

The logo for Chugachmiut, featuring the word "CHUGACHMIUT" in a stylized, outlined font.

TRIBAL ORGANIZATION SERVING THE CHUGACH NATIVE PEOPLES OF ALASKA

Pisurlapet Nauget Piturlaqengapet Gathering Plants to Eat



Developed by Nancy Yeaton and Barclay Kopchak

A Publication of Chugachmiut Heritage Preservation Department
1840 Bragaw Street, Suite 110, Anchorage, AK 99508-3463
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GATHERING PLANTS TO EAT

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Overview

"In summer, he (Peter Macha, father of Marfa Macha wife of Nicholas Moonin,) would eat some greens from here, like goose tongues and fireweed. When they'd (fireweed) grow two inches long, they'd cut them and boiled them with seal oil. My mom used to tell me they were just as good (as vegetables)." Juanita Melshiemer, Alexandrovsk magazine No.1.

The traditional Sugpiaq subsistence lifestyle depends upon hunting, fishing, and the seasonal gathering of plants from the village environs. Traditionally men have been the hunters and fishermen, harvesting trees for fuel and building structures while women gathered plants for both food and medicine. This pattern continues today. Children also often help to gather edible plants, algae and berries to supplement the winter's cache. The edible plants are either eaten fresh or are processed by blanching, freezing, drying, and jarring. Greens used to be enjoyed with seal oil; today most greens are sautéed with bacon grease or added to soups.

Knowledge of what plants or plant parts to gather, when and where to gather them, and how to process and use them, has been accumulated over generations. Elders share this knowledge with each new generation along with the important cultural lessons of how to gather and treat the plants and the environment respectfully and without waste. "Over picking, breaking branches, stepping on plants, or eating too much while you are collecting are considered poor etiquette." (Russell, P. as cited in Crowell et al. (2001). Looking Both Ways, p.182.) Inviting an Elder or Recognized Expert along on field trips to share stories about the gathering and preservation of edible plants it will give students an opportunity to listen and become part of this generational transfer of knowledge and culture.

Today, the people of Nanwalek and Port Graham use many plant species for food, medicines, raw materials, and fuel. Most plants are harvested near each village. Eight species of berries are gathered from June through September. They are made into jams, jellies, and sauces; baked in breads, cakes, and biscuits; or eaten plain or mixed with sugar. A variety of green plants are used for food, including wild parsley, wild onion, goose-tongue, wild celery, ferns, fireweed, nettles, seaweed, and kelp. These plants are harvested in the spring and early summer when their parts are young and tender. Their uses are as ingredients in soups and salads, and flavorings for fish dishes.

Stanek, R. T. (1999). Ethnographic Overview, p.110

Nancy Yeaton of Nanwalek explains that there is a relationship that is formed when harvesting from the land and sea that creates an awareness of how connected we are with our surroundings. Our senses awaken as we gather; we become aware of the smell associated with that plant, what kind of animals live in the area, its proximity to fresh

water/salt water, how the plant feels new as it starts the spring, the taste at the beginning of the season, as well as the middle and the end of the season... The lands and water of Alaska continue to provide for us as they did for our Ancestors; the abundance of greens are there and waiting for us. And not only for us. They provide for animals, the Earth, as a fertilizer, keep our air clean, and provide shade for small animals. (Nancy Yeaton, Nanwalek, 'Gathering Plants' manuscript, October 2011)

The Gathering Plants curriculum promotes hands on experiences to identify; locate, gather, process, and eat local edibles. Students will discover the 'store outside their door' and reinforce their connection to their surroundings and the healthy subsistence lifestyle.

References:

Melshiemer, Juanita. (1980, Number I). I Hope This Will Go On Forever, Here In English Bay. Alexandrovsk, English Bay In Its Traditional Way, English Bay Elementary/High School, Kenai Peninsula Borough School District, p.35.

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.

Stanek, R. T. United States Department of the Interior, Minerals Management Service. (1999). Ethnographic Overview and Assessment for Nanwalek and Port Graham (14-35-0001-30788). Anchorage, Alaska: Division of Subsistence, Alaska Department of Fish and Game, p.110.

GATHERING PLANTS TO EAT: ACTIVITY OVERVIEW K-12

Kommentar [JP1]: No longer accurate after Barclay's revisions.

All the following activities have Sugt'stun translation for key words to be used.

Grades K-2

Activity 1: Seed Chart

Students will develop a seed chart with their favorite fruit or vegetable seeds.

- Elder/Recognized Expert
- Gibbons, G. (1993). *From Seed to Plant*. New York, NY: Holiday House, Inc

Activity 2: Parts of Plants

To learn about the basic parts of plants

- Elder/Recognized Expert
- Permission slip according to school district policy
- Buckets with shovels in heritage kits
- Blackaby, D. (2003). *Plant Plumbing: A Book about Roots and Stems*. North Mankato, MN: Picture Window Books
- Spilsbury, L., Spilsbury, R. (2008). *Plant Parts*. Chicago, IL: Heineman-Raintree

Activity 3: What Plants need to grow?

To understand what is needed to grow healthy plants

- Gibbons, G. (1993). *From Seed to Plant*. New York, NY: Holiday House, Inc.
- Spilsbury, L. and Spilsbury, R. (2008). *Plant Parts*. Chicago, IL: Heineman-Raintree
- Clear plastic cups
- Bean, radish or corn seeds
- Potting soil mixture

Activity 4: Leaf Anatomy

To learn about leaf anatomy

- Spilsbury, L. and Spilsbury, R. (2008). *Plant Parts*. Chicago, IL: Heineman-Raintree
- Camera
- Leaves of various sorts
- Edible Plants Flashcards available in Heritage kit
- Wax paper or clear contact paper (need an iron if using wax paper)

Activity 5: Function of Plants

To experiment with the scientific method

- 5 Cotton Grass or white carnations
- 5 small containers of food coloring (red usually works best)
- 5 empty soda pop cans
- 2 pitchers of water

Activity 6: Habitat

To learn about where plants grow (habitat).

- Elder/Recognized Expert
- Camera
- Permission slips according to district policies
- Magazines, nature calendars, and other print resources with photographs of oceans, forest, wetland, grassland, and sub-alpine environments
- Kalman, B. and Sjonger, R. (2006) *Plants in Different Habitats*. New York, NY: Crabtree Publishing

Activity 7: Plants We use: Where and When...

To discover when edible plants are gathered

- Identify a Recognized Expert to talk about seasonal plant gathering traditions
- Pictures of: Wild Chive or Onion, Fiddlehead Fern, Fireweed, and Wild Rice or Chocolate Lily with titles in both English and Sugt'stun, Field cards in kit.
- ANTHC. (2008). *Traditional food guide: For Alaska Native cancer survivors*. Anchorage, AK: Alaska Native Tribal Health Consortium, Office of Alaska Native Health Research, Cancer Program. (pp. 92, 93, 101).
- Russel, P.N. (2011). *Alutiiq plantlore: An ethnobotany of the peoples of Nanwalek and Port Graham, Kenai Peninsula, Alaska*. University of Alaska, Fairbanks, AK: Alaska Native Knowledge Network, Center for Cross-Cultural Studies. (pp. 59-65).
- Read "Blueberries for Sal," after completing activities
Seasonal Round divided into the four seasons: Spring, Summer, Fall, and Winter in both English and Sugt'stun

Activity 8: Seasonal Rounds

To learn about annual plant gathering

- Elder/Recognized Expert to interview
- Blank seasonal round broken down into 12 spaces for labels for each month in both
- Santino, J. (1994). *All around the year*. Chicago, IL: University of Illinois Press

Activity 9: Some Plants are Dangerous

To learn how to distinguish between safe and poisonous plants

- Enlarged photographs of local plants that are considered dangerous or harmful (could be more than just water hemlock and baneberry).
- Detail photographs of leaves, stems, flowers, and berries
- Enlarged photographs of other plants from around the community
- Traditional Sugpiaq Food Plants Flash Cards
- Traditional Sugpiaq Plants book
- Puzzle of poisonous plant

Grades 3-6

Activity 1: Plant Growth

To learn about seeds

- Lima beans
- Fern Frond gathered from local area
- Permission slip for field trip
- Elder/Recognized Expert
- Camera (take many pictures while collecting fiddle heads)
- Before this activity pick enough fiddle heads for each student to have 3-4 to observe,
- Pick enough fern fronds for each pair of students.
- Magnifying glasses
- Burnie, D. (2004). Plant. New York, NY: DK Publishing

Activity 2: Plant Parts

To learn about the parts of edible plants those are used in the Alutiiq culture

- Permission slip according to school district policies
- Russell, P. (2011). Alutiiq plantlore. Fairbanks, AK: University of Alaska Fairbanks, Alaska Native Knowledge Network, Center for Cross-Cultural Studies.
- Native Educators of the Alutiiq Region. (2009). Kodiak Alutiiq spring plants. Anchorage, AK: Northwest Publishing Company.
- Field cards of the edible plants in this Activity Plan are from Alutiiq Plantlore
- Edible Plant field cards (available in the Heritage Kit)

Activity 3: What Plants need to grow...

Students will learn what living things require

- Elder/Recognized Expert from community
- Emery, P. (1993). What do plants need to grow? Sacramento, CA: California Foundation for Agriculture in the Classroom.
- For each group of Students:
 - Pictures from magazines – representing needs and wants
 - Paste or glue
 - Markers
 - 1 set of “I Need . . . I Want!” cards (Available in the Heritage Kit)
 - 1 Ziploc™ bag
 - 1 pair of scissors

Activity 4: Leaf and Anatomy

To learn about plant anatomy

- Display of two samples each of fiddlehead fern, chocolate lily, wild celery, wild chives, and dandelion, individually laminated as flash cards in the center of the room sorted in piles by number (in kit).
- Clear contact paper or wax paper

Activity 5: Nutrition and Recipes

To learn about nutrients in edible plants and healthy edible plant recipes

- Alutiiq Museum. (nd). society. Kodiak, AK: Alutiiq Museum Plants in Alutiiq
- ANTHC. (2008). Traditional food guide: For Alaska Native cancer survivors. Anchorage, AK: Alaska Native Tribal Health Consortium, Office of Alaska Native Health Research, Cancer Program) pp. 92-93
- Fiddlehead Fern, enough for your class, available for harvesting in the spring (mature ferns are toxic)
- Fireweed: 2 to 4 inches tall, available in the spring (as the fireweed ages it becomes tough and bitter tasting)

Activity 6: Habitat (Ecosystem)

To learn about habitats and apply the name of each type to a local map

- Elpel, T. (2005). *Shanleya's Quest*. Missoula, MT: Mountain Press
- Elder/Recognized Expert
- Permission slips according to school district policies
- Map of community
- Compass and GPS
- Flags to mark habitats
- Marker to mark flag
- Small maps for students to label

Activity 7: Seasonal Gathering

To create an edible plant seasonal round English and Sugt'stun for the Chugach Region

- Large piece of butcher paper or flat screen to show the class the seasonal round diagram
- Sticky notes
- Double-sided blank seasonal round diagram for each student.
- Seasonal round diagram – attached
- Copies of “Community Member Interview Guidelines” Adapted from “Guidelines for
- Diamond, A. (ND). Eating in season: The seasonal round in Northern Maine, a social studies and geography mini-unit for grades 5-8. Burlington, VT: University of Vermont.
- Russel, P. (2011). Alutiiq plantlore. Fairbanks, AK: University of Alaska Fairbanks, Alaska Native Knowledge Network, Center for Cross-Cultural Studies.

