A good way to test slate is to break it into pieces and observe how they fall apart. Choose a thin sturdy fragment, one that is internally cohesive.
2. Use a hard beach cobble (a water rounded rock) to chip your thin leaf of **SLATE**/slate into a rough **POINT**/point form – working along the edges. Another way of creating a

rough tool, particularly if you wish to make a lance, is to saw the slate with a hard, sharp rock. A flake from a beach cobble works well as a saw. With the flake, wear grooves into the slate from both sides and then gently snap the pieces apart along the groove.

3. Use a hard, flat beach rock to grind a smooth surface on both faces of your **POINT**/point. Keep the **POINT**/point flat as you grind. Water and a small amount of beach sand make a good lubricant and will speed the grinding process. Keep grinding until you have a smooth flat surface. Try to remove any nicks or indentations in the slate.
4. Sharpen the edges of your **POINT**/point by grinding at an angle. Turn the tool over to grind both sides of each edge. This will create a bevel (a v-shaped edge) that can be sharpened and resharpened.
5. Have students test the tool's ability to cut through twine, paper, and scrap of cloth and record their results.
6. Review the process and success of making a usable **SLATE**/slate tool.
7. Have students create a display of the slate points that include captions regarding methodology and cutting ability.

**TOOLS: FORM AND FUNCTION: 3-6 (4)**

**Grade Level:** 3-6

**Overview:** By observing the form/shape of tools from the past, students will be able to make predictions about the function of an unknown artifact.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<b>B2:</b> Make effective use of the knowledge, skills, and ways of knowing from their own cultural traditions to learn about the larger world in which they live.	<b>Science E1:</b> Develop an understanding of how scientific knowledge and technology are used in making decisions about issues, innovations, and responses to problems and everyday events.	<b>CE 7:</b> Students should have knowledge of traditional and contemporary tool making.

**Estimated Time:** One 40-minute class period

**Lesson Goal:** To understand the relationship between an artifact’s form and its function.

**Lesson Objectives:** Students will:

- Describe an artifact by its characteristics
- Classify/arrange in a category artifacts with a similar form/features
- Learn how the Sugpiat used the natural resources available to them to make tools

**Vocabulary Words:** Sugt’stun Dialects

English:	PWS:	Lower Cook Inlet:
Form/shape		cangurlluni
Function/use		aturulku

**Materials/Resources Needed:**

- Sketching handout page (in Addendum)
- Set of prehistoric tools for student examination (in kit)

**Websites:**

<http://alaska.si.edu> Retrieved 2.13.13, select Sugpiaq Culture, search tools  
<http://www.oceanalaska.org> (under the research tab select Coastal Archaeology in Kenai Fjords then select images and video—Tools found at Aialik Bay site)

**Teacher Preparation:**

- Review “Prehistoric Artifacts of the Chugach Region” located in the Addendum
- Additional resources included in the kit:
  - Crowell, A. L., Steffian, A.F., and Pullar, G.L. (Eds.) (2001). Looking Both Ways: Heritage and Identity of the Alutiiq People. Fairbanks, AK: University of Alaska Press.
  - Crowell, A. L.; Worl, Rosita; Ongtooguk Paul C.; and Biddison, Dawn D. (2010). Living Our Cultures Sharing our Heritage, The First People of Alaska. Washington, D.C.: Smithsonian Museum.

- Throughout the lesson have the student repeat the Sugt'stun words for *form* and *function* each time the terms are used in discussing the artifacts.

### **Opening:**

Do you know what this is (display a picture of an oil lamp)? If I told you it was a bowl, would that be the conclusion of the learning about the prehistoric artifact. What else would you need to know about the artifact before you come to a correct conclusion? Prompt the discussion with the following questions:

1. What is the artifact made from?
2. Would this bowl hold enough food for a meal?
3. What wear or use marks can you observe on the artifact?
4. Ask the students to choose from one of the following options: a fish net weight, an infant's food bowl, an oil lamp, or a spoon holder.

To illustrate how the **FORM**/form of an artifact follows its **FUNCTION**/function or use, set a bowl of soup on a table with a knife and ask for a student volunteer to taste the soup. Next ask another student to try to taste the soup with a fork. Discuss that the **FORM**/form of the knife and fork were better suited for different **FUNCTIONS**/functions such as cutting or piercing. Finally select another volunteer to taste the soup with a spoon. Discuss why this **FORM**/form is suited to the **FUNCTION**/function of tasting soup.

### **Class I:** Form and Function

1. Divide the students into small groups and give each group an artifact (adz, wedge, oil lamp, or hammer stone) to study.
2. Use the fact page found in the addendum to:
  - a) Identify the type of material and resources needed to make the artifact.
  - b) Make a sketch of the artifact and measure the length, width, and thickness using a metric ruler.
  - c) Determine how the object was made.
  - d) Identify any unique marks or patterns of wear and include it on the sketch.
  - e) Determine the condition of the object. Was it damaged, broken, or deteriorated over time?
  - f) Determine the age/date of the artifact by locating a similar artifact that has already been dated by viewing the web site <http://alaska.si.edu> and selecting the Sugpiaq culture.
  - g) Describe the FORM/form by comparing the artifact to a familiar modern tool.
  - h) Describe the FUNCTION/function of the artifact by how it can be used in performing a task.
3. Assign at least one student from the group to search the internet site <http://alaska.si.edu> (or the text "Living our Cultures") to find an identical or similar artifact to determine the culture and any additional information about the artifact's use.
4. Each group will share the information learned as well as whether the form follows the function.
5. Discuss what possible methods could have been used to make each tool. Many techniques were used in traditional tool making, which included bending, braiding, weaving, twining, shaping, grinding, flaking, pecking, carving, oiling, painting, and

dyeing (the indentation in an oil lamp was made by grinding, the adz by flaking off pieces of rock, and the hammer stone a naturally shaped rock).

**TOOLS: KNIFEWORK: 3-6 (5)**

**Grade Level: 3-6**

**Overview:** Students compare the usefulness of knife types and their historical role as trade items.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<b>B4:</b> Identify appropriate forms of technology and anticipate the consequences of their use for improving the quality of life in the community.	<b>History A1:</b> Understand chronological frameworks for organizing historical thought and place significant ideas, institutions, people, and events within time sequences. <b>Science A3:</b> Develop an understanding that culture, local knowledge, history, and interaction with the environment contribute to the development of scientific knowledge, and local applications provide opportunity for understanding scientific concepts and global issues.	<b>CE 7:</b> Students should have knowledge of traditional and contemporary tool making.

**Estimated Time:** One 45-minute class period

**Lesson Goal:** To compare the relative usefulness of knife types, determine their chronological order, and explain their historical role as trade items.

**Lesson Objectives:** Students will:

- identify knife types
- compare their ability to cut various materials
- explain their historical role as trade items

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
Knife	nerusiq	nerusiq
Sharp	iperqaq	ipegluni
Sharper	iperqakcak	

**Materials/Resources:**

- Allen Marquette, Community Education Program Coordinator, Prince William Sound Science Center, geologist, [amarquette@pwssc.org](mailto:amarquette@pwssc.org)
- 3"-5" long pieces of shale or slate – the softer the better – and another harder rock to grind the shale – (In Cordova, rock such as the pepper and salt granite rocks used as rip rap on the Sheridan River Bridge Road.) (one set per student) OR spalled samples of local rock with which students can experiment with creating a knife-edge.
- Safety goggles
- Knife samples (clamshell, copper blade, stone knife, steel knife)
- Sample materials to cut (fish skin, tanned leather, small branches, meat, twigs, grass stalks)
- Out of Our Time (1980) pp.44-45, Art Tiedeman's description of trade standards for Russian goods and p.69, Agnes Nichols's narration of Russian/Native interaction and trading.

- Looking Both Ways Crowell, Steffian, & Pullar (2001) p.110 –Sugpiaq origin of slate-grinding technique 6,000 years ago, about 4,500 years ago perfected techniques for long sharp-edged bayonets and double-edged butchering knives; only appeared in adjacent regions 4,000 years ago; Middle Era (1500 BC – AD 1100) extensive trade, more salmon harvested, slate ulus.

### Websites:

- <http://en.wikipedia.org/wiki/Knapping> Retrieved 2.15.13
- <http://www.onagocag.com/knapping.html> Retrieved 2.15.13- good links for definitions and techniques for knapping
- [http://conncoll.academia.edu/AnthonyGraesch/Papers/330373/Modeling\\_Ground\\_Slate\\_Knife](http://conncoll.academia.edu/AnthonyGraesch/Papers/330373/Modeling_Ground_Slate_Knife) Retrieved 2.15.13- Alaskan slate knives, traditional subsistence salmon processing
- <http://www.youtube.com/watch?v=ZE9BL8bK84k&feature+related> – Retrieved 2.15.13. How to make and use a slate or shale tool video (five minutes)

**Teacher Preparation:** Review Out of Our Time (pp.44-45, 69). Tiedeman’s description of a trade arrangement under the trading post barter system in which Natives had to pile up otter pelts equal to the height of the desired trade item and Agnes Nichols’s narration of Russian/Native interaction and trading. Review Looking Both Ways (p.110) selections. If shale or slate is available students may knap their own blades following the directions from the listed websites. If not, consider spalling off some samples from local rocks in the general shape and thickness for a hand held cutting tool for students to try knapping.

### Activity:

#### Class I:

1. Discuss tools required for subsistence lifestyle (*cooking implements, utensils, hunting tools – bow and arrows, harpoons, fish hooks and nets, knives*). There was a constant need to cut, slice, divide, separate, and clean game, fish, berries, wood, roots, etc. What resources were available to the Sugpiaq to make knives? (*Possible answers: stones (which sorts?), shells (which sorts?), animal teeth, etc.*).
- (Optional: If shale or slate is available students may knap their own blades following the directions from the listed websites. If not, consider harvesting some sharp rocks locally for students to try knapping. Safety goggles should be worn.)
2. Display knife samples and identify source material. How to compare them? Have students brainstorm a cutting hardness scale. List suggested materials from easiest to hardest to cut. Select six to try (i.e., *tanned leather, fish skin, meat, small branch, twigs, and grass stalks*).
  3. Designate ‘knife students’ and distribute one knife type to each. Make class predictions about various knives’ cutting abilities.
  4. Designate student ‘stations,’ one station per type of material to be cut. Supervise and have students record cutting failure/success by each knife type and material cut.
  5. Have each knife student visit each of the cutting stations and cut target sample for (up to) 30 seconds. Station students record cutting ability (Cut through target all the way; cut through target part way; didn’t cut through target.)
  6. Collate class results on board. Were student predictions accurate?
  7. Review class results from knife comparison experiments and place in order of increasing cutting ability. Consider how this reflects order of development over time.



## TOOLS: SHOEBOX DIG: 3-6 (6)

**Grade Level:** 3-6

**Overview:** This lesson allows students to create a prehistoric archaeological site by layering tool artifacts in soil materials and then use the horizontal excavation technique on their site to locate the buried artifacts. Archaeologists follow four basic steps in the scientific inquiry method when exploring sites. In solving the mystery, the first step is determining the research question, what you need to find out, what is the mystery. The next step is to develop a theory by asking what are you trying to prove and what you think the clues will tell you. The third step is the actual collection of artifacts from the site. This step requires extensive record keeping on research of the site, mapping the location of artifacts within the site stratigraphy, organizing clues and attributes, and finally the collection of data. The final step is research to answer the question by analysis of all the data and then drawing conclusions/inferences.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
E5: Students who meet this cultural standard are able to recognize how and why cultures change over time.	Science A3: Develop an understanding that culture, local knowledge, history and interaction with the environment contribute to the development of scientific knowledge, and local applications provide opportunity for understanding scientific concepts and global issues.	CE9: Students should have respect and appreciation for their own culture as well as the cultures of others.

**Estimated Time:** Two 40-minute class periods

**Lesson Goal:** To further the students’ knowledge of the scientific method and prehistoric Sugpiaq/Alutiiq culture as successive groups of people who lived in the same area leaving buried clues about their lifeways (ways of living—everyday cultural customs and practices).

**Lesson Objectives:** Students will:

- create their own prehistoric village site by layering soil and artifacts.
- experience excavation of their site with care to preserve their finds.
- conclude that the oldest tool artifacts are located on the bottom layer.
- understand that not all materials survive through time.
- use the scientific inquiry method.

**Vocabulary Words:** Sugt’stun Dialects

English:	PWS:	Lower Cook Inlet:
Subsistence		Uksumen Ililialuta
Village		Nunagpet

**Materials/Resources Needed:**

- Clear shoeboxes (included in kit)
- 3-4 types of soil materials (sand, dirt, small rubble, mix of dirt and vermiculite)
- Artifacts (included in the kit)
- Set up work stations for the dig with a shoe box, soil, and artifacts
- Make sufficient copies of the “Dig Record Sheet”

**Website:**

<http://www.archaeological.org> Retrieved 2.13.13, select education as a source for additional information.

**Teacher Preparation:**

- Read “Basics of Archaeology for Simulated Dig Users” (attached)
- Review Chugachmiut Time line (found in the addendum)
- If available, have a village elder read the story about the “shoe box” site being created
- Copies of the “Dig Record Sheet” (attached)
- Refer to page 104 in “Looking Both Ways” to view the archaeological cultures of the Alutiiq region.
- Review the “Archaeological Site Story” (found in the addendum)

**Opening:** Learn the Scientific Process**Your Desk Archaeology**

Step 1: Question/Mystery—consider “Is the student who uses this desk a saver or a thrower-awayer?”

Step 2: Formulate a hypothesis—If there are many items not required for schoolwork, then the person is a saver.

Step 3: Classify the data—Only two categories are essential, items required for schoolwork and items not required for schoolwork. If you are doing this exercise with classmates, discuss how you have different opinions on what is required for schoolwork and what isn’t. Have the students fold a sheet of paper lengthwise and list the item under the two categories.

Step 4: Answer the research question—Which category contains the larger number of objects? If there are more items that are not required, then we accept the hypothesis. The owner of the desk is a saver. You have made an inference (hypothesis) about the behavior of the desk’s owner and have tested your inferences using classification methods to organize the data.

**Scientific vocabulary used in “Your Desk Archaeology”**

- Archaeology—A science for studying or analyzing material evidence (artifacts and sites) and human cultures. A specialized field within anthropology concerned with the study of humans. Identifying cultures by a set of recurring material remains of features, house types, pottery forms, and burial styles.
- Artifact—Object made, used, or transported by humans that can provide information about human behavior in the past (desk artifacts: pencil, eraser, scissors).
- Attribute—A characteristic or recognizable quality of an object, such as size, color, shape, age, how it was made, and so on. Artifact attributes are anything helpful in describing, analyzing, or characterizing it.
- Classification—To arrange in a category, or to put in like groups.
- Hypothesis—Tentative and testable guess or premise.
- Inference—A conclusion made from observations. Being able to pass from accepting one statement or truth as fact and changing to accept a new one based on new or evolving evidence and debate. Making a judgment, statement, or conclusion from observations or from what appears to be the results of research.

## **Activities:**

### **Class I:** Building the Archaeological Site

1. Supply each group of 4-5 students with a shoebox, soil material, and artifacts.
2. Instruct the students to build their archaeological site as the site story is read (found in the addendum).
3. Within the site story are the vocabulary words **SUBSISTENCE** and **VILLAGE**. Have the students repeat these words in the Sugt'stun dialect as the story is read.
4. Request elders/recognized experts to share in the activity with the class or read the site story.
5. Ask the students what type of artifacts may be found in the top layer of soil. Additional information could be added to the story for the final layer from the knowledge gained in the study of the community from Lesson 2. Reference can be made to the Chugachmiut Time Line (found in the addendum) regarding more recent events.

### **Class II:** Excavating the Archaeological Site

1. Distribute each of the "Shoebox" sites to a different group of students.
2. Hand out the "Dig Record Sheet", a spoon, a small paintbrush, plastic bags, and markers to each group.
3. Review the scientific process and ask the students to answer the following questions before they begin:
  - a. What do you want to find out?
  - b. What are you trying to prove?
  - c. What do you think the clues will tell you?
4. Instruct each group to carefully remove each layer of soil with the spoon and brush away soil around the artifact before collecting it from the stratigraphy site.
5. The artifacts should be preserved by being placed in the plastic bag and labeled. Also note the soil layer from which it was removed.
6. Record each artifact found on the "Dig Record Sheet".
7. Finally, answer the research question by analysis of the all the data and then drawing conclusions/inferences.
8. Ask each student group to make a brief report to their peers about their discoveries.