Grades 7-9

Activity 1: Roots, Stems, and Leaves Preservation Techniques

To learn about traditional and current preservation methods of edible plant

- Plant journal
- Butcher paper
- Blank Venn diagram for each student
- Schofield, J. (1989). *Discovering Wild Plants; Alaska, Western Canada, The Northwest Books*. Anchorage AK: Alaska Northwest Books. Pp. 225, 270, & 277

Activity 2: Harvesting and Preservation of Roots, Stems, and Leaves

To learn how to harvest and preserve edible roots, stems, and leaves

- Permission slips according to school district policies
- Plant journals
- Digital camera to take pictures during gathering
- Plant field cards (in Heritage kit)
- Schofield, J. (1989). *Discovering Wild Plants; Alaska, Western Canada, The Northwest Books*. Anchorage AK: Alaska Northwest Books

Activity 3: Field Cards for Roots, Stems, and Leaves

To learn how to identify, harvest and preserve edible plants

- Texts: Schofield, J. (1989). *Discovering Wild Plants; Alaska, Western Canada, The Northwest Books*. Pages 225, 270, & 277,
- Plant Journal
- Photos from field trip
- Heritage kit field cards

Activity 4: Harvesting Seaweed

To learn how to harvest and preserve seaweed

- Permission slips according to district policies
- Plant journal
- Garza, D. (2005). *Common Edible Seaweeds in the Gulf of Alaska*. Fairbanks, AK: Alaska Sea Grant Program.
- Russell, P. (2011). *Alutiiq Plantlore: An Ethnobotany of the peoples of Nanwalek and Port Graham, Kenai Peninsula, Alaska*. Alaska Native Knowledge Network Center for Cross-Culture Studies, University of Alaska Fairbanks
- Digital camera
- 3 clipboards
- Wading or rubber boots
- Raincoat
- Warm clothes
- Brown lunch bags for each student/group put your harvested seaweed (in kit)
- Backpack

Activity 5: Seaweed Sprinkle Recipe

To learn how to use seaweed as a spice

- Russell, P. (2011). Alutiiq Plantlore: An Ethnobotany of the peoples of Nanwalek and Port Graham, Kenai Peninsula, Alaska. Alaska Native Knowledge Network Center for Cross-Culture Studies, University of Alaska Fairbanks
- Prepared presentation from Activity 4
- Dried seaweed from Activity 4
- A pot of cooked rice to share with invited class
- Small serving bowls (possibly from the cafeteria) for students and invited class
- Seasonings (i.e. soy sauce, butter, etc.)
- Utensils (forks and spoons)
- Digital camera
- Garza, D. (2005). Common Edible Seaweeds in the Gulf of Alaska. Fairbanks, Alaska

Activity 6: Berries

To prepare berry recipes

- Contact local Recognized Expert
- Permission slip according to school district policies
- Warm clothes
- Small buckets (in Heritage kits)
- Recipes for Blueberry Pudding, Cranberry Sauce, and Fruit Leather (in kit).
- Sugar (5 pound bag)
- Three pots
- Three sieves
- Students bring a jar from home (for their jam)
- Schofield, J. (1989). Discovering Wild Plants; Alaska, Western Canada, The Northwest. Anchorage, AK: Alaska Northwest Books. Pp. 79 blueberry, 85 currant, 90-92 High bush cranberry
- ANTHC (2008). Traditional Food Guide: For Alaska Native Health Research, Cancer Program

Activity 7: Nutritional Value of Berries

To learn about the nutritional value of berries

- Adhesive nutrition labels (included in Heritage Kit)
- Blank Nutritional Value Round (included in Heritage Kit)
- Schofield, J. (1989). Discovering Wild Plants; Alaska, Western Canada, The Northwest. Anchorage, AK: Alaska Northwest Books. Pp. 79 blueberry, 85 currant, 90-92 High bush cranberry
- ANTHC (2008). Traditional Food Guide: For Alaska Native Health Research, Cancer Program.
- White construction paper
- Markers

Activity 8: Lovage, Laver and Nettle Recipe

To learn about edible plant preparation

- Permission slips according to school district policies
- Camera
- clipboard
- Sugt'stun speaker who also is a Recognized Expert about gathering, preservation, and preparation of edible plants.
- Recipes (available in the Heritage Kit)
- Index cards for recipes
- Small paper plates, plastic forks, and napkins
- Russell, P. (2011). *Nanwalek and Port Graham, Alutiiq Plantlore*, Fairbanks, AK: University of Alaska Fairbanks, AK: Alaska Native Knowledge Network, Center for Cross-Cultural Studies.
- Schofield, J. (1989). *Discovering Wild Plants; Alaska, Western Canada, the Northwest*. Anchorage, AK: Alaska Northwest Books.

Activity 9: Seasonal Round

To identify the time of the year to gather plants and their parts

- Butcher paper with an enlarged seasonal round diagram
- Index cards for students to note their brainstorming ideas
- Diamond, A. (nd). *People, Plants & Gathering in Northern Maine*, a collaboration between the USDA Forest Service Northern Research Station and the University of Vermont. Principal project investigators: Dr. Marla Emery, USDA Forest Service, and Dr. Clare Ginger, University of Vermont
- Websites:
People, Plants & Gathering in Northern Maine

Grades 10-12

Activity 1: Seeds

To learn about how to collect natural seeds during their seasonal offering

- Local Elder/Recognized Expert
- Permission slips according to school district policies for field trips
- Dress appropriately for field trip
- Students should bring gloves to collect with
- Index cards to note how to use the seeds
- Field cards with the description, location, harvest, usage of plant and seeds (in Heritage kit)
- Poster of Edible Sugpiaq Favorites: Available in Heritage Kit
- Brown paper lunch bags for gathering (in Heritage Kit)
- Schofield, J. (1989). *Discovering Wild Plants; Alaska, Western Canada, The Northwest Books*. Anchorage AK: Alaska Northwest Books. Pp. 225, 270, & 277,

Activity 2: Habitat

To learn that plants survive in habitats in which their needs can be met

- Permission slips according to school district policies
- Appropriately dress for field trip
- Clipboards (to take field notes)
- Index cards
- File folder for students notes and class work
- Texts: Schofield, J. (1989). *Discovering Wild Plants; Alaska, Western Canada, The Northwest Books*. Anchorage, AK: Alaska Northwest Books. Pp. 225, 270, & 277

Activity 3: Nutrition

To learn about the nutritional value in local edible plants

- Invite Recognized Expert/Elder to go over Sugt'stun translations with class.
- Nutritional Chart Handout (insert with activity).
- ANTHC. (2008). *Traditional Food Guide: For Alaska Native Cancer Survivors*. Anchorage, AK: Alaska Native Tribal Health Consortium, Office of Alaska Native Health Research, Cancer Program.
- Garza, D. (2005). *Common Edible Seaweeds in the Gulf of Alaska*. Fairbank, AK: Alaska Sea Grant.
- Schofield, J. (1989). *Discovering Wild Plants; Alaska, Western Canada, The Northwest*. Anchorage, AK: Alaska Northwest Books

Activity 4: Survival Foods

- Permission slips for each student (according to school district policy)
- Dress appropriately according to weather
- Gloves for gathering
- Clipboard for each student
- Blank paper for making a map

- Index cards
- Brown paper lunch bags
- Small buckets (4) in heritage kit
- Cameras
- Student's file folders
- Blank paper (to sketch and label plants), day two activity
- Texts:
 - Garza, D. (2007). Surviving on the foods and water from Alaska's southern shores. Alaska Sea Grant College Program, Fairbanks, AK: University of Alaska Fairbanks.
 - Schofield, J., (1989). Discovering Wild Plants Alaska, Western Canada, The Northwest. Portland, OR. Northwest Books

Activity 5: Harvesting and Preservation of Seaweed

To learn how to harvest and preserve seaweed

- Permission slips according to district policies
- Garza, D. (2005). Common Edible Seaweeds in the Gulf of Alaska. Fairbanks, AK: Alaska Sea Grant Program.
- Russell, P. (2011). Alutiiq Plantlore: An Ethnobotany of the peoples of Nanwalek and Port Graham, Kenai Peninsula, Alaska. Alaska Native Knowledge Network Center for Cross-Culture Studies, University of Alaska Fairbanks.
- Schofield, J., (1989). Discovering Wild Plants Alaska, Western Canada, The Northwest. Portland, OR: Northwest Books
- Wading or rubber boots
- Raincoat
- Warm clothes
- Brown lunch bags for each student/group to put harvested seaweed in (in kit)
- Index cards
- Glass jars
- Pickle jar with the pickle juice (students choose whether sweet or dill)
- ¼ cup of salt
- A large glass bowl or gallon glass jar
- Honey or plain sugar syrup
- Aluminum foil
- Baking sheet
- Backpack
- Students file folders

Activity 6: Harvesting & Preservation of Leaves, Stems and Roots

To learn the Sugt'stun names of the edible plants and properly harvest and preserve them

- Permission slips for field trip according to school district policies
- Dress appropriately
- Gloves
- Brown paper lunch bags
- Clipboards

- Index cards
- Cameras
- Student's file folder
- Ziploc™ bags
- Pot (to blanch leaves and stems)
- Russell, P. (2011). *Alutiiq Plantlore: An Ethnobotany of the peoples of Nanwalek and Port Graham, Kenai Peninsula, Alaska*. Alaska Native Knowledge Network Center for Cross-Culture Studies, University of Alaska Fairbanks
- Schofield, J. (1989). *Discovering Wild Plants Alaska, Western Canada, The Northwest*. Portland, OR: Northwest Books
- DeCourtney, C.A. (2008). *Traditional Food Guide for Alaska Native Cancer Survivors*. Anchorage, AK: Alaska Native Tribal Health Consortium

Activity 7: Harvesting & Preservation of Berries

To learn about harvesting and preserving berries

- Permission slips according to school policies
- Dress according to weather
- Cameras
- Small buckets
- Clipboards
- Index cards
- Cheesecloth
- Colanders
- Venn Diagram template
- Russell, P. (2011). *Alutiiq Plantlore: An Ethnobotany of the peoples of Nanwalek and Port Graham, Kenai Peninsula, Alaska*. Alaska Native Knowledge Network Center for Cross-Culture Studies, University of Alaska Fairbanks
- Schofield, J., (1989). *Discovering Wild Plants Alaska, Western Canada, The Northwest*. Portland, OR: Northwest Books
- DeCourtney, C.A., (2008). *Traditional Food Guide for Alaska Native Cancer Survivors*. Anchorage, AK: Alaska Native Tribal Health Consortium

Activity 8: Plant Pests

To investigate the types of plant pests

- Permission slips according to school district policies (field trip)
- Clipboard for each student
- Cameras
- Index cards
- White towels/white pillowcase
- Empty jars (put holes in the covers)
- Butcher paper
- Russell, P. (2011). *Alutiiq Plantlore: An Ethnobotany of the peoples of Nanwalek and Port Graham, Kenai Peninsula, Alaska*. Alaska Native Knowledge Network Center for Cross-Culture Studies, University of Alaska Fairbanks

- Schofield, J., (1989). *Discovering Wild Plants Alaska, Western Canada, The Northwest*. Portland, OR: Northwest Books
- DeCourtney, C.A., (2008). *Traditional Food Guide for Alaska Native Cancer Survivors*. Anchorage, AK: Alaska Native Tribal Health Consortium
- Colbert, M. Dominique., *Insects of south-central Alaska*

Activity 9: Scavenger Hunt

To test students' knowledge of the edible plants they have been working with

- Permission slips according to school district policies
- Invitations to parents
- Clear contact paper
- Clip boards for each group
- A compass for each group
- Scavenger Hunt list
- Small Ziploc™ bags for collecting plants
- Cameras
- Texts:
 - Crowell, Aron, L., Steffian, Amy, F., Pullar, Gordon, L., (2001), *Looking Both Ways, Heritage and Identity of the Alutiiq People*, Fairbanks, AK., University of Alaska Press.
 - Schofield, J. (1989). *Discovering Wild Plants; Alaska, Western Canada, The Northwest Books*. Anchorage AK: Alaska Northwest Books.
 - ANTHC. (2008). *Traditional Food Guide: For Alaska Native Cancer Survivors*. Anchorage, AK: Alaska Native Tribal Health Consortium, Office of Alaska Native Health Research, Cancer Program
 - Russell, P. (2011). *Alutiiq Plantlore: An Ethnobotany of the peoples of Nanwalek and Port Graham, Kenai Peninsula, Alaska*. Alaska Native Knowledge Network Center for Cross-Culture Studies, University of Alaska Fairbanks
- Have students get their file folders with the cards they have been creating in the past activities to use as resource to locate Sugt'stun translations, facts about edible plants, and pictures

Packing and Unpacking Instructions

Chugachmiut Local Education Coordinators and educators should work together to unpack and inventory kit materials. When the kit packages arrive in the community, the first action to take is to count the parcels and assess their condition, and then identify a dry, heated, and safe storage space for boxes, bags, and other packaging as kit materials are to be repacked in the same containers and the same sequence of steps as when they arrived. Any damage existing when the packages were shipped will be marked and noted on a separate inventory sheet. Use an indelible marker, such as a Sharpie® to mark any new damage to the boxes. Then, **leave the boxes unopened in the display area for twenty-four hours so that it can acclimate to the environment in local display facility (school, archaeological repository, or museum).**

Open and Unpack

Parcels should be opened in numerical order. The first box will provide exhibit display suggestions and an inventory of items in each box so that materials can be moved as close to their display area as possible for ease in unpacking and exhibit development. Before unpacking containers review the inventory and picture guide, found on the following pages of this guide book, to see how items are placed in each layer. As each box or bag is unpacked, both the Local Educator and Educator should date and initial the inventory sheet.

All electronic equipment should be tested before use to ensure that it is in proper working order. Rechargeable batteries for cameras and recorders are included in the kit; batteries have been charged but should be recharged as cameras are unpacked. Count consumable items to be sure that enough have been provided.

Setup

Chugachmiut Heritage Kits are designed to be interactive. Materials should be made available to students and community members to handle, when it is appropriate. In the event that anything is broken or damaged during the exhibit, that item should be returned to its assigned package. The Local Education Coordinator should be notified immediately, and the Coordinator should notify the office. All items, even those that may be broken or damaged are to be returned to Chugachmiut.

Repack

Following the exhibit, recharge all batteries, remove DVD ROM from monitors, securely wrap all cords using Velcro® straps, and consumable items are to be inventoried. **Move crates and bags from storage and allow them to acclimate to the artifacts that will be stored in them for at least twelve hours before repacking.** Move packing containers as close to the items which will be displayed in them as possible for ease and convenience. Pack boxes just as they were unpacked using the picture guide on the following pages of this guide book; there is a place for everything in the kit and each item should be returned to its proper place for return to Chugachmiut. Inventory each item as it is repacked and note any damage, missing pieces, or dysfunction.

Activities for Grades K-2



Grazing greens in the spring: horsetails and willow leaves

GATHERING PLANTS TO EAT: SEED CHARTS K-2 (1)

Elder Quote/Belief:

Grade Level: K-2

Overview:

Kids often see different kinds of seeds, but it can be hard to remember which seeds become which plants. Here's a “full plate” activity that lets your students connect seeds with grown plants while practicing writing skills, too.

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 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.	G4: Student should be knowledgeable about natural vegetation. L1: Students should understand the value and importance of the Sugt'stun language and be actively involved in its preservation.

Estimated Time: One 30-minute class

Lesson Goal: Establish the connections between seed and the plants they become.

Lesson Objectives: Students will:

1. Identify different types of seeds.
2. Draw the plants which grow from the seed
3. Recognize plant and seed pairs.

Vocabulary Words:

Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
seed		sim'inaq
seeds		sim'inat
plant		naulranek

Materials/Resources Needed:

- Russell, P. (2011). Alutiiq Plantlore: an Ethnobotany of the Peoples of Nanwalek and Port Graham. Fairbanks, Alaska: Alaska Native Knowledge Network Center for Cross-Cultural Studies, University of Alaska Fairbanks.
- Apple (or any fruit with obvious seed) and knife to cut it
- White paper plate – one per student
- Ruler – one per student
- Tacky Glue
- Markers, crayons, colored pencils
- Paper
- Selection of local seed packets – in kit
- Parent letter to parents to request for seed package contribution (Sample letter attached)

Website:

- http://www.education.com/activity/article/plateful_of_seeds_kinder/ Retrieved 6.24.2013. Seed wheel activity.

Teacher Preparation:

- Review activity plan and practice Sugt'stun vocabulary.
- Send letter home to parents requesting seed packet for class activity.
- Place small quantity of seeds into separate bowls and label same. Retain seed packets with plant name folded out of view.

Opening: Ask students if they eat plants? Which parts? Where do plants come from? Have the students ever seen a dandelion? Young dandelion leaves are good for salads. Blowing apart the cluster of fluffy seeds/*sim'inat* means that more dandelions will take root in the soil and grow and provide more salad makings. Hold up an apple (or other fruit) and ask which part of the plant it is. (*The fruit – any plant part that contains seeds is the fruit.*) Have students imagine an apple tree and sketch one. Cut the apple open and show its seeds/ *sim'inat*. Explain that it is not the size of the seed/*sim'inaq* which matters but the directions inside that tell the plant how to grow.

Activities:

1. Distribute supplies; paper plate, markers, crayons
2. Demonstrate how use a ruler to draw a firm black line across the plate's diameter four times, so that it is divided first into halves, then into quarters, and then into eighths. Have students draw their own lines.
3. Teach students to say seed/*sim'inaq* and seeds/*sim'inat* in Sugt'stun.
4. Ask students if there are any local plant seeds that they eat. (*any of the local berries contain seeds, beach peas are actually seeds*)
5. Review seeds with students. Ask, "What plant grows from this seed/*sim'inaq*?" and see if students can name the plant on the seed packet cover.
6. Distribute seed bowls around the classroom. Invite students to select a seed/*sim'inaq* and glue it down near the bottom of the slice, close to the plate's center. Directly above the seed/*sim'inaq*, have students draw a picture of what the plant or flower looks like when the seed/*sim'inaq* has grown.
7. Around the plate edge, help students write the plant name.
8. Have students outline plants which grow locally with a highlighter.
9. Encourage students to share their efforts by saying "This seed/*sim'inaq* is a _____"
[Note: See Russell, P., [Alutiq Plantlore](#) for plant names in English and Sugt'stun.]
10. *Optional:* Hold up seeds/*sim'inat* and have students them identify them by name and whether they are local or not.
11. These "seed wheels" can be saved for a unit display.

LETTER TO PARENTS

Cut here and paste onto school letterhead before making copies

Dear Parents,

Our class is starting a new unit, **Gathering Plants to Eat**. We will be investigating local edible plants.

We will start by creating a seed wheel in the classroom. If you could help your child select a favorite fruit or vegetable and provide a seed packet for your child to glue onto their seed wheel in the class it would be greatly appreciated.

At home you can add to your child’s understanding and interest by asking your child what he or she discovered in the classroom about local plants. You can spend time counting seeds you find in fruits and vegetables as you prepare meals together and talk about how all plant parts that have seeds are considered fruits. You can have your child start a plant at home using a favorite fruit or vegetable seed.

If you have any questions please call or feel free to visit us in the classroom.

Sincerely,

Teacher

GATHERING PLANTS TO EAT: PLANT PARTS K-2 (2)

Grade Level: K-2

Overview: Even though plants may look different they share the same basic components: root, stem, leaf, and reproductive organs. Here students actively model and observe basic plant parts.

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 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.	G4: Students should be knowledgeable about natural vegetation. L1: Students should understand the value and importance of the Sugt’stun language and be actively involved in its preservation.

Estimated Time: Two 20-25 minute classes

Lesson Goal: Introduce basic plant anatomy and functions

Lesson Objectives: Students will:

1. Model basic plant parts: flower, fruit, stem, leaf, root, and seed in both English and Sugt’stun.
2. Observe and identify basic plant parts in English and Sugt’stun
3. Press and label plants and parts.
4. Act out the functions of plant parts.

Vocabulary Words: Sugt’stun Dialects

English:	PWS:	Lower Cook Inlet:
seed		sim’inaq
root	nukeq	nuket
stem	puk	puk
leaf	pe <u>l</u> uq	pe <u>l</u> uq
flower	nanahuat	suitka’q

Materials/Resources Needed:

- Blackaby, D. (2011). Plant Plumbing: A Book about Roots and Stems. Minneapolis, Minnesota: Picture Window Books. (in kit)
- Buckets and shovels (in kit)
- Bucket of water to rinse plant roots
- Gathering container (box, basket...) to transport dandelions

Teacher Preparation:

- Review activity plan and practice Sugt'stun vocabulary.
- Due to the room needed for Class I's active plant function role playing decide whether to hold class in classroom, gymnasium, or outdoors.
- Consider video-ing or photographing plant function role playing for unit's finale.
- Determine how much of Plant Plumbing to share with students in Class II.

Activities:

Class I:

1. Clear area in classroom or move to gymnasium to allow 'plants' room to role play.
2. Assign each student a plant function role to play: each will be a root/*nuket*, a stem/*puk*, a leaf/*peluq*, a flower/*suitka'q*, or a seed/*sim'inaq*. Note: Assign more roots and leaves than stems, flowers, or seeds.
3. Have 'roots' lie down on the ground in a root-like tangle (can be stringy) and say (or make the sound) "slurp, slurp, slurp." Explain that 'roots' are "slurping" nutrients and water from the soil. Stop 'slurping.' Have roots practice their Sugtstun name; *nuket*.
4. Have 'stems' lie down in a straight line above the roots and say (or make the sound) "gurgle, gurgle, gurgle." Explain that stems carry the nutrients slurped up by the roots to the rest of the plant. Have the roots hold onto stems' feet and both groups make their noises for a while and then stop. Have stems practice their Sugtstun name; *puk*.
5. Have 'leaves' place themselves by the hands and shoulders of the 'stems' and breathe deeply. Explain that leaves bring in energy from the sun and carbon dioxide and breathe out oxygen. Have leaves practice their Sugtstun name; *peluq*. Have the roots and stems join in with the leaves making their noises for a while and stop.
6. Next have flowers assemble in clusters at the tops of the stems and have them say, "bloom, bloom, bloom" in a high voice. Have flowers practice their Sugtstun name; *suitka'aq*
7. Announce that you will be 'tapping' a few students to turn into 'seeds.' The 'seeds' should roll down quietly to the roots and wait silently.
8. Have everyone (roots, stems, leaves, and flowers) make their noises. Tap the 'flowers' to turn them into 'seeds.'
9. Once all the flowers have been transformed have everyone stop their noises but stay in position.
10. With student input review all the plant functions. Ask which parts of the plant became seeds. Talk about the energy expended to produce the flowers and the different ways they can be pollinated to become seeds and start the life cycle over. Ask students which parts of the plants are edible. Explain that it varies from plant to plant. What parts of plants have students eaten? The Sugpiaq people learned over many generations which parts of which plants could be eaten. We can learn about these edible plant parts from Elders and Recognized Experts when we look around our community and its surroundings.
11. Remind students of all the activities going in plants that we may not be able to hear but are nevertheless occurring. Turn seeds back into flowers and call on each group (roots, stems...) to describe their function and repeat their Sugt'stun names.
12. *Optional:* Enjoy an encore

Class II:

1. Take students outside to dig dandelions plants from the schoolyard. Remind students to be gentle as they extract the plant and to keep roots intact, flowers or seeds (if present).
2. Shake off the excess dirt, rinse roots in water, and place dandelions in gathering container to return to classroom.
3. Place dandelions on plain paper around classroom for student viewing.
4. Use Plant Plumbing to review and discuss plant parts and their functions.
5. Have students identify which parts of the plants they modeled in the previous class.
6. Review Sugt'stun names of the plant parts and talk about uses for various parts: young dandelion leaves/ *pe_lut* are a traditional spring salad green gathered in the early spring before they become bitter. The leaves can also be boiled and eaten like spinach. The roots can be chopped and used to make tea. Dandelion flower buds are good pickled and added to omelets. Dandelion flowers may even be rinsed rolled in flour, and fried in butter. (Schofield, J.J., Discovering Wild Plants pp.294-295)
7. Have students taste test a (rinsed) dandelion leaf. What do they think?

GATHERING PLANTS TO EAT: PLANT HABITATS K-2(3)

Grade Level: K-2

Overview: Habitats, or ecosystems, are very different all over the world and even around each community. What have the Sugpiat learned about the local habitats and the plants live there? The best way to learn about habitats is to go out and take a close look, and discover the edible plants that sustained the Sugpiaq people for generations.

Standards:

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<p>A4: Practice traditional responsibilities to the surrounding environment.</p> <p>C1: Perform subsistence activities in ways that are appropriate to local traditions.</p> <p>D1: Acquire in-depth cultural knowledge through active participation and meaningful interaction with Elders.</p> <p>E1: Draw parallels between knowledge derived from oral tradition and that derived from books.</p>	<p>Geography B1: Know that places have distinctive geographic characteristics.</p>	<p>SS3: Students should be able to gather plants, berries, and other edible foods.</p> <p>G4: Students should be knowledgeable about natural vegetation.</p>

Estimated Time: Three 20-30 minute class, one field trip

Lesson Goal: To identify and explore local habitats and identify their edible plants

Lesson Objectives: Students will:

- Describe local habitats
- Identify edible plants within local habitats
- Identify edible plants in the field and in field guides
- Play Habitat Matching Game
- Label map and create a key to identify a habitat area in their community

Vocabulary: See Russell, P. [Alutiiq Plantlore](#) for English and Sugt'stun plant names

Materials/Resources Needed:

- Russell, P. (2011). [Alutiiq plantlore: an ethnobotany of the peoples of Nanwalek and Port Graham](#). Fairbanks, Alaska: Alaska Native Knowledge Network Center for Cross-Cultural Studies, University of Alaska Fairbanks.

Class I

- Habitat Display Photos (in kit)

Class II

- Field Trip transportation arrangement
- Field Trip Permission slip – one per student
- Elder/Recognized Expert to accompany field trip
- Appropriate clothing for field trip
- Paper sacks for collecting edible plant leaves – 10-12
- Marker to label sacks
- Gathering container (box, basket...) to transport leaves back to classroom

Class III

- Habitat Display Photos (in kit)
- Field cards (in kit)
- Harvested greens from field trip
- Dehydrator (in kit) or access to oven
- Olive oil to drizzle on edible leaves, shoots
- Salt to sprinkle on edible leaves, shoots

Class IV

- Elpel, T. (2005). *Shanleya's Quest*. Missoula, Montana: Mountain Press.
- Paper plates and napkins – one each per student

Website:

- <http://idahoptv.org/dialogue4kids/season10/habitat/facts.cfm> Retrieved 7.12.2013, Kids' definitions of habitat and ecosystems.