# DIG RECORD SHEET

BOX #

TEAM #

Recorders' Names:

---

---

---

---

List of artifacts in LAYER \_\_\_\_\_

List of artifacts in LAYER \_\_\_\_\_

List of artifacts in LAYER \_\_\_\_\_

List of artifacts in LAYER \_\_\_\_\_

## Archaeological Time Line

8,000-5,500 B.C.      Paleoarctic Period

Settlement of Alaska's gulf coast began. Archaeologists believe that these first inhabitants traced their ancestry to Upper Paleolithic hunters of eastern Siberia and Japan based on their closeness and shared technological traits. (Refer to the map on page 10 in "Crossroads of Continents" cultures of Siberia and Alaska. Note the limits of polar ice and pack ice as well as the proximity of the Bering Strait known as the land bridge between the continents. )

Blade-based tools made by ancient Asian craftsmen found in this period were chipped tiny stone blades, known as microblades, from nodules of chert (greywacke). These thin, parallel sided flakes of stone were set into the edges of slender bone points to form sharp sided lances and arrowpoints.

Settlements:    Ground Hog Bay 2 in southeast Alaska's Icy Strait, near Glacier Bay.

On-Your-Knees Cave, a site on Prince of Wales Island. A barbed harpoon for sea mammal hunting and the skeletal remains of a man were uncovered.

Upper Ugashik River Drainage of interior Alaska. Stone implements were found. These are presumed to be the tools of ancient caribou hunters. Across the interior of Alaska, people of the Paleoarctic pursued caribou, bison, and other land mammals, and fished in fresh water lakes and streams.

5,500-1,500 B.C.      Holocene Epoch Early Coastal Life

Settlements along the coast are relatively numerous. Absence of sites in some locations may reflect the loss of cultural deposits due to local geological processes including sinking shorelines and the readvance of glaciers. During the early Holocene the climate was warmer and drier. Site locations during this period reveal animal remains, and tools indicate that the people were skilled mariners who harvested sea otters, small whales, seals, sea lions, and porpoises, in addition to auklets, murrelets, ducks, salmon, cod, halibut, a variety of shellfish, and even bears.

Tools discovered were stone microblades, bilaterally barbed bone harpoons and chipped stone points for sea mammal hunting, special points for bird hunting, and bone hooks for fishing. The technology of "slate grinding" became widespread around 2500 B.C. appearing in cultural deposits from southeast Alaska to the Aleutian Islands. From thin leaves of slate, craftsmen formed long slender killing lances and broad-bladed butchering tools known as flensing knives. The distinctive technique of "saw and snap" was used in the Kodiak archipelago to create these tools.

At this time the slate grinding technology was not carried north to the western Alaska Peninsula or the Bering Sea coast. The very distinctive culture known as the Arctic Small Tool Tradition was flourishing from 2,500-1,000 B.C.

Due to changing weather patterns people developed a new form of housing. They dug shallow pits and erected wooden frames inside, then covered the frames with sod blocks to create warm, weather-resistant homes. The size and configuration of these houses changed over time and continued to be the primary form of semisubterranean dwellings used well into the historic period. People continued to use temporary shelters to move between harvesting areas.

Settlements: Ocean Bay I phase on Kodiak Island followed by Ocean Bay II. During this time Residents were adept at harvesting resources from the sea. They used tools such as throwing boards to cast bone-tipped harpoons at sea mammals and killed wounded animals with chipped-stone lances. Delicate sewing needles suggests that waterproof gutskin clothing was available for protection against wind, rain, and sea spray. This site also provides evidence of true adaptation to hunting and fishing on the ocean, including possession of skin boats.

Takli Birch on the Pacific coast of the Alaska Peninsula followed by Takli Alder. This site also shows evidence of hunting and fishing on the ocean with skin boats.

Uqciuvit in Prince William Sound.

Brooks River Strand followed by Brooks River Gravels on the Alaska Peninsula North Coast/Interior. At old camp sites, lightweight, portable skin tents provided shelter. Archaeologist found rock rings that held down the edges of the tent covers, small post holes left by tent frames, and thin layers of occupation debris of charcoal, stains from red ocher, food bone, and artifacts.

Zaimka Mount on Kodiak Island. Stone oil lamps shaped from sandstone and other rocks are one of the most ancient pieces of technology from the Alutiiq culture.

Blisky Site on Near Island in the Kodiak area. Tent floors with simple hearths were surrounded by ground slate lances and chert projectile points hunting tools which suggest that the site was an Ocean Bay era hunting camp. The hunters shaped and sharpened their tools between trips to nearby rookeries. The remains of sea mammals and fish were found.

Pedro Bay on the shore of the Alaska Peninsula's Iliamna Lake. A collection of hunting tools and mammal bones suggest a seasonal caribou hunting camp occupied temporarily by coastal peoples.

Beluga Point Site in Upper Cook Inlet. Similar artifacts of this era also occurred in this estuary setting.

Rice Ridge Site on Kodiak Island. Tools used for bottom fishing were hooks made by attaching a sharp bone barb to a cured shank. A grooved stone weight was tied below the barb so that the hooks would float just above the sea floor. Ground slate lances believed to have its origins in the Alutiiq region were

discovered.

Hidden Falls on Baranof Island in southeast Alaska. One of the important finds at this site was ground slate points similar to those found on the Alaska Peninsula and Kodiak, suggesting that the technology spread from the west.

#### 1,500 B.C – 1,100 A.D. Coastal Villages of the Middle Era

The middle period is characterized by the development of larger coastal villages, composed of many single-roomed sod houses probably designed for nuclear families and some with raised sitting and sleeping platforms with entrance tunnels to trap cold air. The houses had a central stone-lined hearth around which were built clay-lined pits for food preparation—oil rendering, butchering, stone boiling, and fermentation of fish and meat. (It is thought by some researchers that glacial advances drove residents to outer regions of the sound, and others believe that sites were lost to changes in sea levels or have been poorly sampled.) Also due to the increased size of communities, people may not have been able to move in response to changes in the availability of resources. Coastal villages also used both summer and winter settlements. In the interior regions, year-round settlements were formed along major rivers and on inland lakes which used terrestrial resources for most of their subsistence needs.

In response to a less mobile community people began to harvest a broader range of resources from a larger range in their environment. Shell fish of clams, mussels, urchins, cockles, chitons, whelks, and limpets were found in enormous quantities in middle period garbage deposits. Winter villages on the outer bays provided access to sea mammals, marine fish, and birds, while smaller summer salmon camps occurred by fresh water streams. Second, they developed new harvest technologies for food and raw materials and began to trade with their neighbors. In the Kodiak archipelago, sites contained large quantities of basalt, caribou antler (not indigenous to the Kodiak archipelago were prized for its density and resilience), walrus ivory, bituminous coal, pumice, exotic chert, and limestone obtained through trade with the Alaska mainland. Trade was made in both finished items and raw materials. And finally, the changes in economic life of trade corresponded with change in the social and spiritual realms. It is suggested that there was a growing concern with social identity and family affiliations. As an outcome of increases in population size, it is likely that fighting increased as well due to greater competition between communities for control of subsistence territories. Refuge sites were used as a place of safety at the end of this period to protect communities from raiding parties.

New tool technologies were developed for harvesting larger quantities of food. Nets made with wooden floats and stone sinkers permitted the mass capture of salmon and a new form of harpoon, the toggling harpoon which turned sideways in its prey, improved a hunter's ability to capture sea mammals as it decreased the animal's chance of escape. Slate ulus were created. Also increased control of local resources may indicate the use of "maker's marks". Hunters began to incise simple geometric designs on slate hunting lances. These appear to be ownership marks, easily recognized designs that tied specific hunters to their weaponry and their kills.

Settlements: Uyak Site in Larsen Bay, Kodiak Island—Kachemak Tradition  
Discoveries made were late Kachemak house floor and reconstruction, whale tail

spoon or gut scraper, walrus ivory portrait carving, barbed harpoon, toggling harpoon, slate point, net sinker, whale tale pin, spirit face carving, caribou hoof carving, coal labret (lip ornament) and nose ring, beads, and incised slate lances. The artifacts collected represented intensive trade, craft production, and artistic symbolism.

Koniag Phase Village along the Ayakulik River, southern Kodiak Island. Alutiiq community which was one of five that lies along the river banks. Structures had side rooms as sleeping quarters for a nuclear family. Also caribou antlers were used to make many objects from harpoon points to wedges for splitting wood and bone.

Karluk River on Kodiak Island.

46 sites were discovered along the river, with the greatest density around the lagoon. Karluk 1 site which lay at the lagoon entrance was recently reclaimed by the meandering river. This river was known as the most productive salmon stream for all five species of Pacific salmon spawned in the shallow river from the Lagoon to the Lake. The site attracted Native settlement for more than 5,000 years.

1,100 A.D. – 1760 A.D      Late Precontact Era

The beginning of the late Precontact Era coincides with the onset of the Little Ice Age, a period of cooler, damper weather that began about A.D. 1100 and continued until A.D. 1850.

The Alutiiq society began transforming into the complexly organized communities recorded at historic contact. They were socially stratified with a hereditary ruling class, slavery and warfare, and specialized community occupations—chiefs, priests, whalers, shamans, and midwives. The social system was built on the accumulation of wealth and the perpetuations of social standing through elaborate ritual.

Cultural transition as noted by archaeologist: In the Kodiak archipelago, the Koniag phase follows the Late Kachemak phase. In Prince William Sound the Chugach phase follows the Palugvik phase. On the Alaska Peninsula, Pacific coast, Kukak Mound phase and on the Alaska Peninsula, Interior, Brooks River phases archaeological show interaction between the Alutiiq people as nearly identical tools were found in these locations. Perhaps families traveled from coastal winter settlements to interior summer fishing camps.

This period is characterized by larger household hearths and rooms grouped around a large central space that suggest a switch from nuclear to extended family households. Groups of larger houses tend to cluster near the center of the villages. There is more evidence of sweat bathing and wood working. Tools used for sweat bathing, fire-cracked rock dumps, and wedges become more common and a new form of grooved splitting adze is adopted. A coordination of labor is evident in the construction of stone fishing weirs.



Growing emphasis on public ritual is evident in the construction of qasqit—ceremonial buildings. This single room structure was used by the community and maintained for social, political, and ceremonial gatherings.

Petroglyphs and pictographs carved or painted to cliff faces, boulders, and cave walls are found along the coast. The images depict people, land and sea mammals, birds, fish, boats, harpoons, lamps and geometric designs. Kodiak Petroglyphs tend to occur at the mouths of bays, facing the open water. There are seven known petroglyph sites in the Kodiak archipelago. Sites also appear in the Cook Inlet, Alaska Peninsula, and Prince William Sound. The designs may be characters from myths or family stories, marked on the landscape to indicate ownership of traditional hunting and fishing territories. In Prince William Sound, rock art was associated with whaling magic.

Settlements: Karluk I, Kodiak Island

Some of the richest data was found at the Karluk I site where over time water from nearby streams seeped through the deposit of enormous mounds of cultural material, creating cool wet conditions that slowed decay. Wood, bark, bone, antler, ivory, baleen, spruce root, grass, fur, human hair, and feathers all survived.

Discoveries made at this site include a disk for playing Kagangaq, and bentwood boxes used for food storage, stone boiling, and other household tasks as well as basketry items. Hunting tools, Koniag subsistence technologies: slate lance point and wooden case, barbed harpoon for sealing, harpoon heads used to harvest salmon trapped behind stone weirs. Lip ornaments known as labrets communicated social status and perhaps family affiliation became larger and more varied. Shields, clubs, armor, and war arrows coincide with the development of refuge sites. Archaeologists believe that as the Alutiiq population grew and strong political leaders emerged, warfare became more common. Both trade and warfare were used by affluent members of society to obtain riches and maintain economic power.

Kachemak Bay culture, lower Kenai Peninsula

People began to disappear from this area. Sites postdating this era hold artifacts of the Dena'ina who spread south from upper Cook Inlet. It is thought that the Little Ice Age, overexploitation of resources, warfare, or residents moving in with their Kodiak relatives contributed to the decline of the region's small population.

Settlement Point, Koniag Village, southern Afognak Island

House floors were covered with clay-lined pits and slate slab boxes used to store fish. Greater dependency on fishing is also associated with increases in storage for processing and holding their catches. The remains of huge meat-roasting pits hint at more community feasting. Incised pebbles—small pieces of slate etched with drawings in ceremonial clothing appear in Alutiiq villages sites around A. D. 1300. Bird-skin parkas, gut-skin jackets, headdresses, rattles, and jewelry are all depicted. The purpose of the drawings is unknown.



# Shoebox Dig

*Shelby Brown*

THE ARCHER SCHOOL FOR GIRLS  
LOS ANGELES, CALIFORNIA

**Acknowledgements:** Shoebox digs and other small-scale excavation projects have been developed, refined, and passed on by many teachers over the years. Examples can be found in books, on the web, and in teachers' personal collections of lesson plans.

This dig is based on one conducted with the second grade students of Fairburn Avenue Elementary School in Los Angeles and refined with the help of the participants in the 2006 AIA Teacher Session on shoebox archaeology at the AIA/APA convention in Montreal and the October 2006 teacher session at The Archer School for Girls in Los Angeles. Many thanks to the students and teachers for their enthusiasm and helpful suggestions!

This dig also owes a great deal to dozens of fellow excavators who have brought archaeology into schools. AIA member Craig Lesh polled archaeologists about their goals in introducing young students to the discipline, and this lesson attempts to address some of their most pressing concerns about teaching the importance of context.

## OVERVIEW

Students will become archaeologists on a small scale and uncover the stratified layers in a shoebox. This is a manageable, compact, and fun (although sometimes messy!) dig for older elementary school children that can be modified for middle school. Unlike the other small-scale AIA digs (Layer Cake Archaeology and Transparent Shoebox Dig), which allow younger students to see the archaeological layers of a site before digging them, this is a blind dig more like a real excavation. Students excavate in teams, uncover three or four layers, record their findings, and answer questions that reveal how carefully (or carelessly) they served as excavation supervisors and how well their digging strategies worked. Since archaeologists use the metric system, the teacher may incorporate metrical calculations into the lesson.

The Shoebox Dig teaches basics of archaeology, the logic of horizontal excavation, the nature of stratigraphy, and the importance of keeping records and preserving the context of finds. The artifacts used in our example are simple and

easily obtained, and they are not representative of genuine cultures. They permit students to focus on observation and analysis and help them avoid jumping to conclusions based on cultural cues. Alternatively, teachers may choose to add culturally specific simulated artifacts, replicas, or laminated images of real artifacts to relate the lesson to cultures students are studying in class.

## GRADE LEVELS

The dig is designed for third graders and older elementary ages. To adapt the dig for use by middle school students, the shoe boxes can be modified so that they are not all identical. Each older team is then responsible for an area of the site, and the whole site will not be completely comprehensible until all the teams join forces to discuss and interpret their findings.

## GOALS

Interdisciplinary goals are to

- help students practice transferable skills of observation, critical thinking, inquiry, and hypothesis-testing applicable to many disciplines, including science, math, social science/history, art, and English.
- permit teachers to make connections across disciplines and engage in kinesthetic learning, including excavating, presenting orally, writing, listening, and drawing (translating three dimensions into two).
- illustrate the importance of context to the meaningful interpretation of data.
- promote teamwork, sharing ideas, academic honesty, and building on the past work of others.
- show the distinction between observations (the discoveries we make) and inferences (the stories we make up).
- engage students in thinking about multiple interpretations.
- allow for design flexibility, so that teachers can meet their own classroom's needs.

Archaeological goals are to

- introduce principles of stratigraphy and make excavation strategies (digging horizontally and excavating one layer at a time to preserve context) clear and relevant.
- show that our knowledge of the past is incomplete and illustrate how some of its gaps came to exist.

- illustrate how careless work can affect interpretation, destroy context, and disguise cultural change.
- emphasize that excavation and archaeological research are not treasure hunting, but rather ethical endeavors to restore a past culture's heritage.
- teach students how to measure, map, draw, and understand a top plan and cross section (translate three into two dimensions).

Students experience in a kinesthetic way the fact that excavating an archaeological site destroys it, so that afterwards there is no possibility of checking information not recorded. Even if record-keeping needs to be simplified with young children, they should still be asked to do some form of recording as they dig, and the dig should still end with discussion of what the students observed in each layer and why it is important to dig one layer at a time.

#### MATERIALS AND PREPARATION

The teacher should first read *Basics of Archaeology for Simulated Dig Users*.

In preparing shoe box digs, the teacher will need to acquire a sturdy shoe box for every four or five students. Each box will be filled with layers composed of sand and dirt, possibly mixed with colored sugar crystals, birdseed, or other ingredients to create different colors and textures and to help students recognize changes in strata as they excavate. Each layer should be thick enough (at least an inch deep, or about 3 centimeters) to be identified by students before they dig through it accidentally. Depending on the number of students and teams (there can be as many as 4–5 members per team), filling the boxes and cleaning up afterward may take more than an hour. Excavating, recording, and discussing will take several hours.

The dig should be built around a story the teacher has in mind, which may vary depending on the artifacts. These can be inexpensive and may include small objects saved up from past projects. Keeping the artifacts culturally neutral (not representative of genuine cultures) helps students focus on observation and analysis. Adding laminated images or replicas of real artifacts creates a more realistic site.

It is best to create the digs at the school or location where the boxes will be excavated, preferably outdoors. (The teacher will ideally have some adult assistance.) Once all the boxes, dirt, and objects have been obtained, the easiest way to proceed is for the teacher and helpers to complete the lowest layer of dirt and artifacts in all boxes in exactly the same way, and then move up to the next layer. The layers should be packed down quite tightly to resemble the (generally) compact soil of a real dig as closely as possible.

#### Making context important

- In at least one layer, several objects should be related and the teacher should place them near one another. Parts of a broken artifact can be positioned so that students who dig carefully will see the original connection. Small beads can be arranged to create a necklace pattern. A small circle of pebbles with a fragment of charcoal inside it can represent a fire pit.
- The teacher might put a mystery artifact in one layer of each box.
- For older grades (middle school) the teacher can increase complexity, emphasize teamwork, and ask students to participate in the planning and design of dig sites.
  - One option is to leave some objects out of certain boxes so that it will only be possible to learn about all the finds if teams share information.
  - Alternatively, different shoeboxes can represent different areas of a site altogether.
  - Teams or classes can design the shoebox digs for one another and exchange them, or can design the dig(s) for the next year.

#### Materials (for four layers)

- Shoeboxes, numbered, with one side labeled LEFT or WEST at the teacher's discretion
- Sand, not too fine and dusty
- Potting soils, ideally of different textures and colors, and not too fine (choose soils of a uniform consistency that will help make it easy to spot artifacts), for an upper layer of dirt-dwellers
- Colored sugar crystals or bird seed
- Oregano, sesame, coffee, or another additive with a distinctive odor
- A pre-selected number of artifacts of different types for each layer (perhaps 5 items of 5 types in each layer; for example, 5 green beads, 5 plastic fish, and so on, for a total of 15 artifacts in each layer)
- Sugar cubes, clay, or plastic building blocks to create features (if desired)
- A piece of plastic or a plastic tablecloth to work on

The layers of our sample dig are composed of:

- Sand (bottom layer D)
- Soil mixed with birdseed (middle layer C)
- Another soil with a different texture and color (top layer A; left/west half)
- Soil mixed with colored sugar crystals (top layer B; right/east half)

#### Artifacts from our sample dig

- Fake or real (modern, not ancient!) coins
- Miniature plastic doll dinnerware
- Popcorn
- Small plastic bugs

- Beads of different types
- Fake "gems"
- Dried pasta
- Marbles

**Excavation tools**

- Spoons (excavation tools)
- Containers for excavated dirt
- Small sieves
- Small plastic bags to hold the artifacts from each layer
- Waterproof black markers to label the bags
- Pencils
- Brushes
- Top plan
- Record sheets
- Clipboards
- Artifacts and/or laminated images of artifacts
- A top plan for each layer: a sheet of graph paper with a square or rectangle already drawn on it representing the excavation square
- A record sheet for each layer, designed by the teacher and requiring (in a simple version) a list of artifacts found in each layer, or (in a more complex version) a description and sketch of each artifact (see samples)

**Recording is essential**

The teacher should design his or her own top plans and record sheets based on the dig goals, the age and number of students, and the number and type of layers and artifacts. See *Sample Record Sheets 1 and 2* for full-page samples. In the particular dig described here, it can be confusing to find two different types of soil, side-by-side, on top. Showing students what to look for can be helpful; thus the sample record sheet should be emended as follows to clarify the layers:

Record Sheet      Box # \_\_\_\_\_      Team# \_\_\_\_\_

LAYER A (top left/west, soil)

LAYER B (top right/east, colored soil)

LAYER C (middle, soil with birdseed)

LAYER D (bottom, sand)

**CLASS TIME**

The project takes the students at least several hours and requires several adults to remind them not to dig holes with their spoons and to record properly. It will take more time and require more adult supervision if the teacher allows everyone to rotate through needed roles on the team and gives each student a chance to dig. Cleanup takes between a half hour

and an hour. Discussion of the dig and follow-up with questions and answers should take another hour.

**PROCEDURES****Introduce archaeology and the dig**

The class learns basic rules and procedures of archaeology. See *Basics of Archaeology for Simulated Dig Users*.

**Introduce the site**

The teacher should introduce some finds at the site and then have students excavate and infer the rest of the story. Explain how archaeologists know about the site (perhaps through old records and surface survey). The teacher might begin the dig by revealing several finds that have turned up in a farmer's field in this area. These artifacts should reveal something about the nature of the site, and students should discuss what they expect to find and generate hypotheses to test as they dig. The teacher may make some of the finds seem contradictory, and these should lead to discussion of multiple uses of a site or changes in activities at the site through time.

• The teacher should stress how important it is for archaeologists to separate observations of material remains from inferences (invented stories about the finds).

The ultimate story of the site the teacher has in mind should involve simple examples of cultural change (people who eat popcorn and live on a sandy coast are succeeded, once the sea has receded, by people who eat fast food and live on soil instead of sand; artifacts that include small plastic weapons and coins are followed by ones that include peace symbols and . . .). The story can be modified based on available artifacts, the students' ages, and the degree of complexity desired in the dig site.

*Sample (ridiculously simple) story*

*Bottom layer D (sand): artifacts include popcorn, plastic gems, one marble. If possible, arrange gemstones in a circle to reveal the pattern they may have formed in a necklace or bracelet. Do not explain the marble; students will draw their own conclusions later.*

Long ago there was a sandy desert in this part of the world. The sun was very hot, and the people who lived in the desert used to make popcorn by putting the kernels out on hot rocks. The popcorn-eaters did not use money; rather, they traded jewelry for the corn grown by farmers who lived far away near a river (where corn could grow because there was dirt and water instead of sand!).

*Middle layer C (soil mixed with birdseed): artifacts include coins.*

After many years something very upsetting happened. The farmers stopped growing popcorn! They started producing birdseed, AND they wanted money for the seeds, too—not

eaters share? (Marble.) Can you come up with an explanation for how the two groups came to use the same object? (Possible inference: the later people found a marble left by the earlier people and used it, too.) How might the object have been used? (Here it will ideally become clear during discussion that sometimes there is just no way to find out the answer using the evidence at hand. What might further digging uncover to help answer the question?)

- What kind of jewelry was made in layer D? (Were gems or beads in the soil arranged in a patterned necklace or bracelet?)
- What kinds of pasta did the pasta-eaters eat?
- How many different kinds of bugs did the bug-eaters eat?
- How careful was your group in keeping the layers separate?
- What surprised or interested your team members the most?

These questions are not particularly deep; they merely require the excavators to observe closely. In a more complex dig, or in one using laminated images of artifacts that represent a real culture, the students can first develop hypotheses about what finds they will excavate based on the surface finds, and consider after excavation what they may discover if they dig further and uncover more of the same site.

#### **FOLLOWING UP**

As a subsequent activity, students can be asked to design (on paper) the possible stratigraphy under their school building. They can imagine or actually research, with assistance, life at the school site before the school was built, and depict the

resulting material remains in layers shown in cross section under the present day surface. Their stratigraphic drawings can range in size from notebook paper-size to the height of the classroom or hallway wall.

In the real world, a dig ends with questions that are still unanswered and reconsideration of hypotheses that were not validated. Older students may continue their analytical thinking by studying the AIAs *Mystery Cemetery*, drawing conclusions about the site (Map 1 and photographs) and then checking their ideas through further excavation (Map 2).

#### **RESOURCES**

See *Basics of Archaeology for Simulated Dig Users* and *Resources National Standards for Simulated Dig Users*.

Coan, J. 1999. *Digging into Archaeology: Hands-On, Minds-On Unit Study*. Pacific Grove: Critical Thinking Books & Software.

Cochran, J. 1999. *Archaeology: Digging Deeper to Learn About the Past*. Nashville: Incentives Publications, Inc.

McIntosh, J. 2000. *Archeology*. London: Dorling Kindersley Ltd.

Moloney, N. 1997. *The Young Oxford Book of Archaeology*. Oxford: Oxford University Press.

White, J.R. 2005. *Hands-On Archaeology: Real-Life Activities for Kids (Grades 4–10)*. Waco, TX: Prufrock Press.

Online:

"Doing Archaeology in the Classroom: A Sandbox Dig"  
<http://www2.sfu.ca/archaeology/museum/classroom/sandbox.html>

# Activities for Grades 7-9

## TOOLS: TRAVELING: 7-9 (1)

**Grade Level:** 7-9

**Overview:** Students explore the Arctic Studies website for information about how, where, and why the peoples of the Far North traveled in pre-contact days. Each artifact used for travel whether on land, sea, ice, or snow illustrates knowledge of specific materials required for the terrain. Alaska Natives have a detailed knowledge and understanding of their environment, as well as its resources and natural cycles. Furthermore, they have developed many techniques and tools to live in that environment.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<b>E6:</b> Students who meet this cultural standard are able to anticipate the changes that occur when different cultural systems come in contact with one another.	<b>Geography D1:</b> A student who meets the content standard should know that the need for people to exchange goods, services, and ideas creates population centers, cultural interaction, and transportation and communication links.	<b>CE9:</b> Students should have respect and appreciation for their own culture as well as the culture of others.

**Estimated Time:** Two 50-minute class periods

**Lesson Goal:** To develop knowledge of the cultural uses of technology and tools.

**Lesson Objectives:** Students will:

- Inventory different modes of transportation available to indigenous peoples of the Far North.
- Determine reasons that people traveled in the past.
- Map routes people took as they traded in the past.

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
Trade		cimuteq
Travel		ang'asiigluni

**Materials/Resources Needed:**

- Access to the website <http://alaska.si.edu>
- World wall map
- Cultural map
- Colored push pins
- Student journals
- Student handout "Travel in the Far North"
- Butcher paper (or similar paper roll)
- Crowell, Aron L., Steffian, Amy F., and Pullar, Gordon L. (2001) Looking both ways heritage and identity of the Alutiiq people. Fairbanks, Alaska. University of Alaska Press.
- Fitzhugh, William W. & Crowell, Aron (1988) Crossroads of continents cultures of Siberia and Alaska. Washington, D.C. Smithsonian Institution Press.
- Exhibition catalog references: "Living our Cultures"



- “Introduction” by Aron Crowell (pps.15-22)
- “Inupiaq” by Beverly Faye Hugo (pps. 48, 56-63)
- “St. Lawrence Island Yupik” by Paapi Merlin Koonooka (pps. 79, 80-89)
- “Unangax” by Alice Petrivelli (pps. 130-131)
- “Sugpiaq” by Gordon L. Pullar (pps. 154-155)
- “Athabaskan” by Eliza Jones (pps. 175-189)
- “Tlingit” by Rosita Worl (pps. 203-204, 206)
- “Tsimshian” by David Boxley (pps. 251-275)

**Websites:**

- <http://alaska.si.edu> Retrieved 12.28.12 Search cultures then select travel and boats.

**Teacher Preparation:**

- Review the website’s navigation scheme
- Photocopy “Travel in the Far North” handout (attached)
- A laminated map of “Crossroads” trade routes is also available in the Trade and Change Heritage Kit.
- Additional resource “Crossroads of the Continents” (pps. 236-237 indicate native trade products and routes. Also of interest are the maps on pps. 10-11, 108).
- When the Sugt’sun vocabulary words of trade and travel are used in the lesson, students should repeat the words in chorus.

**Opening:** Examine Ang’asiigluni /Travel of Today

1. With a world wall map displayed, ask students to mark the places they have visited with pushpins. If a location is already marked, there is no need to place a second pin at that location.
2. As a class, look at the map to see where classmates have traveled. Ask students to tell why they traveled to each place. Write their answers on the board. They might answer, for instance, “vacation”, “school field trip”, or “family reunion.” After you have written these answers on the board, have students identify broad categories they could fit under each. Examples might be Fun, Education, Family, and Economics. Allow ample time for the class to brainstorm about other activities and categories.
3. Have students look at the tags in their clothing to find out where they were made. Consider if modern transportation systems did not exist, how would students travel to obtain this variety of goods?
4. Similarly, students can go to the grocery store to look for ingredients for a favorite recipe and see how far some foodstuffs have traveled. If their diet were restricted to local foods would they be motivated to ang’asiigluni /travel to obtain some variety in their diet?
5. With this basic understanding for the reason to ang’asiigluni /travel, have the students apply this information to the reasons for travel in the Far North in the next activity.

**Activities:**

**Class I:** Travel in the Far North

1. Access the website and project the map on the screen by selecting Cultures, or use the Language/Culture map included in the Heritage Kit. There is no scale on the map, so the students will have to visualize the distances by comparisons. Note the distance from the

southeastern-most tip of Alaska to the southwestern-most end of the Aleutian Islands is about the same as the distance between Savannah, Georgia and San Francisco, California.

2. Explain that despite these great distances, all the people represented on the website/map were part of a vast cimateq/trade network long before any motorized means of transportation were available to them. The Native people would not have necessarily traveled that entire distance. For example, items such as dentalia shells worked their way up the Pacific Coast from Vancouver all the way to the Athabascans of the Interior by being traded among neighboring tribes.
3. Talk about what sorts of things the Sugpiaq might want to obtain by cimateq/trade. Ask the students to write these speculations down in a journal. They will verify and correct these speculations through research on the website.
4. Brainstorm as a class reasons for ang'asiigluni /travel in Alaska other than cimateq/trade. Ask students to write these ideas down in their journals, and verify or correct by research.

**Class II:** How, why, and where did people ang'asiigluni /travel?

1. Distribute the student handout “Travel in the Far North”.
2. Using the computer and projector, go to the search page and search all cultures for travel and boats. Direct the students to do the same at their individual computers as they complete the student handout on their own.
3. To help the students learn to navigate the website, complete the information on “How Did People Travel” for item 1 as a class.
4. Students can then proceed on own to complete this section.
5. As their investigation continues, have the students pay attention to the type of tools and artifacts that are also mentioned.
6. In class, compare and contrast the various modes of transportation in the Far North by pooling students’ knowledge. Relate those modes of transportation with the environment—particularly the weather and terrain—in the Far North.

**Class III:** Mapping

1. After students have completed the handouts, pool their knowledge by making a basic composite map on butcher paper of the movement of materials and people throughout the Far North. Ask the students to draw their own objects’ travels on the map. When the map is complete, look at it as a class and discuss the distances traveled and the types of materials taken along.
2. If students’ research results do not include all cultural areas (except Eyak) on the website, fill in blanks by finding objects as a class for the missing cultures.



## STUDENT HANDOUT: Travel in the Far North

**DIRECTIONS:**

You will investigate three questions about travel in the Far North:

- How did people travel?
- Why did people travel?
- Where did people travel?



**PART 1: HOW DID PEOPLE TRAVEL?**

Look at the objects that relate to travel and boats from all cultures. Choose three items from three different cultures. Then record:

1. Item 1 culture: \_\_\_\_\_

2. Item 1 object name (English and indigenous language if available):  
\_\_\_\_\_

3. Item 1 object number: \_\_\_\_\_

4. Describe Item 1 (pretend you are talking on the telephone and must tell a friend about the object).  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. What season was Item 1 used? \_\_\_\_\_

6. Check the appropriate boxes (as many as apply):

\_\_\_\_\_ fresh water travel      \_\_\_\_\_ ocean travel

\_\_\_\_\_ land travel                      \_\_\_\_\_ ice travel

1. Item 2 culture: \_\_\_\_\_

2. Item 2 object name (English and indigenous language if available):  
\_\_\_\_\_

3. Item 2 object number: \_\_\_\_\_

4. Describe Item 2 (pretend you are talking on the telephone and must tell a friend about the object).  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



5. What season was Item 2 used? \_\_\_\_\_

6. Check the appropriate boxes (as many as apply):

\_\_\_\_\_ fresh water travel

\_\_\_\_\_ ocean travel

\_\_\_\_\_ land travel

\_\_\_\_\_ ice travel

1. Item 3 culture: \_\_\_\_\_

2. Item 3 object name (English and indigenous language if available):  
\_\_\_\_\_

3. Item 3 object number: \_\_\_\_\_

4. Describe Item 3 (pretend you are talking on the telephone and must tell a friend about the object).  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. What season was Item 3 used? \_\_\_\_\_

6. Check the appropriate boxes (as many as apply):

\_\_\_\_\_ fresh water travel

\_\_\_\_\_ ocean travel

\_\_\_\_\_ land travel

\_\_\_\_\_ ice travel

#### PART 2: WHY DID PEOPLE TRAVEL?

Read the cultural essays and information on some of the objects on the site. List three reasons that people traveled in the Far North.