Teacher Preparation:

- Review activity plan and practice Sugt'stun vocabulary.
- Decide on local habitat to explore for field trip.
- Plan and arrange field trip date, transportation, permission slips.
- Invite an Elder or Recognized Expert to accompany class on field trip to identify edibles.

Opening: Explain that class will be exploring habitats. What is a habitat? A habitat is a special place where a plant or animal lives. Just like you have a home or place to live, so do animals and plants. When we talk about a plant's home it is more like a neighborhood than a "house." Plants need five things to survive in their habitats: food, water, air, sunlight, and space to grow. But which plants live in which neighborhoods or habitats?

Activities:

Class I – Habitats

1. Write the words 'Ocean', 'Wetland', 'Forest', 'Grassland (Meadow)', and 'Tundra' on the board. These are the major habitats in Alaska. Each one can be divided into smaller categories.
2. Ask students if they recall any of the plants that live in these habitats. It's tricky to remember without a guidebook or photo or actually being there.
3. Display the Habitat Display Photos and ask students to name the habitat type. Does having a picture of the habitat help students to recall which plants grow there?
4. Distribute field card sets to students and point out where the cards indicate in which habitat the plant grows.
5. Hold up the Habitat Photos again and have students locate a plant from the field card sets that grows in that particular habitat.
6. Review some of the plants' names in English and, if possible, in Sugt'stun. [See Russell, P., *Alutiiq Plantlore for both English and Sugt'stun names.*]
7. Ask students if they feel that they're ready to find these plants in their habitat? Students will find out on the field trip.
8. Announce the field trip site and encourage students to remember a plant that grows in that habitat.

Class II – Field Trip

1. Go on field trip.
2. Ask students if they recognize any of the plants from the field cards they looked in class.
3. Ask students to point out where plants get what they need in this habitat: ***food/ water/ air/ sunlight/ space to grow***. [Note: It may be tricky for students to identify the plants' food source – trace elements from the soil are their food.]
4. Invite Elder/Recognized Expert to identify several edible plants for students. If possible have him/her teach students edible plant names in both English and Sugt'stun.
5. Demonstrate how to harvest edibles without unnecessary damage to plants and without devastating the plant community.
6. Have students follow example of Elder/Recognized Expert and locate similar edible plants.
7. Under supervision allow students to collect some edible plant leaves and place into labeled paper sacks.
8. Place paper sacks in gathering container to transport back to class.
9. Review plants collected with Elder/Recognized Expert and their names in both English and Sugt'stun. Encourage Elder/recognized Expert to share any stories or memories of harvesting or preparing edible plants.
10. Ask students if it was easier identifying plants by listening to and observing a person show how to instead of looking at a book or photo. Explain to students that learning from an Elder (spending time with Elders, carefully observing them performing subsistence activities) is the traditional way to learn around the world.
11. Return to classroom. Keep greens in labeled sacks and store in cool place.

Class III – Matching Game

1. Review Habitat Display Photos and ask students what habitats provide for the plants that live there. Ask which habitat type they explored on the field trip.
2. Place Habitat Display Photo of field trip destination in central area.
3. Distribute field card sets and challenge students to find field cards of plants from that habitat.
4. Have students set out appropriate field cards and distribute harvested greens for students to match with the field cards.
5. List English and Sugt'stun names for gathered plants on board and discuss their traditional uses. Save list on board for Class IV. [See Russell, P., *Alutiiq Plantlore for both English and Sugt'stun names and traditional uses.*]
6. Set aside and label samples of raw edibles in cool location to compare with edible 'crisps' in Class IV.
7. Place edibles leaves on dehydrator screens, drizzle with olive oil, sprinkle with salt and allow to crisp overnight. Label trays so that crisped greens can be easily identified.

Class IV – ‘Chips’

1. Distribute paper plates and pass around trays of ‘crisps’ for students to sample identifying them by their English and Sugt’sun names. How do they find the taste?
2. From the reserve samples pass around the same edible greens which are still raw. Ask students how the taste compares? Which do they prefer? Would they be able to tell that these plants were edible without an Elder or Recognized Expert? Emphasize the importance of having an adult confirm that something is edible before tasting.
3. Read aloud Shanleya’s Quest by Elpel and discuss how knowledge of local habitats makes gathering wild edibles possible.

GATHERING PLANTS TO EAT: MAKING AKUTAQ K-2(4)

Grade Level: K-2

Overview: There are many versions of *akutaq*, Native ice cream, which take advantage of the sweetness of local berries to make this treat.

Standards:

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
C1: Perform subsistence activities in ways that are appropriate to local traditions.	Geography B1: Know that places have distinctive geographic characteristics.	SS3: Students should be able to gather plants, berries, and other edible foods. G4: Students should be knowledgeable about natural vegetation.

Estimated Time: One field trip (optional), One 20-30 minute class

Lesson Goal: To prepare *akutaq*, Native ‘ice cream’

Lesson Objectives: Students will:

- *Optional:* Harvest local berries
- Prepare *akutaq* – Native ice cream
- *Optional:* Compare *akutaq* recipes
- Learn and sing Sugt’stun ‘*Akutaq*’ song

Vocabulary Words: Sugt’stun Dialects

English:	PWS:	Lower Cook Inlet:
Native ice cream		akutaq

Materials/Resources Needed:

- Russell, P. (2011). Alutiiq plantlore; an ethnobotany of the peoples of Nanwalek and Port Graham. Fairbanks, Alaska: Alaska Native Knowledge Network Center for Cross-Cultural Studies, University of Alaska Fairbanks.

Class I

- Field Trip transportation arrangement
- Field Trip Permission slip – one per student
- Appropriate clothing for field trip
- Bags or buckets to collect berries – one per student
- Gathering container (box, basket...) to transport berries back to classroom

Class II

- Ingredients for selected *akutaq* recipe (berries, Crisco, sugar)
- Mixing bowls, spoons, measuring cups
- *Optional:* Blender
- Paper cups, napkins, plastic spoons
- Gguangkuta Sugt’stun Atutepet Nanwalegmi CD – *Akuutaq* song, Track 2 (in kit)
- Sinew Back Bow CD – *Akutaq* Song, Track 14 (in kit)

- “Akutaq Song Lyrics” Handout (master copy attached) – one photocopy per student
- *Optional*: Dehydrator (in kit)

Websites:

- <http://www.ankn.uaf.edu/npe/culturalatlases/virtualmuseum/writings/native%20food/098d22f2-9971-4588-9a87-680b4fe88955.html> Retrieved 7.15.2013. Yupik (with fish) *Akutaq* recipe.
- <http://sweetstateofmine.blogspot.com/2011/05/alaska-akutaq-eskimo-ice-cream.html> Retrieved 7.15.2013. Coastal Berries (no fish) *Akutaq* Recipe.
- <http://sweetstateofmine.blogspot.com/2011/05/alaska-akutaq-eskimo-ice-cream.html> Retrieved 7.15.2013. Kwethluk (upriver from Bethel) *Akutaq* with mashed potatoes instead of fish (YouTube video: 6 minutes)

Teacher Preparation:

- Review activity plan and practice Sugt’sun vocabulary.
- If berries (crowberries are traditional but blueberries, cloudberrries, cranberries, salmonberries may also be used) plan and arrange field trip date, transportation, permission slips.
- If no local berries are available substitute frozen blueberries or even dried fruits.
- Assemble *akutaq* prep materials for Class II. Decide which version (Nanwalek or Tatitlek) of the *Akutaq* song to learn. Decide which recipe to use. The coastal version (See website above) is the simplest (1 Cup Crisco, 1 Cup Sugar, 4 Cups berries, ½ Cup water or berry juice blended). Class may experiment with Coastal Recipe by adding mashed potatoes – Sugpiaq style.
- Note: There is no standard Sugpiaq style recipe. However, Rhoda Moonin of Nanwalek offers the following version: Whip 1 tablespoon fermented salmon eggs by slowly adding Wesson oil. Beat until stiff. Add 3 cups cooled mashed potatoes. Slowly add water and mix until soft and salt to taste. Create your own versions by adding ingredients such as fresh salmon or herring eggs, dried or smoked fish, or some berries (bunch berries, crow berries, or mountain berries).
- Because of the differences in spelling and pronunciation decide whether it would be helpful to distribute written lyrics to *Akutaq* song to students or not.
- This activity plan may be extended by inviting students to share family *akutaq* recipes or prepared *akutaq* to compare.
- *Optional*: If fresh berries are harvested some may be set aside to turn into fruit leather in the dehydrator to demonstrate another way to preserve and enjoy berries.

Opening: Explain to students that not only are berries tasty they provide important vitamins we need to be healthy. Traditionally, in the days before sugar was available, Natives across Alaska took advantage of berries’ sweetness to make dishes known as Eskimo or Native ice cream. There is no ice or cream in these recipes but they are popular as sweet treats. In the Interior and Western Alaska people often add whitefish. Sugpiaq style *akutaq* uses berries, mashed potatoes, and seal oil (though Wesson Oil is often substituted).

Activities:

Class I – Field Trip

1. Go on field trip.
2. Identify berries to be harvested and review name in both Sugt'stun and English.
[Note: See Russell, P. Alutiiq Plantlore for names in both English and Sugt'stun and traditional uses.]
3. Demonstrate how to harvest edibles without unnecessary damage to plants and without devastating the plant community.
4. Distribute buckets or baskets and allow students time to harvest berries (approximately ½ Cup per student).
5. Return to classroom.
6. Clean berries. [Note: To 'de-worm' berries first place them in buckets of salt (or salted) water. Any worms float to the surface within an hour and are discarded. Then clean and rinse berries in fresh water.]

Class II – Ice Cream and Song

1. Assemble *akutaq* prep materials: ingredient, mixing bowl, spoons. Announce that students will prepare and enjoy *akutaq* once they learn the song to celebrate it.
2. Listen to *Akutaq* song several times. Have students 'tune their ears' to the sound of Sugt'stun. Encourage students to sing along, listen to the CD, and sing along again.
3. *Optional:* Distribute *Akutaq* lyrics to students to help learn song. Because of the spelling differences between English and Sugt'stun the written may or may not prove helpful.
4. Once students have learned the song invite their help in preparing *akutaq*. [Note: If using frozen berries drain excess water to keep *akutaq* from becoming runny. Blender may be used instead of mixing by hand though whipping helps to melt the sugar and allow it to blend better.]
5. Distribute paper cups, napkins, and plastic spoons and serve the *akutaq*.
6. Have students sing *Akutaq* song as they mime eating up all their *akutaq*.
7. Enjoy!

“Akutaq” Song Lyrics

Gguangkuta Sugt’stun Atutepet Nanwalegmi – Our
Sugt’stun Songs in Nanwalek
Akuutaq (Qikertarmiut Atutit –Kodiak Song)

Tatankuk mamallu
Akuutartek akulluku
Tatankuk mamallu
Akuutartek akulluku
Kukuat tailuni
Akuutallrak piturluku
Tatankuk mamallu
Kingullrani apairluku

Sinew Back Bow – “Akutaq” Song (Tatilek)

Taa taankut mamalupi lilutaq
akutagmek kuukenwasaqtailuni
naarpiar akutaq piitegluku taa
tankut mamalu alutagluu
kucikukcaggen

Mom and Dad are making ice cream,
They call the baby to come and eat.
He eats it all. There is none left, so
Mom and Dad lick the bowl.

Activities for Grades 3-6



Grazing from the ocean shores: bull kelp, sea lettuce, laver, and ribbon kelp.

GATHERING PLANTS TO EAT: LEARNING TO LOOK 3-6(1)

Grade Level: 3-6

Overview: Students sharpen their plant observation skills and produce a plant journal in which to record their observations.

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.	Science C2: Develop an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms.	G4: Students should be knowledgeable about natural vegetation. L1: Students should understand the value and importance of the Sugt'stun language and be actively involved in its preservation.

Estimated Time: One 20-30 minute outdoor session and one 30 minute class

Lesson Goal: To sharpen plant observation skills and produce a plant journal.