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

#### PART 3: WHERE DID PEOPLE TRAVEL?

Find an object that was traded or contains materials that were obtained by trade. Answer these questions about the object:



1. Name of the object (English and indigenous language if available):

\_\_\_\_\_

2. Where was the object made (culture and community, if available)?

\_\_\_\_\_

3. Besides the place where the object was made, where else were the materials from?

\_\_\_\_\_

4. Draw a free-hand map of the Far North and indicate by arrows a possible route by which the materials got from their origin to the place where they were used to make the object.

## TOOLS: RAW MATERIALS TO TOOLS: 7-9 (2)

**Grade Level:** 7-9

**Overview:** Using the map that was created in the previous lesson on travel and trade, the focus will now be on your village resources useful in making tools, as well as other trade items, from slate, chert, stone, shells, driftwood, coal, copper, antlers, horns, bones, animal parts (such as intestines and stomachs from seals and bears as well as fish skin), furs, flint, trees, and grasses. Today, we can replicate the process used in ancient tool making with traditional materials and techniques.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<b>B2:</b> A student who meets the cultural standard should make effective use of knowledge, skills, and ways of knowing from their own cultural traditions to learn about the larger world in which they live.	<b>Geography E1:</b> A student who meets the content standard should understand how resources have been developed and used.	<b>CE7:</b> Students should have knowledge of traditional and contemporary tool making. <b>S7:</b> Students should know how to make tools from natural resources in the outdoor environment.

**Estimated Time:** Three or four 50-minute classes and a local field excursion.

**Lesson Goal:** Identify the local resources and how they were traditionally used.

**Lesson Objectives:** Students will:

- Map the local resources and their use(s)
- List potential trade items from the area
- Create a replica of an ancient tool artifact using traditional materials and techniques

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
Hook		iqsak
Slate		unialnuq yaamaq
Point		punga
Fish hook		iqsagursun

**Materials/Resources Needed:**

- Students' completed "Travel in the Far North" handouts
- Map created in Tools 7-9, Lesson 1
- Plastic sandwich bags and marking pens for resource collection
- Permission slips for field trip
- Collected slate for making a point, beach cobble, and a hammer stone (from field trip)
- Collected material for making a fish hook (from field trip)
- Crowell, Aron L., Steffian, Amy F., and Pullar, Gordon L. (2001) Looking both ways heritage and identity of the Alutiiq people. Fairbanks, Alaska. University of Alaska Press.

**Websites:**

- <http://alaska.si.edu> Retrieved 2.20.13 View Sugpiaq culture and select tools.

### **Teacher Preparation:**

- Parental permission for a local field trip
- Invitation to a recognized expert that can accompany the class and provide information on geography/geology of the area as well as resources
- Journal for note taking and mapping
- A collection of resources to be used in the opening “Discovering Our Local Resources”
- Cover desks with newspaper and cardboard for a work surface to prepare for point making.
- Remind students to wear safety goggles, cotton gloves, and long sleeve shirts for protection.
- Review the Sugt’sun vocabulary words to have students repeat the words when used throughout the lesson.

### **Opening:** Discovering Our Local Resources

Display the following items on a table and ask the students to identify if it is or is not a resources: a cup of salt water, a cup of fresh water from a lake or stream, scoop of sand, sap from a tree, a rock, piece of bark, a stick of wood, a spruce tree root, a collection of grass, a switch from an alder tree, and a shell.

### **Activities:**

#### **Class I:** Pre-field trip instructions / field trip / post field trip

1. Review the geography/geology of the area and have the students create a rough map outlining the boundaries of mountains, shoreline, lakes, and streams to be used on the field trip. Remind the students to bring a backpack to carry their collection bags as well as pencils, permanent markers for labeling items, and their maps.
2. While on the field trip, challenge the students as to what constitutes a resource and add the location to the map. Rocks on the beach look just like rocks until you put yourself in the pre-industrial tool making mindset.
3. Gather a representative collection of some of the resources located and placed in labeled plastic bags. The students should also gather the material needed for making a point. Students may desire to collect additional resources as a homework assignment.

#### **Class II:** Map Making

1. After the field trip, the students will pool their knowledge of the area and create a large map on butcher paper or substitute material showing resources and their location along with the material collected.
2. As an alternative, the class may create a three-dimensional tabletop display of the area. View an example tabletop display on the Alaska Native Knowledge Network.
3. Add information to the map about the use of resources.
  - a) Have the students create a two column table with one side naming the resources and the other side as uses of the resources, for example:

<u>Resource</u>	<u>Uses</u>
Trees	boats, plates, dolls, bow/arrows...
Stones	adze, oil lamp...

- b) Continue to brainstorm about the many uses of each resource. To generate ideas, show pictures of artifacts found on the website: <http://alaska.si.edu> or in the companion book to the exhibit “Living Our Cultures Sharing Our Heritage”.
- c) In conclusion, have a class discussion about the resourcefulness, skill, and creativity of our Sugpiaq/Alutiiq ancestors when using local materials.

### **Class III: Making a SLATE/Slate Punga/Point**

In the Sugpiaq/Alutiiq culture there are two techniques that were traditionally used to create points. During the early coastal period from 5500-1500 B.C. the distinctive “saw and snap” technique was used to create tools. Using a sharp-edge boulder flake, artisans carved parallel grooves into a piece of raw slate and then snapped along the grooves to produce a long, linear preform. They abraded this preform with a harder rock to form a lance and sharpen its edges. However, this form of slate grinding did not become widespread until about 2500 B.C. Prior to this, artisans chipped stone points to form an edge and refined and sharpen by using wood or antler tines. Both of these techniques are covered in the instructions.

Follow these steps to create your own SLATE/slate punga/point:

1. Select a piece of slate. There are many different types of slate, and not all slate is suitable for tool production. The ideal material is hard with few visible layers. A good way to test slate is to break it into pieces and observe how they fall apart. Choose a thin sturdy fragment, one that is internally cohesive.
2. Use a hard beach cobble (a water rounded rock) to chip your thin leaf of slate into a rough tool form – working along the edges. Another way of creating a rough tool, particularly if you wish to make a lance, is to saw the slate with a hard, sharp rock. A flake from a beach cobble works well as a saw. With the flake, wear grooves into the slate from both sides and then gently snap the pieces apart along the groove.
3. Use a hard, flat beach rock to grind a smooth surface on both faces of your tool. Keep the tool flat as you grind. Water and a small amount of beach sand make a good lubricant and will speed the grinding process. Keep grinding until you have a smooth flat surface. Try to remove any nicks or indentations in the slate.
4. Sharpen the edges of your tool by grinding at an angle. Turn the tool over to grind both sides of each edge. This will create a bevel (a v-shaped edge) that can be sharpened and resharpened.
5. To test the sharpness of the point, have the students try to cut a piece of twine, cloth, and paper and write down the results.
6. Create a display of the points.

### **Class IV: Making a Fish Iqsak/Hook**

Early settlers fished for cod, halibut, and other bottom fish using hooks made by attaching a sharp bone to a curved shank. On pages 110 and 177 of “Looking both Ways” are illustrations of two types of hooks.

A V-shaped halibut hook floated just above the bottom of the sea, held down by a stone weight. A strong line made of kelp ran to the surface, attached to a seal stomach buoy. The opening of the hook was just wide enough for the fish to put its mouth over the bait. Hooks of this type probably originated on the Northwest Coast.



1. Using both illustrations from the book or website, have the students closely observe how each hook was constructed and from what type of material.
2. Each student will then write a brief outline on how they would create each type of hook.
3. If time permits, allow each student to create their own hook following their instruction and making observations of the techniques used by adding suggestions to the instructions that would help someone else create a similar item.
4. Display the hooks and steps each student used.
5. Refer to Grasses Heritage Kit for instructions on braiding kelp for fishing line.

**TOOLS: DIVISION OF LABOR BY GENDER: 7-9 (3)**

**Grade Level:** 7-9

**Overview:** The students will examine the Smithsonian Arctic collection of artifacts from the Far North cultures to determine the roles of men and women in traditional societies. Girls in the class will explore items on the website that belonged to, were used by, or were made by women, while boys explore the same for men. They consider the complementary nature of the division of labor in these cultures.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<b>E8:</b> Students who meet this cultural standard are able to identify and appreciate who they are and their place in the world.	<b>History B1e:</b> A student who meets the content standard should comprehend the forces of change and continuity that shape human history through the following persistent organizing themes: major developments in societies as well as changing patterns related to class, ethnicity, race, and gender.	<b>C1:</b> Students should know the Sugpiaq/Alutiiq traditional ways of their community: helping elders, respect for others, pride in community, sharing, subsistence, knowledge of traditional use of medicinal plants.

**Estimated Time:** Two 50-minute class periods

**Lesson Goal:** To understand the different roles and responsibilities of men and women in the cultures where it was essential for physical survival and the continuity of the community and the survival of traditional cultures.

**Lesson Objectives:** Students will:

- Examine the collection to determine the respective roles of men and women in traditional societies.
- Explore continuity and change in the respective roles of men and women in their own community.
- Explore what they must learn in order to be a good, contributing member of society through studying the roles of our Sugpiaq/Alutiiq ancestors.

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
Men		nupallkiaq
Women		arnaq
Gender		akika

**Materials/Resources Needed:**

- Access to the website <http://alaska.si.edu>
- Individual computer access
- Student handouts: “Division of Labor by Gender” and “The Girl Who Was Left Alone” (attached)
- Companion books to the website:

- Crowell, Aron L., Steffian, Amy F., and Pullar, Gordon L. (2001). Looking Both Ways Heritage and Identify of the Alutiiq People. Fairbanks, Alaska. University of Alaska Press.
- Crowell, Aaron L., Worl, Rosita, Ongtooguk, Paul C., and Biddison, Dawn D. (2010). Living Our Cultures Sharing our Heritage, the First Peoples of Alaska. Washington D.C. Smithsonian Institute.

**Websites:** <http://alaska.si.edu> Retrieved 2.20.13 View cultures and tools

### **Teacher Preparation:**

- Review the attached handouts (reproduced from Smithsonian Lesson Plans) “Division of Labor by Gender” and “The Girl Who was Left Alone” and make copies for each student.
- Review the navigation of the website and examine items traditionally used, owned, or made by men and women.
- Sugt’sun vocabulary words are presented throughout the lesson. Students should repeat these words in unison and use them in their classroom assignments.

### **Opening:** Division of Labor by Akika/Gender

1. Divide the students into small groups and instruction them to list gender related task on a sheet of notebook paper folded in half (horizontally) with one column labeled suk/men and the other arnaq/women.
2. Trade the list with another group and add tasks not on the original list.
3. Regroup the students to discuss:
  - a) How do they, as 21<sup>st</sup> century people, know the division of tasks by gender?
  - b) Why would their gender be more capable of performing the task than the opposite gender?
  - c) Do students feel constrained by these akika/gender roles?
  - d) Do any girls hunt, or boys cook?
  - e) Does preservation of the traditional culture mean maintaining all of these akika/gender distinctions?
4. What conclusion did the students make and why?

### **Activities:**

Vocabulary used in this lesson:

- Division of labor: a system in which individuals do different jobs, depending on their skills or roles in society; no single individual is able to accomplish everything by himself or herself, but collectively the society fulfills its needs and is able to survive and continue.
- Specialization: a concentration on a specific branch of knowledge or work.
- Anaktuq (in the Inupiaq language) and Kala’alek (the original Alutiiq term) are the words for shaman or individual who can enter the spirit world more easily than most and bring about changes in hunting luck and human health.
- Sinew: a tendon, often used in the cultures of the Far North as thread.
- Ulu: a semi-circular knife associated particularly in the Inuit cultures of the Far North.

**Class I:** Specialization

1. Write the word “specialization” on the board. Ask the students for a couple of examples of areas they specialize in. Assign a fast-write: “My area of specialization is...”. Students should use their journals.
2. When the fast writes are done, ask for volunteers to share. Talk about how specialization and division of labor go hand-in-hand. Define “division of labor” as a system in which different individuals do different jobs, depending on their skills or roles in society. No one individual is able to accomplish everything by himself or herself, but collectively the society fulfills its needs and is able to survive and continue.” Ask students to imagine a society where there is no specialization and no division of labor. What would it look like? How would it be different from the world they live in? Write their ideas on the board as they talk. Suggest that the students take notes in the journals, as it will assist them in completion of the student handout.
3. Note that there has probably never been a human society without some degree of specialization or division of labor, but the degree varies. The contemporary American system relies on a high level of division of labor. To illustrate this point, ask students how many of their families’ needs are met purely within the family without relying on someone else to get food, water, transportation, or education.
4. The most common type of division of labor in human society is between men and women. Discuss why this may be so. Discuss the extent to which it is so in your community. Extend the discussion to issues of equity and fairness. Differentiate between a division of labor that relies on special skills and one that relies on one’s sex, age, or appearance.
5. Conclude the discussion with the statement that many of the “hunter-gatherer” societies, such as those represented on the website, are thought to be based on a very limited division of labor. Students will discover through their internet research that not only is there a great deal of specialization, some based on ability and some on sex, but also this specialization is incorporated into the social and ceremonial system.

**Class II:** Internet research on division of labor by akika/gender

In the traditional culture there were special jobs for suk/men and arnaq/women for which they used tools created to make their work easier. Arnaq/Women had the specific responsibility to maintain the home; gather, preserving, and cooking food; tanning hides and sewing; and caring for children. Suk/Men were responsible for providing for the family by hunting, trapping, and fishing; making tools; and teaching sons to hunt and fish.

1. Distribute the handout “Division of Labor by Gender” and allow time in class for them to complete their research and fill in the study guide. Remind the students that the girls will explore items that belonged to, were used by, or were made by women, while the boys will explore the same for men.
2. When the research and study guides are completed, pull the class together and discuss student answers, particularly to the last four questions that ask for generalizations and judgments.

**Class III:** “The Girl Who Was Left Alone”

As a way to pull the ideas from this lesson together, read the student handout, “The Girl Who Was Left Alone.” The story contains the very common motif of shape shifting and the ancient ability of people and animals to enter each others’ worlds in disguise. Relate motives of people.

Discuss why a father would be so upset with a daughter who wouldn't marry. Relate the discussion to the students' work on division of labor by gender among the indigenous peoples of the Far North.

#### **Class IV: Cultural Essays**

Continue the enrichment covered in question 5 in the student handout on reading cultural essays on the website to search for clues about the different roles men and women played in the societies.

Also, the exhibit catalog references (Living Our Culture) can be utilized:

- “Introduction” by Aron L. Crowell (pps. 12-26)
- “Inupiaq” by Beverly Faye Hugo (pps. 45-47, 50-51, 55, 59-62, 69)
- “First Seal Hunt” by Paul Asicksik Jr. (p.67)
- “St. Lawrence Island Yupik” by Paapi Merlin Koonooka (pps. 76-78, 80-81, 85-87, 92-93)
- “Yup'ik” by Alice Aluskak Rearden (pps. 97-121)
- “Unangax” by Alice Petrivelli (pps. 124-125, 128, 132, 136, 138-141)
- “Sugpiaq” by Gordon L. Pullar (pps. 153, 164, 172)
- “Athabaskan” by Eliza Jones (pps. 176-183, 186-189, 194-197)
- “Tlingit” by Rosita Worl (pps. 206-209, 214-225)
- “Haida” by Jeane Breinig (pps. 230-241)
- “Tsimshian” by David Boxley (pps. 258-259, 263-265)

#### **Activity V: Going further: Roles of Children**

1. By using the Internet resource website and companion books listed in this lesson, find the activities that children were assigned to do by gender. Have the students make a list of the responsibilities by gender.
2. Discuss how this compares to the responsibilities of children today and the value of their contribution to the community.



## STUDENT HANDOUT 1: Division of Labor by Gender

### DIRECTIONS:

You will be examining items on the website that are made, used or owned exclusively by men or women. Find at least seven objects. As you undertake the research, use these questions as a study guide.

1. Are you researching items for men or women? \_\_\_\_\_
2. Fill in this chart with as many items as possible from the website. An example for men is given.

Item Name (English and indigenous language, if available)	Item Number	Culture	Indicate whether it was made, used or owned by men or women
<i>Tunic (dog)</i>	<i>E064278</i>	<i>Athabaskan</i>	<i>Used and owned by men</i>



3. Choose one of the items in your table. In what way were members of the opposite sex involved with this item (if at all)?

---

---

4. Write one thing that all the items on your list together tell you about division of labor and specialization in indigenous cultures of the Far North.

---

---

---

5. Enrichment: Read three of the cultural essays on the website. Search for clues about the different roles men and women played in the societies. Write a short paragraph that describes the main roles that members of your gender assumed in one or more of the cultures. Be sure to identify which culture(s) you are talking about.

---

---

---

---

---

6. Based on the reading you have done on the website, how were the tasks of both men and women necessary?

---

---

---

---

7. In what way do the ceremonies relate to the division of labor along gender lines?

---

---

---



## STUDENT HANDOUT 2: The Girl Who Was Left Alone

Adapted from the story as told by Paul Monroe of Noatak

This is an Inupiaq story from Noatak, Alaska, told by Paul Monroe to Edwin S. Hall, Jr. in 1964-65. Adapted from *The Eskimo Storyteller* (pp. 315-318), edited by Edwin S. Hall, Jr., University of Alaska Press, 1998.

There was a beautiful girl. Her hair was long and thick and she always had it braided just so. She was strong, too. And she could sew. Everyone knew she did beautiful work. Her father was the best hunter in the village. So lots of men wanted to marry her.

She had three brothers, all married. But the girl did not want to get married. Her father tried and tried to marry her off. She said no to every man who came by. No one could get her to say yes.

Finally one day her father was fed up. He told everyone in the village, "Pack up. We're going to leave. But don't tell my daughter we're going." Then he got an *anatkuaq* (shaman) to put the girl into a deep sleep. He took away all her clothes, snares, everything.

The oldest son's wife didn't like what was happening. She loved her little sister-in-law. She hid a needle, some sinew and an ulu inside the house. She hid some old clothes where the girl would find them when she woke up. And she hid a seal poke with a little bit of oil in it. Everyone left.

When the girl woke up no one was there. She did not know what had happened. But she found the things her sister-in-law had hidden for her. She made boots from the seal poke. She made snares from the sinew. She snared some ptarmigan, and they kept her alive.

When summer came, she walked down river. She saw some fish and caught them in a net she made. While she was walking, she saw a house far away, but she did not go toward it. Then she saw a freshly killed caribou in the trail in front of her. She dried the meat and tanned the skin. She took out the sinew for thread. The next day she found another caribou and did the same thing. This happened several times.

One day a young man came up to her. "I killed those caribou for you," he said. "I want you to come home with me to be my wife." Well, the girl who did not want to marry didn't know what to do. She thought a while. Then she went with him. She knew she would die without someone to hunt for her.

In her new home, the girl had the job of cooking all the food. Her mother-in-law made clothes. This gave the girl an idea. She remembered her needle, sinew and ulu. She knew her favorite sister-in-law had left them for her. She started making a fancy parka for her brother's wife.

When the parka was finished, the girl, her husband and his two brothers set out to find other people. Soon they found her father's new village. She went inside a house and there was her family. She walked right past her father. She went straight to her sister-in-law and gave her the parka.





Her father wanted to hug her, but she kept away from him. She could not forgive him for leaving her all alone.

Soon there were loud noises outside, like a fight. Something growled and then howled. The people all ran outside and saw that one of the men had killed a wolf. There were two other wolves standing at the edge of the village. The girl knew that the dead wolf was one of her husband's brothers. She ran to the other wolves, turning into a wolf herself. She never went back to her father's village, but stayed a wolf the rest of her life with her wolf husband.



## TOOLS: LIVING FROM LAND AND SEA: 7-9 (4)

**Grade Level:** 7-9

**Overview:** The students will explore tool artifacts from the Smithsonian Arctic Exhibit website that were used by peoples of the North to hunt on both land and sea. They learn that every successful hunt is the result of good preparation and is followed by the traditional processing, preserving, and sharing of the food.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
D4: Students who meet this cultural standard are able to gather oral and written history information from the local community and provide an appropriate interpretation of its cultural meaning and significance.	<b>Geography E1:</b> Understand how resources have been developed and used. <b>Geography E2:</b> Recognize and assess local, regional, and global patterns of resource use.	SS1: Students should be taught the appropriate use for subsistence equipment and identify for flaws: Be able to identify appropriate equipment for tasks, keep hunting, trapping, and gathering equipment clean and in order.

**Estimated Time:** Four 50-minute class periods

**Lesson Goal:** Gain knowledge of the traditional tools used for harvesting from the land and sea.

**Lesson Objectives:** Students will:

- Investigate two methods of hunting, one on land and one on sea, and the tools required for each hunt.
- Describe how the chosen artifacts fit into the four-part traditional hunting cycle of preparation, hunting, processing of the meat, and distribution.

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
Harvesting		katurqiq
Hunting		pisurluni
Land		nuna
Sea		imaq

**Materials/Resources Needed:**

- Individual access to computer
- Wall map of Alaska and Eastern Siberia
- Student handout “Living from Land and Sea” reproduced from the Smithsonian Arctic Studies Center
- Crowell, Aron L., Steffian, Amy F., and Pullar, Gordon L. (2001) Looking Both Ways Heritage and Identity of the Alutiiq People. Fairbanks, Alaska. University of Alaska Press.
- Crowell, Aron L., Worl, Rosita, Ongtooguk, Paul C., and Biddison, Dawn D. (2010) Living our cultures, sharing our heritage. Washington, D.C. Smithsonian Books.

**Websites:**

**Teacher Preparation:**

- Review of the website's navigation scheme
- One copy per student of "Living from Land and Sea" handout (attached)
- Wall map of Alaska and Eastern Siberia
- Display on the SmartBoard the seasonal hunting cycle found on page 139 of "Looking Both Ways", which represents the subsistence cycle in the village of Nanwalek.
- Invite a recognized hunting expert to assist in the opening activity.
- Invite elders to participate in Class IV
- Collection of modern hunting implements
- Suggest vocabulary words are included throughout the lesson. Students should repeat the words when presented.

**Opening:** Pisurluni/Hunting Implements and Techniques

- Have a display of modern pisurluni/hunting implement set up in the classroom (bow and arrow, a fishing gaff, halibut hook, rabbit snare, etc.)
- Ask the students to connect them to the traditional pisurluni/hunting tools. Display hunting tools by accessing <http://alaska.si.edu> and select hunting.
- Discuss if there are traditional implements that have not been improved upon?
- Discuss the ideal time to harvest animals. Hand out copies of the attached seasonal round and ask the students to fill in the information.

**Activities:**

**Class I:** Pisurluni/Hunting methods on Nuna/Land and Imaq/Sea

1. Have students make two columns on a sheet of paper, one for nuna/land and one for imaq/sea. Ask the students to work in small groups to fill in the columns with as much information as they can about pisurluni/hunting methods related to each. Be specific about each method within the categories. For example, fishing could be done with nets, lines, weirs, and spears depending on the type of fish being targeted.
2. Ask the students to trade lists and add information.
3. As a class, make comparisons between traditional hunting implements and present day implements.

**Class II:** Pisurluni/Hunting Implements

1. Project or print the website's cultural map as a reminder to students of the groups of people that are likely to practice sea hunting and those that are likely to undertake hunting on land. If you have a wall map with a scale, ask a student to measure the size of one of the coastal cultures (either Inupiaq or Yup'ik) from coast to interior border. Students will find that even the coastal culture areas have several hundreds of miles of interior territory as well. Therefore with few exceptions (Unangax and St. Lawrence Island Yup'ik), almost all groups on the coast would also engage in hunting land animals. Note that the Athabascans and some Eastern Siberians would have engaged in much more land hunting than sea hunting due to their geography.
2. As guided practice before student undertake individual research, project the website and go to the Search Page. Select all cultures but choose only the Hunting category. Dozens

of artifacts will come up. Randomly choose one and investigations of that object, looking at both the Elders' Discussion and History sections.

3. Distribute the student handout and explain that students will undertake individual (or paired) investigation of one land-hunting implement and one sea or ice-based implement. Go over the assignment sheet to be sure students understand what is expected of them.
4. Allow sufficient time for the students to complete their investigation.

### **Class III: Sharing Knowledge**

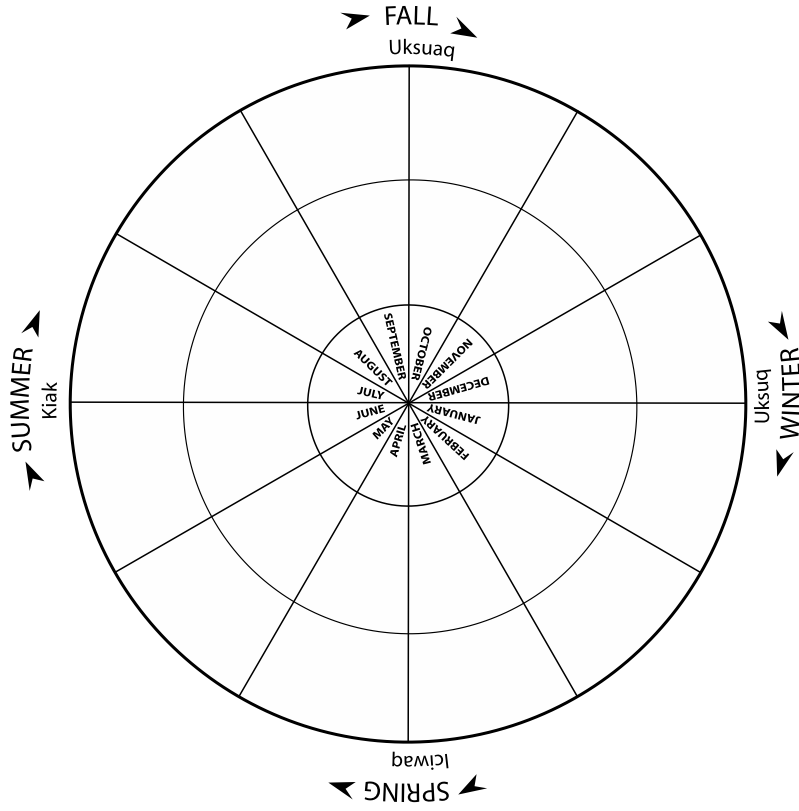
1. When students have completed their assignments, regroup, and share. Go over some or all of the questions together, pooling information. Encourage student participation, explaining that every student will be expected to remember at least one interesting thing that is said by a classmate during the discussion.
2. Ask students to comment on the most impressive, interesting, or unusual thing they learned during their website research.
3. Have students do a fast-write on the topic, "The most interesting thing I learned about hunting in the North from one of my classmates." Share fast-writes.

### **Class IV: Importance of Elder Knowledge**

1. With this basic information that spans all cultures, ask the male students to work in teams to develop questions they would like to ask the elders/recognized experts in their community about hunting implements and hunting knowledge. Ask the female students to develop questions about processing and preservation of food. It was traditional for fathers to teach sons about hunting and mothers to teach daughters about processing and preservation of food.
2. Pull the groups together to review the questions.
3. For homework, ask the students to begin by seeking knowledge from their family (parents, Grandparents, Aunts and Uncles) and write down the information and stories to be shared with the class. The students may also demonstrate by preparation of and serving a traditional dish.
4. Invite several Elders into the classroom to share their knowledge and have the students participate by sharing what they have learned about hunting in their community.

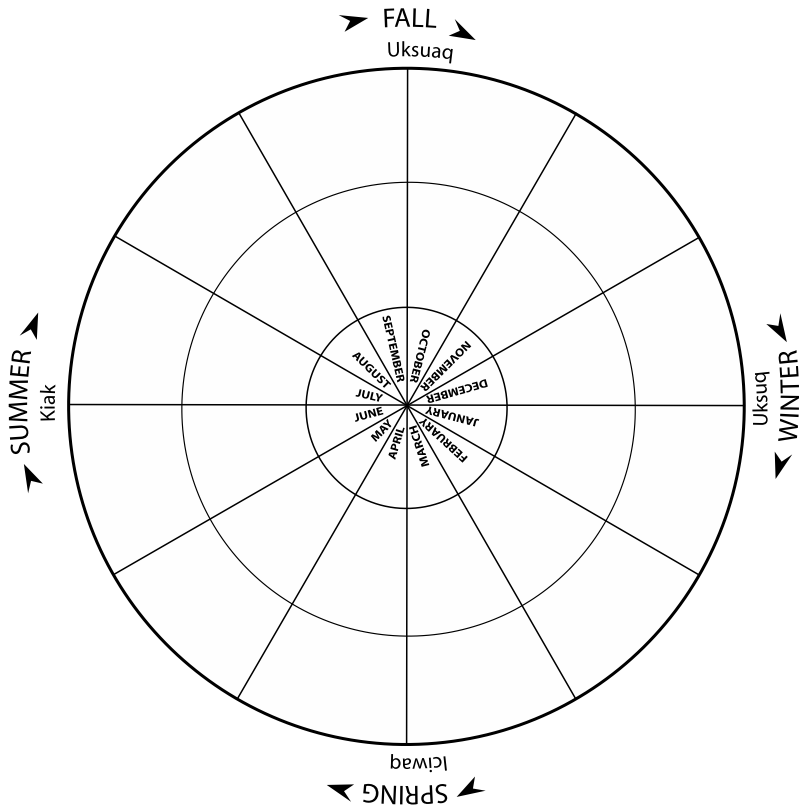
ANNUAL SEASONAL ROUND OF

Harvest and Outdoor Activities



ANNUAL SEASONAL ROUND OF

Harvest and Outdoor Activities





## STUDENT HANDOUT: Living From the Land and Sea

### DIRECTIONS:

Choose two objects used to hunt, one used on land, the other at sea or on the sea ice. The two items must be from different cultures. Read the Elders' Discussion and the History sections about the objects, then answer these questions:

#### A. Land-based hunting item:

1. Item name (English and indigenous language, if available):  
\_\_\_\_\_
2. Object number: \_\_\_\_\_
3. Culture that produced the item: \_\_\_\_\_
4. Provenance (where the object came from): \_\_\_\_\_
5. What animal was this item used to hunt? \_\_\_\_\_
6. Was the item used for any purpose other than hunting? Explain.  
\_\_\_\_\_  
\_\_\_\_\_
7. What season was the object used? \_\_\_\_\_
8. How was this object used? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

#### B. Sea-based hunting item:

9. Item name (English and indigenous language, if given):  
\_\_\_\_\_
10. Object number: \_\_\_\_\_
11. Culture that produced the item: \_\_\_\_\_
12. Provenance (where the object came from): \_\_\_\_\_
13. What animal was this item used to hunt? \_\_\_\_\_
14. Was the item used for any purpose other than hunting? Explain.  
\_\_\_\_\_  
\_\_\_\_\_
15. What season was the object used? \_\_\_\_\_
16. How was this object used? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



C. General questions:

17. Many people have commented about the ingenious methods peoples of the North used to hunt and trap. What impressed you most about one or both of the objects you investigated?

---

---

18. People usually think that only men hunted in the old days, but this is not true. Find information on the website that explains women's roles in hunting and retell the story in your own words.

---

---

---

---

19. Make a list of the skills a person would need in order to successfully use one of the items you studied. List at least six skills.

---

---

---

---

---

---

20. Every successful hunt involves more than just killing an animal. From your research on the website, tell how one group of people accomplished the four parts to the hunting cycle:

- a. Preparation (you can write about either physical or spiritual preparation for the hunt):
- b. Finding and killing the animal (you don't need to write more about this part; you have already talked about it above).
- c. Preparing the meat for storage or eating:
- d. Distributing the food to others (you can talk about who shared a daily meal or about using food in a ceremony or celebration):

---

---

**TOOLS: EXPLORATION AND CONTACT: 7-9 (5)**

**Grade Level:** 7-9

**Overview:** Through Russian and European contact with the Alaskan Native cultures, a legacy of change can be discovered through place names; encounters both positive and negative; cultural blending; and exchange of ideas and tool technologies.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
E7: Students who meet this cultural standard are able to determine how cultural values and beliefs influence the interaction of people from different cultural backgrounds.	<p><b>History A1:</b> A student who meets the content standard should understand chronological frameworks for organizing historical thought and place significant ideas, institutions, people, and events within time sequences.</p> <p><b>History A6:</b> A student who meets the content standard should know that cultural elements, including language, literature, the arts, customs, and belief systems, reflect the ideas and attitudes of a specific time and know how the cultural elements influence human interaction.</p>	CE9: Students should have respect and appreciation for their own culture as well as the cultures of others.