Lesson Objectives: Students will:

- Imagine themselves as Explorer Botanists
- Observe and describe three schoolyard plants
- Discuss which observations are most helpful in distinguishing plant types
- Appreciate how plant knowledge was traditionally shared
- Make an original 'Plant Journal'
- Enter 'Plant Journal' observations

Vocabulary

Sugt'stun

Words:

Dialects

English:	PWS:	Lower Cook Inlet:
Gathering Plants that Grow to Eat		Katurqilua Naulranek Piturkanek

Materials/Resources Needed:

- School playground with at least three varieties of growing plants
- Student notebooks and pens or pencils to record 'exploration notes' – one set per student
- Brown paper bags (or two construction paper sheets) to make journal covers – one per student
- 20" twine (or string or yarn) per student
- Paper hole punch
- Scissors or paper cutter
- Markers to title journal, make sketches
- Pens or pencils to record 'exploration notes'
- Field Guides (in kit)

Teacher Preparation:

- Review activity plan and practice Sugt'stun vocabulary. Assemble journal materials.
- Note: These journals are the students' unit portfolios and are used in each activity.
- Review the field guides in the kit and note which aspects of plants are commonly used to describe them (*habitat, leaf shape, color of leaves and stems; flower shape; placement of leaves and flowers on stems; shininess, smoothness or 'hairiness' of leaves and stems...*).

Opening: Tell students that they are to imagine that no one has ever seen any of the plants in the schoolyard before. They are Explorer Botanists who will describe the plant life for the rest of the world so they must be able to share very detailed explanations.

Activities:

Outdoor Session:

12. Have students dress to go outside, gather up notebooks and writing implements.
13. Go out to the schoolyard and encourage students to see the plant life with fresh eyes. They are plant explorers sent out by a curious world to learn about new plants.
14. Allow students time to select three plants in the schoolyard and list as many details as possible (including scent) about each plant. Sketches may be drawn. If there are no thorns or spines students may also wish to touch the plants.
15. Let students know that this will be the rough draft of their first plant journal entry.
16. Return to the classroom.

Plant Journals:

1. Distribute brown paper sacks (or two sheets of construction paper), six sheets of white paper, and a 20 inch length of twine to each student.
2. Have students lay the brown paper bag down with the white paper stacked on top and fold the bag in half to form a book with white pages in the middle.
3. Hole punch the folded side twice, lace the yarn through, and tie a bow to secure the yarn.
4. Trim the brown bag covers with scissors or a paper cutter.
5. Have students title their journals 'Gathering Plants that Grow to Eat' in English and *Katurqilua Naulranek Piturkanek* in Sugt'stun and add their names.
6. As a class which observation details are most useful to describe plants. [Field guides may be referred to.] Ask students if their grandparents or other Elders have ever helped them to identify plants. What sorts of details have they shared? Note that field guides are a recent development. Around the world people traditionally relied on knowledge passed down to them from their Elders and made their own observations to learn which plants could be harvested and for what purpose. Children would accompany Elders on harvesting expeditions and carefully watch what the Elder picked and how it was used.
7. Have students select the four to five most useful details from their exploration notes and record them on the first three pages of their journals. Drawings may be included.

8. As a class discuss what more information people would want to know about these plants. [*What uses may the plant have as food, medicine, or household resource; When it should be harvested; How to prepare it for use...*] Where would students go to find this information? [*Elders, field guides, textbooks*]
9. *Optional*: Distribute field guides for students to identify their chosen plants.

GATHERING PLANTS TO EAT: LEARNING TO LOOK 3-6(1)

Grade Level: 3-6

Overview: Students sharpen their plant observation skills and produce a plant journal in which to record their observations.

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.	Science C2: Develop an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms.	G4: Students should be knowledgeable about natural vegetation. L1: Students should understand the value and importance of the Sugt'stun language and be actively involved in its preservation.

Estimated Time: One 20-30 minute outdoor session and one 30-minute class

Lesson Goal: To sharpen plant observation skills and produce a plant journal.

Lesson Objectives: Students will:

- Imagine themselves as Explorer Botanists
- Observe and describe three schoolyard plants
- Discuss which observations are most helpful in distinguishing plant types
- Appreciate how plant knowledge was traditionally shared
- Make an original 'Plant Journal'
- Enter 'Plant Journal' observations

Vocabulary Words:	Sugt'stun Dialects	
English:	PWS:	Lower Cook Inlet:
Gathering Plants that Grow to Eat		Katurqilua Naulranek Piturkanek

Materials/Resources Needed:

- School playground with at least three varieties of growing plants
- Student notebooks and pens or pencils to record 'exploration notes' – one set per student
- Brown paper bags (or two construction paper sheets) to make journal covers – one per student
- 20" twine (or string or yarn) per student
- Paper hole punch
- Scissors or paper cutter
- Markers to title journal, make sketches
- Pens or pencils to record 'exploration notes'
- Field Guides (in kit)

Teacher Preparation:

- Review activity plan and practice Sugt'stun vocabulary. Assemble journal materials.
- Note: These journals are the students' unit portfolios and are used in each activity.
- Review the field guides in the kit and note which aspects of plants are commonly used to describe them (*habitat, leaf shape, color of leaves and stems; flower shape; placement of leaves and flowers on stems; shininess, smoothness or 'hairiness' of leaves and stems...*).

Opening: Tell students that they are to imagine that no one has ever seen any of the plants in the schoolyard before. They are Explorer Botanists who will describe the plant life for the rest of the world so they must be able to share very detailed explanations.

Activities:

Outdoor Session:

1. Have students dress to go outside, gather up notebooks and writing implements.
2. Go out to the schoolyard and encourage students to see the plant life with fresh eyes. They are plant explorers sent out by a curious world to learn about new plants.
3. Allow students time to select three plants in the schoolyard and list as many details as possible (including scent) about each plant. Sketches may be drawn. If there are no thorns or spines students may also wish to touch the plants.
4. Let students know that this will be the rough draft of their first plant journal entry.
5. Return to the classroom.

Plant Journals:

1. Distribute brown paper sacks (or two sheets of construction paper), six sheets of white paper, and a 20 inch length of twine to each student.
2. Have students lay the brown paper bag down with the white paper stacked on top and fold the bag in half to form a book with white pages in the middle.
3. Hole punch the folded side twice, lace the yarn through, and tie a bow to secure the yarn.
4. Trim the brown bag covers with scissors or a paper cutter.
5. Have students title their journals 'Gathering Plants that Grow to Eat' in English and *Katurqilua Naulranek Piturkanek* in Sugt'stun and add their names.
6. As a class which observation details are most useful to describe plants. [Field guides may be referred to.] Ask students if their grandparents or other Elders have ever helped them to identify plants. What sorts of details have they shared? Note that field guides are a recent development. Around the world people traditionally relied on knowledge passed down to them from their Elders and made their own observations to learn which plants could be harvested and for what purpose. Children would accompany Elders on harvesting expeditions and carefully watch what the Elder picked and how it was used.
7. Have students select the four to five most useful details from their exploration notes and record them on the first three pages of their journals. Drawings may be included.
8. As a class discuss what more information people would want to know about these plants. [*What uses may the plant have as food, medicine, or household resource;*

When it should be harvested; How to prepare it for use...] Where would students go to find this information? [*Elders, field guides, textbooks*]

9. *Optional:* Distribute field guides for students to identify their chosen plants.

GATHERING PLANTS TO EAT: SPRING BEACH SALADS 3-6(2)

Grade Level: 3-6

Overview: Students bypass the store and directly harvest food from the beach to make a spring greens salad.

Standards:

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
D3: Interact with Elders in a loving and respectful way that demonstrates an appreciation of their role as culture bearers and educators.	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.	G4: Students should be knowledgeable about natural vegetation. L1: Students should understand the value and importance of the Sugt’stun language and be actively involved in its preservation.

Estimated Time: One fieldtrip, one 30-minute class, one Plant Journal Entry

Lesson Goal: To identify, harvest, prepare, and eat local edible plants.

Lesson Objectives: Students will:

- Recognize the availability of local edible plants
- Identify edible beach plants in both English and Sugt’stun
- Distinguish edible (goose tongue) from inedible (arrow grass) with an Elder/Recognized Elder and with a field guide
- Harvest and process sufficient beach greens for a salad
- Prepare and eat ‘Spring Beach Salad’

Vocabulary Words: Sugt’stun Dialects

English:	PWS:	Lower Cook Inlet:
lovage		pitruuskaa
laver		caqallqaq
sea lettuce		kauustaaruaq
beach greens		quten kaptut’staruai
goosetongue		weguaq

Materials/Resources Needed:

Class I

- Field Trip transportation arrangement
- Field Trip Permission slip – one per student
- Elder/Recognized Expert to accompany beach field trip
- Appropriate clothing for beach field trip
- Cameras (to photograph beach edibles) – one per small student group
- Paper bags to collect beach edibles
- Field Guides to Edible Plants – one per small student group

Class II

- Butcher paper and markers to display and label collected plants
- Salad bowls and utensils (one salad bowl set per small student group)
- Salad dressing/ingredients (either prepared ahead of time or in class)
- Paper bowls and plastic forks for salad – one set per student (one more set per group if salad dressing is prepared in class)

Edible Plant Journal

- *Optional:* Plant press (in kit) or acid free paper for pressing plants in heavy books
- *Optional:* Drawing pencils, markers to sketch plants

Teacher Preparation:

- Review activity plan and practice Sugt'stun vocabulary.
- Plan and arrange field trip date, transportation, permission slips.
- Invite an Elder or Recognized Expert to accompany class on field trip to identify edibles.
- Decide whether salad dressing will be made (or purchased) before Class II or prepared in class – in which case a recipe must be chosen and dressing ingredients made available. (The paper bowls and plastic forks may be used for the dressing.)
- Student Plant Journal entries may be made in an extended Class II or a separate class

Activities:

Class I – Field Trip

1. Go on field trip.
2. Invite Elder/Recognized Expert to identify several edible plants for students. If possible have him/her teach students the plant names in both English and Sugt'stun.
3. Show students how careful they must be not to confuse goose tongue with arrow grass. Although the tips of the arrow grass taste like cilantro the base of the leaves has cyanide and the entire plant should be avoided. Its leaves are straighter than the curved, 'more welcoming' leaves of goose tongue.
4. Distribute Field Guides for students to confirm the differences between goose tongue and arrow grass. Show students how to use field guide. [Note: Back in the classroom discuss how students learned best – with a live guide or with the field guide.]
5. Demonstrate how to harvest edibles without unnecessary damage to plants and without 'wiping out' an entire patch.
6. Divide students into small groups and distribute paper sack for collecting edibles.
7. Designate a photographer in each group and distribute cameras to them. Ask them to photograph all edible plants located in place and then once they are harvested.
8. Allow students time to collect approximately 6-8 cups of edible beach plants.
9. Have students show their harvested plants and review plant names in both English and Sugt'stun. Ask students which plants were easiest to find.
10. Return to classroom. If the salad is not to be prepared until next day store greens in cool place.

Class II – Prepare Spring Beach Salad

1. Distribute large pieces of paper and markers to each student group.
2. Have students display a sample of each of their harvested plants on the paper and label them with in English and Sugt'stun. How many different kinds of plants were collected?
3. Have groups clean and process their plants and place in salad bowl
4. Optional: Have students make salad dressing using paper bowls and plastic forks.
5. Dress salad and serve in paper bowls with plastic forks.
6. Model respectful comments for students to use when tasting a new food such as delicious, really good, I like it, etc... If students don't like the food, they could say, "It's good to know what this tastes like."
7. Discuss whether it was easier to learn about the edible plants from the Elder/Recognized Expert or from the written field guides. Remind students that traditionally people learned how and when and where to harvest edible plants from an Elder or knowledgeable relative out in the field. A live person can explain things more directly – and relevantly – than a written guide. Scientific illustrators still exist as a profession because an illustration can better emphasize a plant's parts than a flat photo. Field trips allow people to experience plants in their local context.

Edible Plant Journal – Have students press samples of (or sketch) their edible plants. Label each in English and in Sugt'stun. On the same page describe where and when it was harvested and what it tasted like. Edit and save copies of field trip photos in a designated computer file for use in a final unit display.

GATHERING PLANTS TO EAT: FIDDLEHEADS & FIREWEED 3-6(3)

Grade Level: 3-6

Overview: Students harvest, process, and prepare a springtime treat, fiddlehead ferns.

Standards:

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
C1: Perform subsistence activities in ways that are appropriate to local cultural traditions.	Geography B1: Know that places have distinctive geographic characteristics. Geography E1: Understand how resources have been developed and used. History B1b: Human communities and their relationship with climate, subsistence bases resources, geography, and technology	SS3: Students should be able to gather plants, berries, and other edible foods. G4: Students should be knowledgeable about natural vegetation. L1: Students should understand the value and importance of the Sugt'stun language and be actively involved in its preservation.