**Estimated Time:** Three 50-minute class periods

**Lesson Goal:** To learn how contact brought about changes to the subsistence way of life (i.e. technology and a cash society).

**Lesson Objectives:** Students will:

- Identify the impact of contact with explorers by completing independent research through internet resources and books
- Compare and contrast the effect of new technologies on subsistence
- Analyze the effect of a cash based society on subsistence
- Summarize their research to be placed on the timeline

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
Explorer		alangaqt
Contact		alangaqat
Subsistence		Uksumen Ililialuta

**Materials/Resources Needed:**

- Wall map of Alaska
- “Contact: handout (attached)
- Attached article “Exploration and Contact History of Western Alaska” by James W. Van Stone
- Access to individual computers for research
- Crowell, Aron L., Steffian, Amy F., and Pullar, Gordon L. (2001) Looking Both Ways Heritage and Identity of the Alutiiq Peoples. Fairbanks, Alaska. University of Alaska Press. (read pps. 54-61 Russian Conquest and Colonial Rule and pps. 76-77 The Impact of Traumatic Events on Alutiiq Identity)



- Fitzhugh, William W. and Crowell, Aron. (1988) Crossroads of Continents Cultures of Siberia and Alaska. Washington D.C. Smithsonian Institution Press. (read pps. 70-82 The Story of Russian America)
- Korsun, S.A. (2012) The Alutiit/Sugpiat a catalog of the collections of the Kunstkamera. Fairbanks, Alaska. University of Alaska Press.
- Luehrmann, Sonja (2008) Alutiiq Villages under Russian and U.S. Rule. Fairbanks, Alaska. University of Alaska Press.

**Websites:**

As directed by the teacher as an appropriate school-use site

**Teacher Preparation:**

- Review of the materials in the lesson addendum

**Opening:** As a class discuss the impact of explores on other people and cultures. Consider what diseases affected the people, impact of new technologies, and the introduction of animals, plants, beliefs, and customs.

**Activities:**

**Class I:** Explorers

1. Display the map found in “Crossroads of the Continents”, pg. 73 of Alaska exploration by Russia.
2. Assign specific explorers (refer to the “Contact” list included with the lesson) to students or groups of students for further research using the Internet and resource material referenced above.
3. Have the students write their answers to these questions:
  - a) How did the legacy of the explorer live on through his name (i.e. place names, descendants)?
  - b) What discoveries did he make?
  - c) What Native Villages were contacted and what was the effect of contact?
  - d) What materials were traded?
  - e) Were new tool technologies introduced?
  - f) What other interesting facts did you discover?
4. When completed, ask the students to give a brief oral report to the class on what they have learned about their assigned explorer.

**Class II:** Subsistence and Cash Based Society

1. How did the Russian fur traders impact hunting?
2. Did the role of men change in providing for their families?
3. What was the impact on the lives of women and children?
4. What was purchased from the company store?
5. Was trade/barter still a part of purchasing goods?

**Class III:** Class Review and Discussion

1. Draw together all the information that the students have discovered through a class review and discussion around the central theme of contact and changes in subsistence technology.

Suggested questions for discussion:

- a) What was one event or fact you learned that was of the most interest to you?
- b) When did the Russian Colonial Rule begin and end?
- c) How was the Native culture impacted? (e.g. religion, authority of village chiefs, subsistence, cash society)
- d) What impact did the Russian-American Company have on Native culture?
- e) What new technologies were learned?
- f) Did the Russian and Native cultures blend together? Explain.

## 2. Challenge Game

- a) Have each student develop a challenge question from their research and write it on an index card along with the correct answer and their name.
- b) The teacher will read a question, and request a response. The first student to stand and answer the question correctly will remain standing. If incorrect, the student will sit down and the next standing student will be given a chance to answer the question.
- c) The game will continue until all students have had a chance to respond and all are standing.
- d) Variation in Game: Form 3 or 4 member teams. When a question is asked the team leader will raise their hand. The team will have 30 seconds to confer before giving their answer to the question. Play will continue until all questions have been asked.
- e) If score is kept, the teacher will ask a tiebreaker question.

## CONTACT TRAGEDY AND SOCIAL CHANGE

During the late eighteenth century the Russian fur traders began their exploitation of the Native people that caused the loss of Native sovereignty, hunger, epidemics, new diseases, and population decline. The sea otter was hunted to near extinction and the Stellar Sea Cow (a northern relative of the manatee) became extinct from over hunting by Russian Crews. Trade items were exchanged for furs and hunting with guns under Russian supervision replaced traditional hunting methods.

Russian Colonial Rule and the Native Communities evolved into a bi-cultural society in which Russian language, customs, and religion gained acceptance. Russians also adapted to Native ways. They depended on indigenous foods, clothing, boats, and dwellings.

Many men explored Alaska and made an impact on the land and the Native villages of Alaska. Specifically, the Russian-American Company continued exploration of the interior of Alaska to gain access to other fur bearing animals. Other men followed after the sale of Alaska to the United State. Canneries were established in the 1880s and fishermen and workers from Scandinavia, Italy, China, and other Asian locations were employed as contract laborers. Trade continued to be an acceptable form of exchange into the 1920s. The subsistence live style began to change when cash and credit became the means of obtaining goods from company stores.

### Early Explorers:

1647	Semyon Dezhnev (expedition route established knowledge of “Great Land”)
1728	Vitus Bering and Alexei Chirikov
1741	Vitus Bering (established Russian sovereignty over Alaska)
1741	Georg Wilhelm Steller
1763-1764	Stepan Glotov to Kodiak Island
1768-1769	Levashev-Krenitsyn Expedition (first ethnographic account of eastern Aleut)
1778	James Cook
1779	Ignacio de Arteaga y Bazan
1783	Potap Zaikov to Prince William Sound
1784	Grigorii Shelikhov to Kodiak Island
1785-1794	Joseph Billings and Sarychev (sent by Russia’s Catherine the Second)
1788	Lopez de Haro
1790	Salvidor Fidalgo
1791-1795	George Vancouver
1794-1799	Alexander Andreyevich Baranov
1799	Russian-American Company or RAC (expeditions into interior)
1803-1806	Adam Johann von Krusenstern-Lisianskii expedition
1815-1818	Otto Van Kotzebue
1825-1828	Frederick W. Beechey
1867	Russia sold Alaska to United States, little immediate impact on daily lives
1868	Alaska Commercial Company and Western Fur and Trading Company

# Activities for Grades 10-12

## TOOLS: INTRODUCTION TO TOOLS OF THE NORTH: 10-12 (1)

**Grade Level:** 10-12

**Overview:** This lesson is an introduction to the many tools created and used by the Sugpiaq/Alutiiq and the Sugt'stun name used for each tool artifact.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<b>B1:</b> Culturally knowledgeable students are able to build on the knowledge and skills of the local cultural community as a foundation from which to achieve personal and academic success throughout life. Students who meet this cultural standard are able to: 1) acquire insights from other cultures without diminishing the integrity of their own;	<b>World Languages B1:</b> A student who meets the content standard should: understand the relationship between language and culture.	<b>CE9:</b> Students should have respect and appreciation for their own culture as well as the cultures of others.

**Estimated Time:** Two 50-minute class periods

**Lesson Goal:** Discover the tools that were used by villages within Sugpiaq/Alutiiq indigenous geographic area.

**Lesson Objectives:** Students will:

- Identify the location of the villages of the Sugpiaq/Alutiiq peoples in which tools were created
- Compare tools among Alaska native cultures
- Learn the Sugt'stun name for various tools

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
Lamp	lampaaq	laampaaq
Adze	cuu'uk	cuu'uk
Bowl		ciquq
Gut Scraper		keligsún
Woman's Knife		arnat uuluat
Net Sinker		kugyat kiicat
Wedge		qupuisutet
Ice Scratcher		cikut perercarsutet
Throwing Board	nukaq	nukaq

**Materials/Resources Needed:**

- Internet access for research
- Crowell, Aron L, Steffian, Amy F., and Pullar, Gordon L. (2001) Looking both ways heritage and identity of the Alutiiq people. Fairbanks, Alaska. University of Alaska Press. (included in kit)
- Crowell, Aron L.; Worl, Rosita; Ongtooguk, Paul C.; and Biddison, Dawn D. (2010) Living our cultures sharing our heritage the first peoples of Alaska. Washington, D.C. Smithsonian Institution Press. (included in kit)

- Korsun, S.A. (2012) The Alutiit/Sugpiat a catalog of the collection of the Kunstkamera. Fairbanks, Alaska. University of Alaska Press. (included in kit)
- Wall map: Native Peoples and Languages of Alaska produced by the Alaska Native Language Center (included in kit)
- Tool handout in addendum
- Sugt'stun vocabulary pronunciation CD (included in kit)

**Website:**

<http://alaska.si.edu> Retrieved 11.5.12, Sugpiaq Culture, tools

**Teacher Preparation:**

- Contact the local museum director for ten tool artifacts that can be displayed for identification in the opening activity.
- Request a museum representative to be available in the classroom for explanation and questions about the artifacts in the opening activity.
- Review the navigation scheme of the website <http://alaska.si.edu>.
- Review the Sugt'stun vocabulary pronunciation CD for the words to be used in this lesson. If available, arrange for an Elder or recognized language expert to assist in providing instruction on the correct pronunciation of Sugt'stun tool names during Class I.
- **Background Information:** Names of the indigenous groups of Alaska and eastern Siberia: Inupiaq, St. Lawrence Island Yupik (Siberian Yupik), Yup'ik, Unangax (also called Aleut) the name appears as Unangan on the map, Sugpiaq (also called Alutiiq), Athabascan, Eyak, Tlingit, Haida, Tsimshian, Chukchi, Koryak, and Even.

**Opening:** What's In a Name?

Display a group of tool artifacts numbered from 1 to 10 on the table. Provide the students with a list of the tool name in Sugt'stun and English and ask the students to match the tool number with the correct Sugt'stun/English name.

**Activities:**

**Class I:** Sugpiaq/Alutiiq Artifacts

1. Divide the students into research groups, assigning one or more of the twelve artifact categories of baskets, homes, house wares, jewelry, toys, clothing, boats, fishing, hunting, tools, travel, and war. There are sixty-six Sugpiaq/Alutiiq artifacts to research on the website <http://alaska.si.edu>.
2. In addition to the website, the students can refer to the three reference books listed above which are included in the kit.
3. Each student group should write a brief description of the type of artifacts found in their assigned category along with the Sugt'stun name and the village in which it was made. Use the attached handout to complete additional information regarding materials used, special features of the artifact, and other interesting information provided on the website.
4. Students should give a brief oral summary of their findings to the class.

**Class II:** Artifact Discovery and Reading of Cultural Essay for all Native Cultures

1. Divide the students into nine groups and assign each group one of the following cultures: Inupiaq, St. Lawrence Island Yupik (Siberian Yupik), Yup'ik, Unangax, Athabascan, Tlingit, Haida, Tsimshian, and Eastern Siberian (Chukchi, Koryak, Even).

Each student in the group will find one or more specific artifacts linked to their assigned culture. Encourage each student in the group to research a different artifact.

2. Follow these procedures when accessing the website <http://alaska.si.edu>:
  - a) Each student will go to the page for his or her culture, click on the “Map-View Region” icon beneath the first picture on the page, and use the zoom features on the map to examine the cultural region in detail.
  - b) Students will note the names of several villages in the region, and then go to the search page to find objects made in one of the villages in the region.
  - c) Explain to students that the collection does not contain objects from every village, so they may have to search for several village names before finding objects that can be identified with a specific village.
  - d) Students then write brief descriptions of the objects from the settlement.
3. Each student will return to the page on the website that contains the cultural essay for the group he or she has been assigned. The students will read the essay and prepare a short written introduction to that group.
4. Instruct the students to meet with their entire group to pool their knowledge and decide on a group presentation. Information about artifacts from the Sugpiaq culture should be compared to similar artifacts found in the other cultures. The presentation should be no longer than 3-4 minutes. (The student groups may elect one presenter or each student may participate in the presentation.)

**TOOL:**

Name: English \_\_\_\_\_ Indigenous Language \_\_\_\_\_

Materials used to make the tool: (identify local resource/or resource from another region)

---

---

---

Description of artifact: (be as detailed as possible noting size, weight, how parts of the tool are joined together, design elements of color/carvings/ patterns, sketch of item on reverse of page)

---

---

---

---

---

---

---

---

Date of artifact: \_\_\_\_\_

Made, used, or owned by men or women:

---

---

Use of artifact:

---

---

---

---

---



## TOOLS: DAY AT THE MUSEUM: 10-12 (2)

**Grade Level:** 10-12

**Overview:** The students will investigate the artifacts that have been discovered at the archaeological sites located within the ten cultural areas learned about in Tools: 10-12 (1) Introduction to People of the North, by participating in a virtual on-line field trip to the Rasmussen Museum’s Arctic Studies Center. (Eyak has been omitted from the search as artifacts are not available.)

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<b>B2:</b> Students who meet this cultural standard are able to: make effective use of the knowledge, skills, and ways of knowing from their own cultural traditions to learn about the larger world in which they live.	<b>History B1b:</b> A student who meets the content standard should: comprehend the forces of change and continuity that shape human history through the following persistent organizing themes: human communities and their relationships with climate, subsistence base, resources, geography, and technology.	<b>CE9:</b> Students should have respect and appreciation for their own culture as well as the cultures of others.

**Estimated Time:** One day field trip to Anchorage (or virtual on-line tour) and two 50 minute class periods

**Lesson Goal:** To study and compare the development of tools within each Alaska Native culture, materials used, and the similarities/differences in technologies.

**Lesson Objectives:** Students will:

- Write a brief narrative about each culture
- Identify materials used to make the tool, used by men or women, cultural characteristics, and date of artifact.
- Compare the similarities/differences with other Native Cultures.
- Determine if materials used were local resources or trade items.

**Vocabulary Words:** Sugt’stun Dialects

English:	PWS:	Lower Cook Inlet:
Resources		kuturluki
Material (from beach)		Qutem cacai

**Materials/Resources Needed:**

- Access to individual computers
- Master copy of “A Day At The Museum” handout (attached)

**Websites:** <http://alaska.si.edu> Retrieved 2.20.13 (Navigate by selecting Browse, then Culture, View the 3 themes of Community, Ceremony, Environment) Choose the tools to be researched.

**Teacher Preparation:**

- Make one copy of the cultural narrative page, and 3-5 copies of the tool page, per student of “Day at the Museum” handout included in the lesson.

- Sugt'stun vocabulary words are included within the handout. Introduce the Sugt'stun words at the beginning of the lesson and ask students to use these words when giving their group presentation.
- If a trip to Anchorage is possible, arrange for a docent to provide an introductory tour of the exhibit and use of exhibit information on the museum kiosk computers located at the end of each display.

**Opening:** We will continue learning about Native Cultures by studying the tools that were used. Prior to the virtual trip, group students into the Native Cultures represented in the exhibit:

Inupiaq	Athabascan
St. Lawrence Island Yupik	Tlingit
Yup'ik	Haida
Unangax	Tsimshian
Sugpiaq	Eastern Siberian: Chukchi, Koryak, Even

Have each student select three to five different tools from their assigned culture by using the website <http://alaska.si.edu>.

### **Activities:**

#### **Class I:** Trip to the Rasmussen Museum (or Virtual On-line Tour)

1. While at the museum the students will complete the handout for their assigned culture and tools.
2. As time permits, the students groups will investigate one or more of the other cultures to determine if the same technology was evident and note the similarities or differences on the reverse side of the cultural narrative page.

#### **Class II:** Group Reports

1. Allow students additional time to finalize the information on their worksheets and organize the material for their classroom presentation (use pictures and PowerPoint if available). Each report should be approximately 5-7 minutes.
2. Remind the students to take notes during the presentations, which will be helpful in the class discussion to follow.
3. The presentations should include a review of the culture and the information recorded on the tool researched. Allow student groups to organize the presentation so that each student has an opportunity to participate.
4. If the same artifact was studied in different cultures, use the student worksheets in a discussion of similarities or differences.

#### **Class III:** Discussion/Questions

1. Review culture groups and ask students to recall some tools presented the previous day.
2. Facilitate class discussion using the following questions as prompts:
  - a. What were the most commonly used types of resources?
  - b. How did the climate and environment affect how the Native people of Alaska lived?
  - c. What tool artifact did you find most interesting?

- d. Do you think each cultural develop technologies independent of contact with neighbors?
- e. What similarities and differences did you discover between commonly used tools?
- f. Have you discovered anything about the Ainu people?