Estimated Time: One fieldtrip, one 30-minute class, one Plant Journal Entry

Lesson Goal: To identify, harvest, prepare, and eat fiddlehead ferns and fireweed shoots.

Lesson Objectives: Students will:

- Recognize the availability of local edible plants
- Identify edible beach plants in both English and Sugt'stun
- Harvest and process sufficient fiddleheads and fireweed shoots for a spring dish
- Prepare and eat 'Sautéed Fiddleheads and Fireweed Shoots'

Vocabulary Words: Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
fiddlehead ferns		kun' aquataq
fireweed		cillqaq

Materials/Resources Needed:

Class I

- Field Trip transportation arrangement
- Field Trip Permission slip – one per student
- Appropriate clothing for field trip
- Cameras (to photograph edibles) – one per small student group
- Paper bags to collect edibles

Class II

- Field Guides to Edible Plants – one per small student group
- Butcher paper and markers to display and label collected plants
- Skillet and sauté utensils, heat source
- Seal oil, butter
- Paper plates and plastic forks – one set per student
- *Optional:* Dehydrator – in kit

Edible Plant Journal

- *Optional:* Plant presses (in kit) OR acid free paper for pressing plants in heavy books
- *Optional:* Drawing pencils, markers to sketch plants

Teacher Preparation:

- Review activity plan and practice Sugt'stun vocabulary.
- Select location for fiddlehead and fireweed shoot harvest.
- Plan and arrange field trip date, transportation, permission slips.
- Student Plant Journal entries may be made in an extended Class II or a separate class.

Activities:

Class I – Field Trip

1. Go on field trip.
2. Explain to students that fiddleheads are harvested in early spring. They are the unfurled tops of lady ferns. Once unfurled the green fern is not eaten though
3. Distribute Field Guides for students to confirm the differences between goose tongue and arrow grass. Show students how to use field guide. [Note: Back in the classroom discuss how students learned best – with a live guide or with the written field guide or both.]
4. Demonstrate how to harvest edibles without unnecessary damage to plants and without 'wiping out' an entire patch.
5. Divide students into small groups and distribute paper sack for collecting edibles.
6. Designate a photographer in each group and distribute cameras to them. Ask them to photograph all edible plants located in place and then once they are harvested.
7. Allow students time to collect approximately 6-8 cups of edible beach plants.
8. Have students show their harvested plants and review plant names in both English and Sugt'stun. Ask students which plants were easiest to find.
9. Return to classroom. If the salad is not to be prepared until next day store greens in cool place.

Class II – Prepare Spring Beach Salad

1. Distribute large pieces of paper and markers to each student group.
2. Have students display a sample of each of their harvested plants on the paper and label them with in English and Sugt'stun. How many different kinds of plants were collected?
3. Have groups clean and process their plants and place in salad bowl
4. *Optional:* Have students make salad dressing using paper bowls and plastic forks.
5. Dress salad and serve in paper bowls with plastic forks.
6. Model respectful comments for students to use when tasting a new food such as delicious, really good, I like it, etc... If students don't like the food, they could say, "It's good to know what this tastes like."
7. Discuss whether it was easier to learn about the edible plants from the Elder/Recognized Expert or from the field guides. Remind students that

traditionally people learned how and when and where to harvest edible plants from an Elder or knowledgeable relative out in the field.

Edible Plant Journal – Have students press samples of (or sketch) their edible plants. Label each in English and in Sugt’sun. On the same page describe where and when it was harvested and what it tasted like. Edit and save copies of field trip photos in a designated computer file for use in a final unit display.

Optional: Print plant images in student journals.

Materials:

- Leaves, seed heads, flowers, herbs (try not to prejudge—dill weed leaves make great prints)
- Stamp pads (white, black, and colors)
- Waxed paper and white tissue paper, cut into small squares (a little larger than you want your prints to be)
- Cardstock and mat board in colors of choice
- A hard surface (such as a table) protected with a drop cloth
- Damp paper towels or baby wipes for cleaning your hands
- Peel and stick magnets (optional)

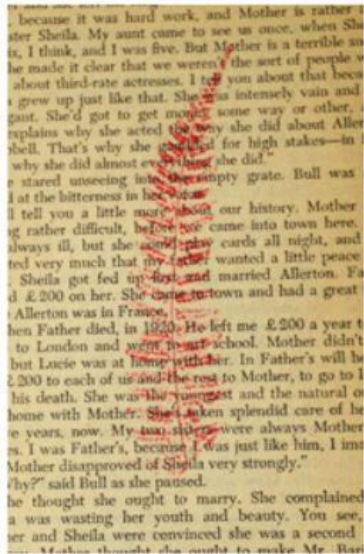


Materials for easy printmaking.

Directions:

1. Select a piece of plant material to print. Consider using small flowers, seed heads that can be somewhat flattened, and parts of leaves (such as one piece of a fern frond).
2. Place the piece of plant material flat on the stamp pad. Usually, it's best to place it face up as the bottom of the leaf will have more grooves and veins, but you can experiment. Cover with a piece of waxed paper.
3. Press down onto the plant material with your fingers, making sure to cover it entirely with ink. The waxed paper will protect your fingers. Note: if you're printing something with bulk like a seed head, be sure to press down on all the outer edges of the material to get a good outline for the print.

4. Remove the waxed paper and discard, carefully lift the plant off the pad, and position the plant on your cardstock or paper.



because it was hard work, and Mother is rather
sister Sheila. My aunt came to see us once, when Sha
ic, I think, and I was five. But Mother is a terrible so
he made it clear that we weren't the sort of people
about third-rate actresses. I tell you about that beca
grew up just like that. She was intensely vain and
gant. She'd got to get money some way or other.
explains why she acted the way she did about All
shell. That's why she was paid for high stakes—in
why she did almost everything she did."
e stared unseeing into the empty grate. Bull was
I at the bitterness in her voice.
I tell you a little more about our history. Mother
ig rather difficult, before we came into town here,
always ill, but she used to play cards all night, and
ted very much that my father wanted a little peace
Sheila got fed up first, and married Allerton. Fa
d £200 on her. She came to town and had a great
Allerton was in France.
hen Father died, in 1930. He left me £200 a year t
to London and went to my school. Mother didn't
but Lucie was at home with her. In Father's will he
£200 to each of us and the rest to Mother, to go to
his death. She was the youngest and the natural o
home with Mother. She's taken splendid care of h
e years, now. My two sisters were always Mother
s. I was Father's, because I was just like him, I ima
Mother disapproved of Sheila very strongly."
"Why?" said Bull as she paused.
he thought she ought to marry. She complained
a was wasting her youth and beauty. You see,
er and Sheila were convinced she was a second
Mother thought she ought to make Mr. Bas

Fern leaf printed on book paper.

on. To turn the print into a magnet, just peel and stick a small magnet on the back of a small print on mat board.

5. Cover the plant with a piece of tissue paper and gently press your fingers down onto the plant to make your print. Again, make sure to press out to the very edges of the plant to get a good impression. Note: You could also use a small brayer for this process, but be gentle, especially if the plant material isn't perfectly flat.

6. Remove the tissue paper and discard, then carefully lift off the plant to reveal your print. Wipe and ink off your hands before going on to the next print.

You can continue to print on the same substrate for a grouped effect or isolate the prints. Cut your paper to size before you print or make the prints first and cut as you wish.

Try printing on found paper like book pages (a vintage botanical encyclopedia would be perfect) or purchase plain notecards to print

http://www.clothpaperscissors.com/?a=cpe130717&mid=cpe130717_An_Easy_Printmaking_Project_for_All_Ages.162001&rid=162001.1803.99920 Retrieved 7.19.2013

Additional Activities: Pick Fireweed when it is 2-4 inches tall. Fireweed is ready to pick when the stem is violet colored and the leaves are dark purple. Bundle fireweed shoots and hang to dry for a few days. Use in salads or boil and top with a cream sauce like asparagus. Crisp edible leaves and shoots in dehydrator.

GATHERING PLANTS TO EAT: PROCESSING PLANTS 3-6 (4)

Grade Level: 3-6

Overview: “Plants remain an important subsistence food in Alutiit communities. Although they are taken in smaller quantities than fish or sea mammals, Alutiit families look forward to the first green vegetables of spring and to the sweet juicy berries that ripen in summer. Plants are also used as seasoning . . . To extend the availability of plant foods, Alutiit once stored harvested plants in seal oil in seal stomach containers. They kept others in grass-lined pits or hung them from household rafters to dry.” (Alutiitq Museum, Plants in Alutiitq Society: Plants as Food).

Standards:

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<p>A4: Practice traditional responsibilities to the surrounding environment.</p> <p>C1: Perform subsistence activities in ways that are appropriate to local traditions.</p>	<p>Geography B1: Know that places have distinctive geographic characteristics.</p> <p>Geography E1: Understand how resources have been developed and used.</p> <p>History B1b: Human communities and their relationship with climate, subsistence bases resources, geography, and technology.</p>	<p>SS3: Students should be able to gather plants, berries, and other edible foods.</p> <p>SS4: Students should have knowledge of preservation techniques for traditional foods/plants.</p> <p>G4: Students should be knowledgeable about natural vegetation.</p> <p>L1: Students should understand the value and importance of the Sugt'stun language and be actively involved in its preservation.</p>

Estimated Time: One field trip, two 45-minute classes [Note: This is a spring activity.]

Lesson Goal: To harvest edible plants and compare processing methods.

Lesson Objectives: Students will:

- Harvest fireweed and devil’s club shoots, spruce tips
- Understand how plant growth affects usefulness and traditional uses
- Process the plants various ways (cooking, crisping, drying, steeping)
- Prepare plant recipes
- Compare the results of differential processing on taste
- Describe taste differences and seasonal usefulness from different processing

Vocabulary Words: Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
fireweed		cillqaq
devil’s club		cukilanarpak
spruce tree		napaq

Materials/Resources Needed:

- Alutiitq Museum. (nd). Plants in Alutiitq society. Kodiak, Alaska: Alutiitq Museum.
- ANTHC. (2008). Traditional food guide: For Alaska Native cancer survivors. Anchorage, Ak: Alaska Native Tribal Health Consortium, Office of Alaska Native Health Research, Cancer Program (pp. 92 – 93: Excerpt below) (in kit)

- Schofield, J.J., (2012). Alaska's Wild Plants: A Guide to Alaska's Edible Harvest. Portland, Oregon: Alaska Northwest Books. (in kit)
- Schofield, J.J., (2011). Discovering Wild Plants. Portland, Oregon: Alaska Northwest Books. (in kit)

Class I

- Field Trip transportation arrangement
- Field Trip Permission slip – one per student
- Appropriate clothing for field trip
- Field Guides – one per small student group (in kit)
- Cameras (to photograph edibles) – one per small student group
- Paper bags to collect edibles
- Fireweed shoots (approximately ten per student)
- Devil's Club shoots (approximately four or more per student)
- Spruce tips (a handful per student)

Class II

- Fireweed Recipe: Traditional Food Guide, p.93
- Hot Plate for sautéing shoots
- Skillet to sauté greens
- *Optional*: Dehydrator (in kit)
- Olive oil to drizzle over crisped shoots, salt to season
- *Optional*: Tahini to dip greens for crisping
- String to bundle edibles for drying
- Paper plates (one per student)
- Acid-free paper for pressing fireweed shoots

Class III

- Pressed fireweed shoots from previous class
- Harvested spruce tips
- Hot water for making tea
- Glass jars to steep spruce root tea – one per small student group
- Honey to sweeten tea
- Cups for hot tea – one per student
- Student Plant Journals (students' individual journals used throughout unit)
- Tape or glue to adhere fireweed shoots to journal pages

Teacher Preparation:

- Review activity plan and practice Sugt'stun vocabulary.
- Plan and arrange field trip date, transportation, permission slips.
- Invite Elder/Recognized Expert to accompany class on field trip/
- Dried plants may be used in recipes several days later.
- Review ANTHC. (2008). Traditional Food Guide: For Alaska Native Cancer Survivors. Anchorage, AK: Alaska Native Tribal Health Consortium, Office of Alaska Native Health Research, Cancer Program) pp. 92 – 93
 “Fiber is used by the body to clean out the intestinal track. It cannot be digested. Fiber is found in vegetables and fruits including Alaska wild

greens and berries. Vitamin and minerals play a key role in all the body's function. Vitamin A is important for vision – especially night vision. Vitamin C is used by your body's immune system to fight infection. Vitamin A and C sources include Fiddlehead Fern, Wild Celery and Lovage to name a few. Iron helps build muscles and blood which carries oxygen through your bloodstream. Plant sources of iron include seaweed, dried fruits, whole grains, beans and leafy green vegetables. Calcium is the most abundant mineral in the body. 99% is in bones and teeth and 1% helps the heart beat currently, nerves function, blood to clot, and helps break down food and use the energy. The sources for calcium include whole fish, including the skin; wild bird eggs with embryos, green leafy vegetables, nuts and seeds”.