**TOOL:**

---

Name: English \_\_\_\_\_ Indigenous Language \_\_\_\_\_

MATERIALS/Materials used to make the tool: (identify local RESOURCES/resources from another region)

---

---

---

---

---

---

Description of artifact: (be as detailed as possible noting size, weight, how parts of the tool are joined together, design elements of color/carvings/ patterns, sketch of item on reverse of page)

---

---

---

---

---

---

---

---

---

---

Date of artifact: \_\_\_\_\_

Made, used, or owned by men, women, or children:

---

---

Use of artifact:

---

---

---

---

---

---

---

---

Elder/Recognized Expert Commentary:

---

---

---

---

---

---

---

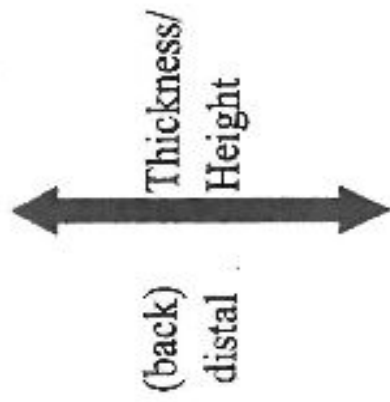
---

**Student Sketch of Artifact**

**Side View**



(front)  
proximal



ventral (bottom)

**Front**  
(side)  
lateral



(side)  
lateral

## TOOLS: HISTORICAL COMPARISON: 10-12 (3)

**Grade Level:** 10-12

**Overview:** Through use of a timeline and the information gathered in the previous lessons on Native culture, students will compare the tool technology of American and Mexican cultures or those of European and Asian cultures.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
E3: Demonstrate an understanding of the relationship between world view and the way knowledge is formed and used.	<p><b>History B1b:</b> Comprehend the forces of change and continuity that shape human history through the following persistent organizing themes: human communities and their relationship with climate subsistence base, resources, geography, and technology.</p> <p><b>History B3:</b> Recognize that historical understanding is relevant and valuable in the student's life and for participating in local, state, national, and global communities.</p>	CE9: Students should have respect and appreciation for their own culture as well as the cultures of others.

**Estimated Time:** Three 50-minute class periods.

**Lesson Goal:** To appreciate the different cultural approaches to tool use and how cultures faced with similar subsistence tasks produce similar tools through comparing the cultures in America and Mexico, or Europe and Asia, with the Alaska Native culture.

**Lesson Objectives:** Students will:

- Develop a timeline from 8,000 B.C. to the 21st century.
- Record information on the timeline based on the themes of technology (tools/materials), environment, historical events, and other interesting factors.
- Visualize the progress of cultures through a comparative timeline.

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
Technology		nutaq pitciat

**Materials/Resources Needed:**

- Butcher paper or similar paper to make a timeline
- Use different colored index cards for each culture to records information to be placed on the timeline
- Chugachmiut Timeline reference attached to lesson 3-6(1) Your Village
- Classroom world history text book
- Use of individual computers for research
- Colored index cards for timeline activity (four separate colors, one for each theme)

**Websites:**

- <http://alaska.si.edu> Retrieved 11/15/12. Select culture, and then select tools.
- <http://anthropology.si.edu/olmec/english/index.htm> Retrieved 3.13.13 Information and artifacts from the Olmec culture

- [http://www.youtube.com/watch?v=n4Fov\\_adYJc](http://www.youtube.com/watch?v=n4Fov_adYJc) Retrieved 3.13.13 The History Channel presentation Pueblo Native American Documentary-Anasazi, run time 41 minutes. (Other related presentations available by Google Search of Anasazi Mesa Verde, select The Anasazi of Mesa Verde, YouTube)
- <http://www.youtube.com/watch?v=q1rVTvrDss> Retrieved 3.13.13 Digging for the Truth-Mystery of the Anasazi, run time 44 minutes
- [http://www.youtube.com/watch?v=P\\_blfldPrnU](http://www.youtube.com/watch?v=P_blfldPrnU) Retrieved 3.13.13 Edward Nelson's Arctic Expedition (1877-1881), run time 10 minutes

### **Teacher Preparation:**

- Review the attached timeline, and select the dates you want to cover.
- If desired, alter the two other cultures you wish the class to investigate. You may decide to consider the Anasazi of Southwestern America and the Olmec of Mexico.
- Review the attached proposed timeline layout and make any desired alterations.
- Introduce the Sugt'stun vocabulary word nutaq pitciat/technology to be used throughout the lesson.

**Opening:** We will be able to compare the progress of cultures by making a comparison of significant development of tool technology.

### **Activities:**

#### **Class I: Timeline Construction and Development**

1. Instruct the students on how to make the timeline by listing tool development within each culture and archaeological evidence. Use both English and Sugt'stun when labeling the timeline for the Sugpiaq culture.
2. Discuss the theme of environment as it pertains to the type of tools developed and historical evidence of introduction of new tool nutaq pitciat/technology from outside the culture.
3. Assign student groups of to each culture. The student groups may further decide to assign members to work on a specific theme.
4. Allow sufficient time for students to complete Internet research (see reference sites above).
5. Students will write their findings on index cards that will be placed on the timeline.
6. Affix index cards to the timeline.

#### **Class II: Group Report**

1. Each student group will prepare a 5-minute oral report on their assigned culture. Pivotal events should be included within each theme.
2. Allow additional time for questions and discussion after each report.
3. Regroup the students into discussion groups focused on the theme of tools to make comparisons within each culture.
4. Optional: Form panels for open class discussion on the theme.

#### **Class III: Independent Reports**

Each student will write a comparative report based on two cultures from the nutaq pitciat/technology timeline. Information should be gathered from the posted timeline, group reports, and theme discussion groups.



Optional topics for reports or discussion:

- When Cultures Collide
- Acculturation
- Changes in Values
- Your Unique Place in Space and Time

	8000 BC- 5,000 BC	5,000 BC- 3,500 BC	3,500 BC- 1,500 BC	1,500 BC- 1000 AD	1000 AD- 1500 AD	1500 AD- 1900 AD	1900 AD- 2012 AD
<b>Alaska</b>							
Technology							
Environment							
History							
Other: _____							
<b>America</b>							
Technology							
Environment							
History							
Other: _____							
<b>Mexico</b>							
Technology							
Environment							
History							
Other: _____							

This timeline layout can be used to organize the collected information.  
Like-colored index cards should be used for each theme within the culture.

## TOOLS: LIVING IN PLACE: 10-12 (4)

**Grade Level:** 10-12

**Overview:** In this lesson students will focus on their community, annual and ritual events, and artifacts maintained in the local museum or tribal office to discover their unique connection with the past.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<b>A1:</b> Students who meet this cultural standard are able to: assume responsibilities for their role in relation to the well-being of the cultural community and their lifelong obligation as a community member.	<b>History C2:</b> A student who meets the content standard should: use historical data from a variety of primary resources, including letters, diaries, oral accounts, archeological sites and artifacts, art, maps, photos, historical sites, documents, and secondary research materials, including almanacs, books, indices, and newspapers.	<b>G7:</b> Students should be knowledgeable about environmental and natural impacts of the area.

**Estimated Time:** One field trip to the local museum; two 50-minute class periods

**Lesson Goal:** Identify how a community maintains its cultural heritage.

**Lesson Objectives:** Students will:

- Investigate Sugpiaq/Alutiiq artifacts at the local museum and relate this to the community’s development.
- Interview Elders about their perspective on community life.
- Discuss and analyze their role in maintaining subsistence traditions through conversation and writing exercises.
- Give a speech about the local geographic area and the need to develop tools to live within that area.

**Vocabulary Words:** Sugt’stun Dialects

English:	PWS:	Lower Cook Inlet:
Community		ilwika
Tools		piktsutet

**Materials/Resources Needed:**

- Access to personal computers for research
- Chugachmiut Timeline in the addendum (use as a guideline for your community)

**Websites:**

- [www.cordovamuseum.org](http://www.cordovamuseum.org) Retrieved 12.12.12
- [www.valdezmuseum.org](http://www.valdezmuseum.org) Retrieved 12.12.12
- [www.cityofseward.us](http://www.cityofseward.us) Retrieved 12.12.12 select museum/view you tube videos of local history/<http://www.youtube.com/bitsofhistory>
- [www.prattmuseum.org](http://www.prattmuseum.org) Retrieved 12.12.12
- [www.tatitlek.com](http://www.tatitlek.com) Retrieved 12.12.12
- [www.chenega.com](http://www.chenega.com) Retrieved 12.12.12
- [www.chugachmiut.org](http://www.chugachmiut.org) Retrieved 12.12.12

### **Teacher Preparation:**

- Plan visit with museum staff
- Permission slips for visit to museum or community repository for artifacts
- When the vocabulary words of tools and community appear in the lesson use the Sugt'stun word and have the students repeat the word.
- Copies of tool worksheet for each student included in the addendum

**Opening:** We will develop our understanding of how technology, our community, and environment enhance our way of life by developing a basic timeline of prehistory (unrecorded events prior to the development of written records), historic period, and present day to use when categorizing artifacts at the museum.

### **Activities:**

**Class I:** Trip to the Local Museum

#### Pre-history

- Begin with tool artifacts from prehistory and note the form and function of the implement, material, marking, and size. Use the attached tool worksheet to keep accurate notes and sketches. Add comments on any changes in the form of the artifact over time.
- Review the written material about the artifacts and record the pertinent information on your worksheet.
- Add dates to the timeline as you progress through the museum displays.
- Answer the following questions about your ilwika/community:
  - When did your ancestor arrive in this location?
  - What types of houses were constructed?
  - How many people inhabited the area?
  - What was the past name for your ilwika/community?
  - What type of transportation was used?
  - What resources were available?

#### History

- Continue using the artifact worksheet to record information. Focus on how piktsutet/tools have changed over time and how harvesting resources began to change.
- As the museum exhibits are viewed, add dates and events to your timeline.
- Record information about the changes in piktsutet/tools and technology foreign contact had on your ilwika/community, for instance the introduction of rifles for hunting.
- What did explorers, archaeologists, and ethnographers record about your ilwika/community?

#### Present Time

- Pictures of the village can provide additional information.
- Use written information to retrieve interesting details regarding events.

When complete, each student will have a chronological summary of the history of their community along with documentation of tool artifacts used during that time period.

To finalize information, use the above referenced web sites.

**Class II: Elders' Perspective**

As a homework assignment, have students interview two Elders from the community about the piktsutet/tools they used and the tasks that they were expected to accomplish as a children and adults.

- Have students prepare questions in advance to help guide the interview process (Examples: What tasks were you expected to do? What instructions were given? What tools did you use for the job? How were you taught about the job?).
- Have students ask permission to share the Elders' stories with the class.
- Have students offer to share with the Elder what they have written and to make any corrections if needed.

**Class III: Village Speech**

Allow the students to select a topic about the ilwika/community that is of interest to them to prepare a speech on. The speech should be approximately 3 minutes. Use of note cards is optional.

Topic suggestions:

- Life in the village during a specific time period.
- Tools that were used for hunting, fishing, and household needs.
- Impact on subsistence hunting during Russian Colonial Rule.
- What comparable tools (tools that did not change over time) are used today to those used by your ancestors in subsistence living?
- What specific tools were created to live within the geographic area of the village?

## TOOLS: IDENTIFYING ARTIFACTS: 10-12 (5)

**Grade Level:** 10-12

**Overview:** This lesson provides an overview of the techniques that are used by archaeologists to identify artifacts and learn about the culture that made and used the item.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<b>D1:</b> Students who meet this cultural standard are able to: acquire in-depth cultural knowledge through active participation and meaningful interaction with elders.	<b>Science E2:</b> A student who meets the content standard should: develop an understanding that solving problems involves different way of thinking, perspectives, and curiosity that lead to the exploration of multiple paths that are analyzed using scientific, technological, and social merits.	<b>CE7:</b> Students should have knowledge of traditional and contemporary tool making.

**Estimated Time:** Four 50-minute class periods

**Lesson Goal:** To become familiar with methods to identify prehistoric artifacts.

**Lesson Objectives:** Students will:

- Identify materials used to make tools
- Accurately describe tool artifacts by recording metric weight and measurements when provided
- Effectively communicate findings in writing

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
Stone		yamaaq
Type		caakucit
Classify		katurluki
Edge		iqua

**Materials/Resources Needed:**

- Master copy of “Prehistoric Artifacts of the Chugach Region” (included in kit); one photocopy per student.
- “Archaeology and Memory” DVD (included in kit)

**Websites:**

- [www.webrangers.us/activities/dendrochronology](http://www.webrangers.us/activities/dendrochronology) Retrieved 1.3.13 Interactive tree ring dating exercise
- [www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5274994.pdf](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5274994.pdf)
- [www.oceanalaska.org/research/coastarch-video.htm](http://www.oceanalaska.org/research/coastarch-video.htm) Retrieved 1.3.13 Short video and picture of Aialik Bay archaeological site
- [www.blm.gov/ak/st/en/prog/culture/archaeology.html](http://www.blm.gov/ak/st/en/prog/culture/archaeology.html) Retrieved 1.3.13 Archaeological sites in Alaska

**Teacher Preparation:**

- Review “Archaeology and Memory” DVD: An excavation in the Kenai Fjords National Park
- Make copies of “Prehistoric Artifacts of the Chugach Region”
- Select prehistoric artifacts that the students will be investigating

**Opening:** Display various uniquely shaped naturally formed rocks collected from your area and ask students to imagine what type of prehistoric tool could be crafted from each.

**Activities:**

**Class I:** Identifying Prehistoric Artifacts (prepared by L. Johnson, Cultural & Archaeology Program, Chugachmiut, 1998, “Prehistoric Artifacts of the Chugach Region”)

The study of prehistoric artifacts can tell us a lot about the people who made them and used them. Artifacts provide a record of ancient technology, subsistence practices, and ways of living. They give clues about population size, settlement patterns, and a people’s relationship to their environment. To make clear and precise identification, the following areas are investigated: materials used description, classification, characteristics, form and function, and interpretation using oral history and historic reconstruction.

1. Materials
  - a) Identify the different kinds of materials that are found naturally in the environment that could be used for making tools.
  - b) Describe the properties and possible uses of these materials in making tools.
  - c) What kinds of materials are available locally and how could you use them in making a lamp, adze, or blade?
2. Artifact Description
  - a) Identifying number (if available)
  - b) Type of material
  - c) Artifact weight in grams
  - d) Make a sketch of the artifact. Measure the length, width and thickness / height of the artifact in centimeters and record the measurements.
  - e) Cultural Modifications: Manufacture and Use Wear
 

Manufacture: Examine the artifact and describe what if anything was done to shape it into a tool or other useful object. For example, describe areas on the artifact that were pecked, ground, polished or changed in some way that show that the item was changed for a particular purpose. Identify where these modifications are located on the artifact using the names identified in the sample sketch of the artifact. You may also indicate the cultural modifications on your sketch map.

Use Wear: Examine the artifact to see if there is any sign that the object was actually used after it was made. Identify where the evidence of use wear is located on the artifact using the names identified in the sample sketch of the artifact. You may also indicate the evidence of use wear on your sketch map.
  - f) Artifact Condition: The next thing to consider is what happened to the artifact between the time it was made or used, and when it was collected in modern times for study. Has the object changed at all during that time? For example, is this artifact what the object looked like during prehistoric times or has it deteriorated or been broken in some way? Describe areas on the artifact (if any) that show that the tool

was damaged or changed in some way after use. Identify where the damage is located on the artifact using the names identified in the sample sketch of the artifact. You may also indicate the damage on the artifact on your sketch map.

## **Class II: Artifact Classification**

1. Archaeology's basic unit of classification is called a "type". Sorting artifact specimens by different types is useful in the study of prehistoric remains. Classify the 32 artifact specimens illustrated in the handout included in the "Prehistoric Artifacts of the Chugach Region" into four or more different types by sorting them by their different shapes. To do so, first identify a characteristic that is shared by some of the specimens but not all (for example, some specimens have one knob on top). Identify at least ten different characteristics.

2. **Form and Function**

By studying an artifact's form (such as its shape, material, modifications and other characteristics), sometimes it is possible to say something about its function (such as its intended or actual use). It is useful to consider all characteristics and decide which characteristics have a form to function relationship and which do not.

Examine the possible relationship between form and function in the slate artifact illustrated here. Consider the list of characteristics and possible functions outlined below.