(2008, Traditional Food Guide)

Activities:

Class I – Field Trip

1. Go on field trip.
2. Invite Elder/Recognized Expert to identify the target plants and demonstrate how to harvest edibles without unnecessary damage to plants and without ‘wiping out’ an entire patch. Pick fireweed shoots two to four inches tall. The stems should be violet colored and the leaves are dark purple. Devil’s Club shoots are edible when they are still ‘pettable’ and do not sting. Only a section or two should be taken from each cluster. Spruce tips are the bright green ends of branches and are easily pinched off. Remind students that these edibles are only harvested in the spring when the plants are just beginning to develop. Later in the year they become inedible.
3. Divide students into small groups and distribute paper sacks for collecting edibles and field guides if desired. If other edible plants are identified they may also be harvested and prepared. See Schofield, J.J., [Discovering Wild Plants](#) for recipe ideas.
4. Designate a photographer in each group and distribute cameras to them. Ask them to photograph all edible plants located in place and then once they are harvested.
5. Allow students time to harvest edibles.
6. Have students confirm the identification of their harvested plants with the Elder/Recognized Expert and review plant names in both English and Sugt’s tun.
7. Ask students to imagine how the Suqpiat learned which plants were edible. (Observation, trail and error, taste testing...)
8. Encourage Elder/Recognized Expert to share any stories or memories about harvesting or preparing local edibles.
9. Wild edibles expert Janice Schofield tells us that toxicity depends on dosage or in other words if you just taste a micro amount you’re probably going to be ok. There are, however, several plants (notably water hemlock) which are quite poisonous. So, only taste test plants after conferring with an Elder or recognized expert.
10. Eating raw fireweed shoots is a common subsistence practice.
11. Have students taste and describe a raw fireweed shoot.
12. Return to classroom. Reserve spruce tips for Class III.
13. Edit and save copies of field trip photos in a designated computer file for use in a final unit display.

Class II – Process and Prepare Edibles

1. Have students display a sample of each of their harvested plants on the paper and label them with in English and Sugt'stun.
2. Have groups clean their plants.
3. Have each student press a fireweed shoot in plant press or between sheets of acid free paper in a heavy book. Stack books to help press flowers.
4. Set some fireweed and devil's club aside for boiling and sautéing and place remainder in salad bowl.
5. Boil fireweed stems and shoots for 2-5 minutes. Taste test.
6. Sauté fireweed and devil's club shoots in oil. Taste test.
7. *Optional:* Have students make salad dressing using paper bowls and plastic forks.
8. Dress salad and serve in paper bowls with plastic forks.
9. *Optional:* Use dehydrator to crisp individual shoots drizzled with olive oil and sprinkled with salt or dipped in tahini.

Class III - Edible Plant Journal

1. Divide students into small groups and distribute spruce tips, glass jars, and cups for tea.
2. Boil water. Have students place spruce tips in jars and pour hot water over them. Allow to steep 15-20 minutes.
3. Distribute tape or glue to each student group. Have students retrieve pressed fireweed shoots and attach them to a Plant Journal page.
4. Have students label fireweed shoot in English and Sugt'stun (*cillqaq*), describe where and when it was harvested, how it was prepared and what it tasted like.
5. Have students taste the spruce root tea. Sweeten as needed. Add a journal entry about the tea taste sensation.
6. Discuss the similarities and differences between gathering foods locally compared to buying them at the store. *Optional:* Have students turn this discussion into a Plant Journal entry.

GATHERING PLANTS TO EAT – SEASONAL GATHERING 3-6 (5)

Grade Level: 3-6

Overview: “The seasonal round diagram is an ethnographic technique used by researchers, but also is an intuitive way for people to represent how food, food-gathering activities, and eating habits, as well as other cultural traditions, change by season. When used in ethnographic research, these diagrams are frequently part of an in-depth conversation between the researcher and subject, and filled out together with words in the Native language along with English. The persistence of a food on a seasonal round could mean it is a staple or a consistent part of a person’s diet, while a delicacy only available at a certain time might be associated with a celebration like the many Ramp (wild leek) Festivals that occur each spring throughout the eastern United States. On the other hand, some seasonal foods, like fiddleheads, are available fresh for a short time but are commonly frozen or canned to extend the time in which they are eaten” (Diamond, Eating in season, See website below).

Standards:

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
D3: Interact with Elders in a loving and respectful way that demonstrates an appreciation of their role as culture bearers and educators.	<p>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.</p> <p>World Languages A4: Use two or more languages to learn new information in academic subject.</p>	<p>G4: Students should be knowledgeable about natural vegetation.</p> <p>G7: Students should be knowledgeable about environment and natural impacts of the area.</p> <p>L1: Students should understand the value and importance of the Sugt’stun language and be actively involved in its preservation</p>

Estimated Time: Three 60-minute classes

Lesson Goal: To create an edible plant seasonal round in English and Sugt’stun for the Chugach Region.

Lesson Objectives: Students will be able to:

- Identify the times of year when food plants are gathered in English and Sugt’stun.
- Construct a seasonal round diagram of the gathering time for 6 or more food plants in the Chugach Region.
- Describe how preservation techniques extend the season’s local foods.
- Represent the season extension effects of food preservation on the seasonal round.
- Interview a community member and record their shared knowledge.
- Summarize and share the interview and seasonal round information with the class.

Vocabulary Words:

Sugt’stun Dialects

English:	PWS:	Lower Cook Inlet:
season (time/seasons)		cimmiucia
harvest (picking them)		pisurluta
preservation (putting away)		llilarluki

Materials/Resources Needed:

- Russell, P. (2011). Alutiiq Plantlore. Fairbanks, AK: University of Alaska Fairbanks, Alaska Native Knowledge Network, Center for Cross-Cultural Studies. (in kit)
- White Board, Computer screen projector
- Sticky notes for brainstorm notes
- Season Round Blank - Handout – master in kit- three photocopies per student
- ‘Community Member Interview Guidelines’ - master in kit - one photocopy per student

Websites:

- http://nrs.fs.fed.us/sustaining_forests/conserves_enhance/special_products/maine_ntfp/local-resources/downloads/Seasonal%20round%20for%20northern%20Maine5_8.pdf Retrieved 6.27.2013; Diamond, A. (ND). Eating in season: The seasonal round in Northern Maine, a social studies and geography mini-unit for grades 5-8. Burlington, Vt: University of Vermont. Blank seasonal round for projection (See p.17).
- <http://memory.loc.gov/learn/lessons/oralhist/ohguide.html> Retrieved 6.27.2013; Guidelines for Oral History Interviews” from the Library of Congress Learning Page:

Teacher Preparation:

- Review activity plan and practice Sugt’sun vocabulary.
- Make copies of the seasonal round and interview guidelines.
- Decide whether final Seasonal Round will include traditional activities and foods only or be broader in scope.

Class I

Opening: Ask students to imagine not having any calendars or not knowing the date. Without this information, how would they know the seasons were changing just by looking around them? What changes in the landscape mark seasonal change? Record students’ answers on sticky notes (one idea per sticky note), and place them on the board. Students may name natural events such as snowmelt, the first buds, or which leaves change first. Ask them to think about changes in behaviors in the people around them, such as the appearance of Halloween decorations, Christmas lights, or seeing people riding bikes. Ask them to think about how the foods they eat change throughout the year. Are certain foods connected with certain events, months, seasons, or other times of the year? Star any notes of any wild or locally grown foods.

Introduce the concept of the seasonal round:

Project a large blank seasonal round diagram next to the brainstorm list (Page 17 of ‘Eating in Season’ website above.) Explain that this kind of calendar diagram shows changes like the ones the students brainstormed. Note that the circular diagram is split into twelve “pie slices” labeled by month. Show students that there is also an outer ring to record additional seasonal markers such as Fiddle Head Harvesting, Fireweed Harvesting, Salmonberry picking, etc., as well as times when certain items are preserved such as Fish Smoking, Jam Making... Under the general heading of Seasons/*Cimmiucia* label two columns on the board (*Harvest/pisurluta* – underlined in green - and *Preservation/Llilarluki* – underlined in blue) and place sticky notes of brainstorm ideas under the appropriate column. Distribute brainstorm sticky notes to student (each should have three to four notes, including one starred note) with which to begin labeling their seasonal rounds.

Activities:

1. Direct students to decide where on the seasonal round diagram their notes should go place them appropriately. Harvest/*pisurluta* times should be underlined in green and Preservation/*llilarluki* times should be underlined in blue.
2. Allow students time to fill out their own seasonal rounds based on their family's activities throughout the year.
3. Have students include foods that they harvest, grow, raise, or hunt; observations of the natural world; and activities like cutting wood, sledding, birthdays, and other celebrations or seasonal events/activities.
4. Remind students to include some events related to plants and the natural world, not just holidays, birthdays, sports seasons, etc.

Class II

Opening: Introduce the idea of Community Member Interviews. Explain that each student will get to interview a community member about the plants that he or she gathers or grows and eats. The interview subject can be a family member, neighbor, family friend, or other person.

Distribute the Community Member Interview Guidelines to each student and review them with the class. It may be helpful to role-play parts of these guidelines, or split students into groups to act out different sections.

Activities:

1. Divide students into pairs to develop interview questions. Each pair should come up with at least 10 questions and then practice asking them of each other. Note that the Interview Guidelines have some information about developing questions. Also note that students may suggest that their subjects fill in a seasonal round diagram as part of the interview. Students can also be directed to fill in the diagram as the interview subject speaks.
2. As students are working on questions, visit each group and ask them to assess what they've come up with. For example: Are the questions clear and easy to understand? Do the questions give you the answers you are looking for?
3. Sharing questions. You may want to have students share some of their interview questions as a class, and develop a master list of question options. Students could either ask all of the master list questions, or choose their own questions from the list.
4. Additional interview preparation. Make sure students have a blank seasonal round diagram to take with them to the interview. Set a due date for the interviews (one to two weeks out), and provide additional support as students work on this project outside of class. You may need to suggest interview subjects to students who have trouble finding people on their own.
5. Remind students to collect information about which months and seasons at least six local plants are harvested. If possible the plants and seasons should be recorded in both English and Sugt'stun. Additionally, students should ask about local plant preservation techniques and how long these plants may be stored for use.
6. Have harvest/*pisurluta* times should be underlined in green and preservation/*llilarluki* times should be underlined in blue.

Class III

1. Have student review their interview notes. What did the students learn? Did they get information about plants the subject gathers and when to gather them? Were there any interesting stories that the students want to share with your classmates?
2. Distribute a third seasonal round blank and have students combine their initial diagram with the round resulting from their interviews. Students may wish to include information discussed at the interview but didn't get a chance to write down. Remind students that their seasonal round should show how long local foods can be preserved as well as the seasons in which they are harvested.
3. (*Optional*: In their final Seasonal Round students may eliminate anything unrelated to local foods and events. Students may wish to add colors to clarify their presentation.)
4. Have students write up a short summary about their interview subject's use of plants throughout the year. Encourage students to use Sugt'stun vocabulary [*pisurluta* (harvest) and *llilarluki* (preservation)] as they discuss their seasonal rounds. This is also a good place for students to share interesting stories or other facts that make their subjects "come to life."
5. Discuss how preservation/*llilarluki* times extend the life of locally harvested foods.
6. (*Optional*: Have students present these stories to the class.)
7. Collect and display interview summaries with the seasonal rounds.

Community Member Interview Guidelines

Adapted from “Guidelines for Oral History Interviews” from the Library of Congress Learning Page: <http://memory.loc.gov/learn/lessons/oralhist/ohguide.html>

1. Find someone to interview.

Relatives and neighbors make good interview subjects. Or, they can help you find an interview subject. You could talk with someone who has gathered wild foods for many years, a farmer, an experienced gardener, or a naturalist. Other places to look for interview subjects are senior centers or retirement homes in your town. Ask your teacher for ideas if you have trouble thinking of someone to interview.

2. Contact your interview subject.

Once you’ve thought of a person to interview, contact them. Contact the person, in person if possible or by telephone, and explain your class project and that you’d like to interview them as part of it. Many people are honored to be asked to be interviewed, but some may be uncomfortable with this. If your potential subject does not want to be interviewed, thank them anyway and then try another person.

Once a person agrees to be interviewed, set a date, time, and place for the interview. Explain that interviews usually take 40 minutes to an hour. If you plan to record the interview, make sure this is OK with your subject. Also, digital cameras are great tools to photograph your subject, but make sure that this is OK as well.