**INSERT PHOTO OF ULU**

### **Characteristics:**

- The artifact is made of slate
- One side has been ground to a sharp edge
- One side has two holes drilled into it
- Slate is black

### **Possible form to function relationship:**

- Slate was selected for making this tool because it is relatively easy to shape through drilling and grinding and will hold a sharp cutting edge. Slate can be reworked if it is broken during use.
- The sharp edge of the artifact could have been used for cutting or scraping.
- The two holes suggest the blade was fastened to something.
- The black color of slate does not suggest any obvious function.

### **Interpretation**

- Considering all of the above characteristics, one can suggest that the artifact was originally fastened to a handle to be used for cutting and scraping. This type of artifact is called an ulu.

3. Now, using one of the artifacts provided by your instructor, try to identify possible functions of the artifact by examining its form (provide a wedge and an adz).

## **Class III: Oral History**

Another method used to study and say something about historic and prehistoric artifacts, sites, and people is the study of traditional knowledge or oral history. Native elders and others know stories and other things about the past that they themselves learned from someone else. Traditional knowledge has often been passed down over many generations and includes information about both the near and distant past.

Oral history can be used to study artifacts. For example, an elder might tell a story about how her grandmother used an ulu to cut fish somewhat like others now use knives.

1. Have students make a list of five questions that would help to increase their knowledge about prehistoric artifacts and how they were used.
2. As homework, use these questions to interview Elders or recognized experts about artifacts.
3. Finally, write about what you have learned about the artifact.

#### **Class IV: Historic Reconstruction**

Archaeologists use artifact descriptions, classification, oral history, and many other methods to try to learn about the past and change over time. Sometimes archaeologists try to reconstruct a picture of the past so that we can know a little more about how life might have been at a different time.

1. Have students select an artifact from the pictures of items at the Cordova Museum.
2. Describe what can be learned about the artifact by answering the following questions.
  - a. What kind of tool or item was this artifact during prehistoric times?
  - b. How was it made?
  - c. How was it used?
  - d. What if anything has happened to the artifact between when it was used in prehistoric times and the present?
  - e. What can this artifact tell you about ancient technology?
  - f. What can this artifact tell you about how people lived during prehistoric times?
3. To determine if their hypotheses were correct, compare it with a known artifact.



## TOOLS: WHAT IS LEFT BEHIND: 10-12 (6)

**Grade Level:** 10-12

**Overview:** Students will hypothesize and speculate what future generations will theorize about our culture by what we have left behind as artifacts of tools, technology, music, literature, and legends.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
E2: Students who meet this cultural standard are able to: understand the ecology and geography of the bioregion they inhabit.	<b>Geography E4:</b> Determine the influence of human perceptions on resource utilization and the environment. <b>Geography E5:</b> Analyze the consequences of human modification of the environment and evaluate the changing landscape.	G7: Students should be knowledgeable about environmental and natural impacts of the area.

**Estimated Time:** Five to seven 50-minute class periods depending on the scope of activities selected.

**Lesson Goal:** To discover the process of biodegradation on what we leave behind for future generations that study our culture.

**Lesson Objectives:** Students will:

- Learn about the rate of biodegradation of items we throw away
- Write an essay about how their generation will be viewed by what is left behind
- Compare their generation to past generations
- Speculate what the future may look like by observation of current trends

**Vocabulary Words:** Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
Midden		nanellret
Biodegrade		urrluni
Decay		urrluni

**Materials/Resources Needed:**

- DVD included with the kits: Archaeological Dig, run time
- DVD included with the kit: Aftermath Population Zero, National Geographic, 2008, ( 90 minutes)
- Crowell, Aron L., Steffian, Amy F., and Pullar, Gordon L. (2001) Looking Both Ways heritage and identity of the Alutiiq people. Fairbanks, Alaska. University of Alaska Press.
- Filled trash can (from home, school room, or cafeteria)
- 8 x 10 foot plastic tarp
- Disposable latex gloves
- Large plastic garbage bags

**Websites:**

- <http://cmore.soest.hawaii.edu/cruises/super/biodegradation.html> Retrieved 12.20.12 Biodegradation of trash in salt water
- <http://en.wikipedia.org/wiki/biodegradation> Retrieved 12.20.12 Process of biodegradation
- <http://www.architectsjournal.co.uk/buildings/key-reasons> Retrieved 12.20.12 Key reason for concrete decay
- <http://alutiimuseum.org> Retrieved 3.15.13 Click on “research results then view video” select “midden” run time 3:14 minutes.
- <http://alutiimuseum.org> Retrieved 3.15.13 Click on “research results then view video” select “charcoal” run time 4:55 minutes.

### **Teacher Preparation:**

- View the DVD, Aftermath Population Zero and note any areas (man-made global warming) that could require school or parental consent before presentation to the class.
- Plastic tarp and disposable rubber gloves
- Filled trash can
- Field trip permission slips
- Large plastic trash bags
- Google search “floating trash island” for interesting pictures to use with Class II: Washed Ashore

### **Opening:** “Rotten Affairs” in our future.

Lay a protective plastic tarp on the floor and empty a trash can collection from the school cafeteria, the classroom, or from the instructor’s home. Ask for student volunteers to sort and categorize what is found in the trash heap. Make a list on the board of the items identified. Use this information in Class I: Biodegradation.

### **Activities:**

#### **Class I:** Biodegradation

1. Make a list of the time required to biodegrade various materials. The students should consider biodegradation in salt water and present day landfill disposal of garbage. Use the following search suggestions: (Be aware that some sites discuss human remains and should not be included in this lesson)
  - a) Decay rates of plastic water bottles
  - b) Decay rates of wood
  - c) Decay rate of glass
  - d) Decay of paper, metal, cement, oil
2. Determine what is required to assist the process of biodegradation.
3. What are other common terms used for biodegradation?
4. View the DVD on the Archaeological Dig.
5. Compare and contrast what tool artifacts archaeologists have found in middens left by our ancestors. Refer to “Archaeologist Time Line” in the addendum. Also refer to Crowell, Aron L. Looking both ways, pages 103-127.

#### **Class II:** Washed Ashore

As a homework assignment, or class field trip, ask the students to collect items that have washed up on the beach. The students should bring the bagged items to the schoolyard for discussion about what was found and disposal.

**Class III:** Present and Future “Trashcan Archaeology”

1. As homework, have students make a list of items found in their trashcan and indicate how long it will take these items to biodegrade in the local landfill. Advise students not to put their names on the lists. (Cautionary Note: brief the class before they begin this project as to the personal nature of trash items, such as prescription bottles and other medicinal use items. All items can be described generically as aluminum cans, glass jars, plastic bottles, paper, food scraps, etc.)
2. In class, collect the lists and redistribute to students (Cautionary Note: Review the lists prior to redistribution to confirm that students used appropriate descriptions of trash items). Have students review a list and theorize what may have occurred in that household over the past day(s). Discuss what was learned.
3. View the website <http://www.alutiiqmuseum.org> and watch the video “Midden”.
4. Write an essay about what will be learned by future archaeologists who search middens for clues to their past and how it is different or similar to what archaeologists of today have discovered. Discuss how an anthropologist would learn about traditions, music, religion, and technology.
5. As a class discussion, review the types of resources that were used to create tools and household items and how conservation conscious our ancestors were in the use of resources as compared to today.

**Class IV and V:** Aftermath Population Zero

1. Watch National Geographic DVD: Aftermath Population Zero (running time 90 minutes).
2. Allow time to discuss the geographic location of the video, adaptation of animals, impact of a similar event not within an urban area, and the abundance of or lack of organic matter.
3. Discuss areas that were not addressed in the film and what you might want to learn about ecology, biodegradation, bioremediation, and decomposition processes.

**Class V and VI:** In The Year Twenty-two Twenty-two

1. What do you think the future will look like 200 years from now? Brainstorm ideas for the future and write them on the board. The students should consider what a community may look like, the type of housing, transportation, food, music, and technology.
2. Identify what types of problems are foreseeable in the future. Divide the students into small groups to determine possible present day solutions to the problems.
3. Based on what you now know, trends that you observe, and possible solutions, write an essay about what you perceive for the future.
4. Provide time for student presentations and discussion about their essays.

## TOOLS: DATING ARTIFACTS: 10-12 (7)

**Grade Level:** 10-12

**Overview:** This lesson discusses the various dating methods that are used by archaeologists and provides opportunities to test dating methods through dendrochronology, stratigraphy, and cultural comparison.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
D4: Gather oral and written history information from the local community and provide an appropriate interpretation of its cultural meaning and significance.	History C3: Apply thinking skills, including classifying, interpreting, analyzing, summarizing, synthesizing, and evaluating, to understand the historical record.	G4: Students should be knowledgeable about natural vegetation. G7: Students should be knowledgeable about environmental and natural impacts of the area.

**Estimated Time:** Three 50-minute classes and one field trip

**Lesson Goal:** To become knowledgeable about dating methods.

**Lesson Objective(s):** Students will:

- Date artifacts by use of dendrochronology and cultural dating.
- Sketch, weigh, measure, and record artifact data.
- Become familiar with dating methods.

**Vocabulary Words:**

Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
Date		erneq
Dating		erneret
Age		qanirlaq

**Materials/Resources Needed**

- Tree boring DVD (included in kit)
- Tree boring tool (included in kit)
- Tree cookie (included in kit)
- Shovels and trowels for experimental dig
- Artifact collection bags and permanent markers
- Sugt'stun vocabulary CD (included in kit)
- Thumb drive of Cordova Museum tool artifacts

**Websites:**

- [www.webrangers.us/artivities/dendrochronology](http://www.webrangers.us/artivities/dendrochronology) Retrieved 2.22.13 Interactive tree ring dating lesson 10 minutes
- [www.fs.usda.gov/internet/FSE\\_documents/stelprdb5274994.pdf](http://www.fs.usda.gov/internet/FSE_documents/stelprdb5274994.pdf) Retrieved 2.22.13 Common Trees of Alaska
- [http://paleobiology.si.edu/geotime/main/foundation\\_dating3.html](http://paleobiology.si.edu/geotime/main/foundation_dating3.html) Retrieved 2.22.13 Dating rocks and geologic time scale with Stratigraphic Chart

### **Teacher Preparation:**

- Review the websites
- Make copies of “Common Trees of Alaska”
- Make additional copies of artifact sketch pages used in Tools 10-12 Identifying Artifacts (lesson 5).
- Arrange for a recognized expert to assist in the tree boring activity
- Arrange for an Elder/culture-bearer to participate in the classroom activity for tool identification from the Cordova Museum Pictures
- Arrange for a recognized expert to assist in the experimental dig activity
- Request permission to dig in a specific area from the landowner or community
- Fieldtrip permission slips
- Review the Sugt’stun vocabulary and have students repeat the words when used in the lesson

**Opening:** Display the following items on a table and ask the students to identify and DATE/date the artifacts:

- a piece of a Mylar food wrapper (including a part of the ‘best used by’ date)
- an old corroded battery
- a broken piece of CD disk
- an old coin or token
- crushed pop can
- a piece of fire wood
- a stone tool from the heritage kit.

Discuss how dating can be made and the clues the students used to identify the items. Determine what information is missing and what sources could be used to establish a DATE/date.

### **Activities:**

As stated by Allen Marquette (e-mail dated 11.13.12) of “Let’s Talk Science”:

*“The artifact dating method often used by archaeologist is a comparative study of form, structure, and manufacturing techniques. This process involves classifying the artifact by type, style, source, manufacture technique, and distribution. Once a thorough description is made of the artifact, a comparison can be made against artifacts of known age (dated in their original archaeological context) to determine an age range for the newly acquired artifact. This also involves investigating scientific and cultural literature that provides artifact and site description with drawings, photos, etc., for comparison.”*

The attached handout on Archaeological Dating Methods lists many of the techniques that are available for dating artifacts constructed of various materials. A brief look at the following web site [http://paleobiology.si.edu/geotime/main/foundation\\_dating3.html](http://paleobiology.si.edu/geotime/main/foundation_dating3.html) will provide the students insight into the scientific technology used in dating methods.

### **Class I: Dendrochronology**

1. Allow each student approximately 10 minutes to work through the interactive lesson on dendrochronology from the website [www.webrangers.us/activities/dendrochronology](http://www.webrangers.us/activities/dendrochronology).
2. View the tree bore video about how boring is done and dating using tree rings.

3. Examine the “cookie” from a tree that was felled in 2012 and determine the qanirlaq/age of the tree. Determine how this particular tree ring segment might help in knowing the qanirlaq/age of an artifact from the same area.
4. Review the handout on “Common Trees of Alaska”. As a homework assignment, students should map the trees in their community and determine possible uses for tool making for each species. Remember that all parts of a tree were used to make tools and common household goods.
5. If trees have been felled and a stump still remains, take bore samples of the trees (with assistance from a recognized expert) and match tree rings for dating. Keep a record of the samples for future study. The students should also determine if periods of stress from fire or lack of water could be dated from the tree ring sample.

**Class II: Stratigraphy (fieldtrip)**

Stratigraphy is the study of the layers of soil in which artifacts are found. The oldest items will be those found in the bottom layers of soil.

1. Request a recognized expert from your community to assist in planning an experimental dig. Each student should review the attached handout regarding planning and excavating an experimental hole.
2. With permission from the community or property owner, request to dig an experimental hole to note the various levels of soil and debris deposits. From known geologic events can soil layers be dated by volcanic ash deposits, earthquakes, or flooding? Were any artifacts located in the soil layers?
3. Collect artifacts and place in labeled plastic bags. Soil depth should be noted as well as location of artifacts that remain adjacent to those items removed.
4. Discuss any artifacts found, soil layers, and what can be learned about the dig area.

**Class III: Cultural Dating and Manufacture Techniques**

Using 10-12 5) as a guide, view the tools that are pictured on the thumb drive from the Cordova Museum and make a comparison of the items from other known sites and determine a possible erneq/date range for their qanirlaq/age. The website [www.alaska.si.edu](http://www.alaska.si.edu) can be referenced to make cultural comparisons. Information can also be gathered from oral and written history, community resources, and culture-bearers.

## ARCHAEOLOGY DATING METHODS<sup>1</sup>

**Radiocarbon (C14, or Carbon 14) Dating:** Measures the radioactivity given off by carbon 14 atoms or counts the atoms. Older objects are less radioactive. This method is used on organic remains.

**Magnetic Dating:** Compares the magnetism in an object with the earth's magnetic field changes from the past. This method is use on baked clay and mud.

**Tree Ring Dating or Dendrochronology:** Counts the annual tree rings and matches up the ring patterns to make a dating sequence, usually on wooden objects. This is the oldest form of scientific dating.

**Potassium/Argon Dating:** Measures these two chemical elements in volcanic rocks, with older rocks having more argon and less potassium.

**Fission Track Dating:** Counts the number of tracks made by the breakdown of radioactive elements, with older objects leaving more tracks. This method is used mostly on rocks, pottery, and glass.

**Thermo Luminescence Dating:** Measures the energy given off from the breakdown of radioactive elements. This energy is trapped in pottery and given off as light. Older objects give off more light.

**Fluorine Test Dating:** Measures the amount of fluorine, nitrogen, and uranium in bones. Older bones have more fluorine and uranium and less nitrogen, but happens at different speeds in different places, so it is not possible to compare bones from a different site.

**Cultural Dating:** The process of comparing objects archaeologists find with information they already have; comparing cultural attributes.

**Obsidian Dating:** When obsidian is first exposed by flaking, a physical change begins to take place at a very slow constant rate. Water is taken into the material's structure. This rate varies with temperature, but not with the quantity of water available. Measuring the thickness of the hydration layer on an artifact can help determine age and years.

**Cross-Dating:** Comparing finds to look for similarities and differences with other finds of known dates. This helps to identify the chronology of the artifacts. If a piece of a basket is found in a site in Chenega, it can be compared with the types of baskets found at other sites and made by other cultures. This comparison helps to figure out how old the basket is and who made it.

**Stratigraphy:** The study of layers of soil and rock where artifacts and fossils are found is one of the major tools of archaeology. The lower layers are thought to be older than the top layers, if there was no disturbance such as an animal burrowing, earthquakes, slipping, erosion, etc. Stratigraphy is vital to the interpretation of an excavation. **Stratification** is layered deposits providing one of the major tools to interpret archaeological sites. Over time, debris and soils accumulate in layers. Color, textures, and contents may change with each layer. Archaeologists need to explain how each layer came to be added, whether it was natural, deliberate fill, or collapse of structures, and to record it in detailed drawings in a map so others can follow. This follows the law of superposition in that lower, buried deposits would be older than those on top. Adopted from geology, stratification doesn't always work in analysis if there were any major disturbances over time to the layers and their contents.

<sup>1</sup>Definitions compiled from Laubenstein, Karen J. (1997) Archaeology Smart Junior. New York. Random House, Inc.