3. Plan your questions

Before the interview, plan the questions you want to ask. Write questions that will require more than a Yes or No answer. Because you want to learn about plants and how and when your interview subject gathered them, you will want to ask questions about:

- **The kinds of plants they gather or gathered;**
- **The specific names of the plants;**
- **What they used the plants for (food, medicine, crafts, or other uses)**
- **What time of year they gathered the plants. Find this out for each plant as specifically as possible – get the month and even details like “the first week of March” or “the end of September”.**
- **Any memories or stories about gathering any of these plants.**

Write your questions out on a sheet of paper and bring it to the interview so you can look at it. When your list of questions is complete, role play your interview questions with a classmate or family member. Are the questions clear and easy to understand? Do the questions give you the answers you are looking for?

Conduct the Interview

4a. Interview Manners. Here are some pointers for good interview manners:

- Be on time.
- Be prepared. Have your questions written down and your notebook out.

- Be polite. Say *please* and *thank you* and address people formally (using Mr., Mrs., Ms., Miss, and so on).
- Provide time for the person to answer questions. Be patient when answers take a long time.
- Do not argue with or correct the subject. Oral histories are not always accurate. But they do provide important information about feelings and impressions.
- Some subjects may not want to answer some questions – like about the specific location to find valuable mushrooms. Respect their wishes and secrecy and don't push them to talk about topics they don't wish to discuss.
- End your interview by thanking your subject.
- After the interview, send a thank you letter to the subject.

5b. Getting Started

1. Introduce yourself. Give your name, age, the class and school you attend. Describe the project that you are working on.
2. Begin the interview by asking where and when the interview subject was born.
3. If your subject strays from the topic, try to refocus by asking one of your prepared questions.

5c. Ask Follow-up Questions

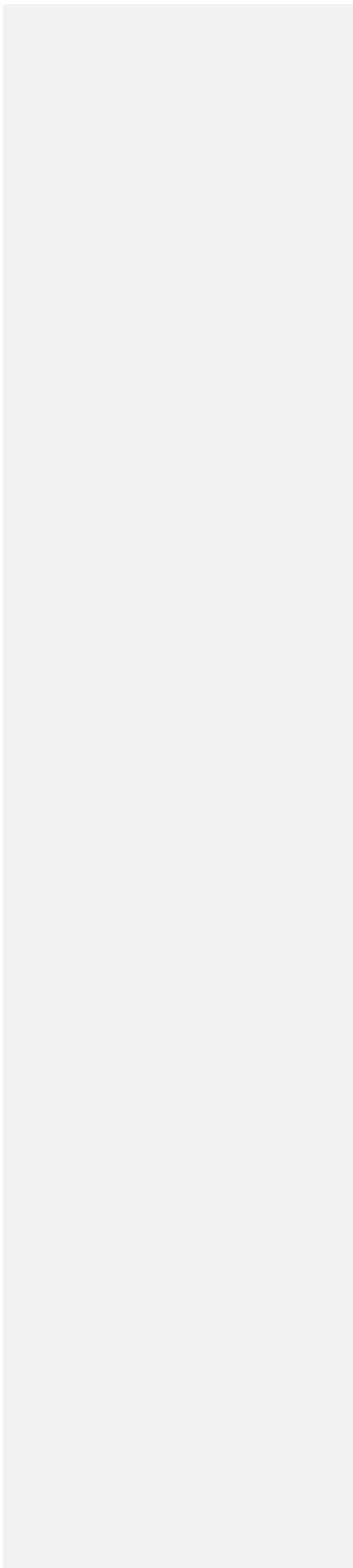
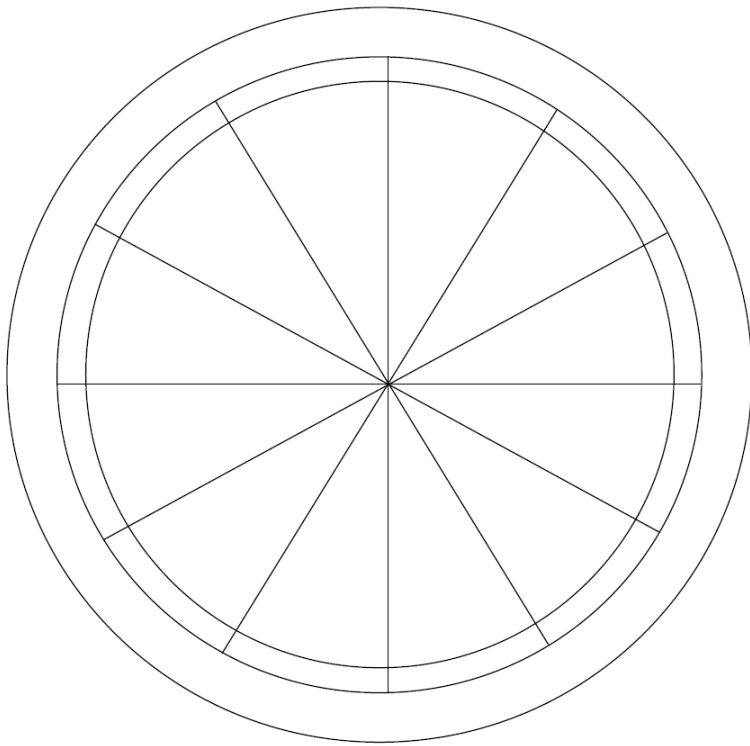
1. Listen carefully while your subject is talking. Often, what a person says may suggest a follow-up question that will produce interesting information. For example, if your subject mentions going out after floods to gather a certain plant, you might ask: Why did you go out after floods? Why were the floods important? How often did you get floods? What river or stream was flooding? What time of year did the floods happen?
2. Write down follow-up questions as your interview subject speaks. That way, you can ask the follow-up questions at a pause in the interview, without interrupting your interview subject's train of thought.

5d. Seasonal Round Diagram

Bring a blank copy of the seasonal round diagram and a sharpened pencil with an eraser. At some point in the interview, give it to your interview subject if they want to fill it in. This can be a good way to get your subject talking if he or she has trouble coming up with plants at first, or it can also be a good thing to do later in the interview. Ask them to explain any words they write that you do not understand or that you have trouble reading. Also ask the interview subject to write the word in Sugt'stun and English if they are a speaker of Sugt'stun.

Seasonal Round Diagram

Name: _____



GATHERING PLANTS TO EAT: EDIBLES FINALE 3-6 (6)

Grade Level: 3-6

Overview: Students review the materials they have learned and share their knowledge with others.

Standards:

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<p>A3: Acquire and pass on the traditions of their community through oral and written history</p> <p>E2: Understand the ecology and geography of the bioregion they inhabit.</p>	<p>English A7: Communicate ideas using varied forms of electronic technology</p> <p>English C5: When working on a collaborative project, work effectively with others as an active participant and as a responsive audience.</p> <p>Geography E1: Understand how resources have been developed and used.</p>	<p>G4: Students should be knowledgeable about natural vegetation.</p> <p>G7: Students should be knowledgeable about environment and natural impacts of the area.</p>

Estimated Time: One 50-minute class to prep presentations, one 30 minute presentation class

Lesson Goal: To highlight and share edible plant lessons

Lesson Objectives: Students will:

- Review their Plant Journals
- Write a script for assigned ‘edibles’ topic
- Select and edit photos for ‘edibles’ topic Presentation
- Share presentations with classmates
- *Optional:* Summarize the highlights of the unit lessons

Materials/Resources Needed:

- Schofield, J.J., (2011). Discovering Wild Plants. Portland, Oregon: Alaska Northwest Books. (in kit)
- Access to PowerPoint or similar software program
- Student groups Gathering Plants digital photo files
- Students Plant Journals

Teacher Preparation:

- Review activity plan.
- Consider setting a limit on the number of photos to be used in the PowerPoint presentations to help limit preparation time. More than one class may be needed.
- If an Elder or Recognized Expert has accompanied the class on field trips consider inviting him or her to the class presentations.
- *Optional:* In addition to small group presentations students could choose a recipe from Discovering Wild Plants, harvest and prepare the ingredients and share the dish with classmates.

Activities:

Class I: PowerPoint Preparation

1. Divide students into their small groups and assign each a PowerPoint presentation topic: Edibles Identification; Edibles Habitat and Harvest; Edibles Processing, Edibles Recipes. [Note Habitat and Harvest may be separate topics. If an Elder or Recognized Expert has accompanied the class on field trips a presentation on How Elders Teach Us may be considered.]
2. Explain that students are to prepare a PowerPoint presentation to pass along what they have learned about their assigned topic in this Gathering Plants unit. These presentations should make use of their Gathering Plant photo files, be two to three minutes long, and have a written script.
3. Photo files may be consolidated into a single file for all groups to access.
4. Allow students time to work on their presentations.
5. *Optional:* Have students complete their Plant Journals with a final entry on what students felt were the most important lessons of this unit.

[Allow students another prep period if needed.]

Class II: PowerPoint Presentations

Activities for Grades 7-9



Greens: ferns, nettles, goose tongues, wild parsley, willow leaves, and fireweed shoots.

GATHERING PLANTS TO EAT: ROOTS AND ALL 7-9(1)

Grade Level: 7-9

Overview: The subsistence lifestyle is based on an intimate knowledge of local resources and how to make full use of them. Generations of experience with local flora has shown certain plant roots to be edible (e.g., angelica, ferns, fireweed, nettles), to have medicinal value (e.g., cow parsnip, devil’s club, goosetongue, sour dock), and to serve as weaving material (spruce trees).

Standards:

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<p>A4: Practice traditional responsibilities to the surrounding environment.</p> <p>C1: Perform subsistence activities in ways that are appropriate to local traditions.</p> <p>D1: Acquire in-depth cultural knowledge through active participation and meaningful interaction with Elders.</p>	<p>Geography B1: Know that places have distinctive geographic characteristics.</p> <p>Geography E1: Understand how resources have been developed and used.</p> <p>History B1b: Human communities and their relationship with climate, subsistence bases resources, geography, and technology.</p>	<p>Subsistence 3: Students should be able to gather plants, berries, and other edible foods.</p> <p>Subsistence 4: Students should have knowledge of preservation techniques for traditional foods/plants.</p> <p>G4: Students should be knowledgeable about natural vegetation.</p> <p>L1: Students should understand the value and importance of the Sugt'stun language and be actively involved in its preservation.</p>

Estimated Time: Two field trips, three 50-minute classes [Note: This is an early spring activity.]

Lesson Goal: To harvest, process, and compare edible plant root uses.

Lesson Objectives: Students will:

- Harvest three edible plant root types
- Build gravel pit oven
- Process plant roots
- Cook roots in gravel pit oven
- Make use of other plant parts
- Prepare and compare plant tastes and uses
- Create an original video presentation on harvest and process experience

Vocabulary Words: Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
fern root (fern leaf bases)		kun'aq
fiddlehead fern		kun'aqutaq
fireweed		cillqaq
nettles		uuqaayanaaq

Materials/Resources Needed:

- Gray, B. (2011). The Boreal Herbal: Wild Food and Medicine Plants of the North. Whitehorse, Yukon, Canada: Aroma Borealis Press. (in kit)

- Russell, P. (2011). Alutiiq Plantlore: an Ethnobotany of the peoples of Nanwalek and Port Graham. Fairbanks, Alaska: Alaska Native Knowledge Network Center for Cross-Cultural Studies, University of Alaska Fairbanks. (in kit)
- Schofield, J.J., (2011). Discovering Wild Plants. Portland, Oregon: Alaska Northwest Books. (in kit)

Outdoors I – Gravel Pit Oven Preparation

- Gravel oven pit site
- Shovels to dig pit – two to three for class
- Dried grass or moss to line pit and layer over roots
- Gravel to cover baking roots
- Dry firewood supply for overnight fire
- Cameras for roving photographers (videos/photos for final presentation) – three or four
- Tarp to cover pit, moss, grasses, firewood

Field Trip II – Root Harvest

- Field Trip transportation arrangement
- Field Trip Permission slip – one per student
- Elder/Recognized Expert to confirm plant identification
- Appropriate clothing for field trip
- Cameras for roving photographers
- Protective gloves to handle nettles (Nettles should not be handled without gloves!)
- Small trash bags or cardboard boxes – at least one per root type
- Paper sacks or Ziploc bags to separately collect fireweed stems & leaves, nettle leaves
- Markers to label collection bags

Class III – Root Cooking

- Fern roots gathered during field trip
- Prepared gravel pit oven
- Elder/Recognized Expert to supervise root cooking
- Cameras for roving photographers
- Matches
- Recipes Handout (master in kit and in activity plan) – one photocopy per student

Class IV – Recipes

- Recipes Handout (master in kit and in activity plan) – extras for backup use
- Cameras for roving photographers
- Access to stove or hotplate, running water
- Skillet to sauté greens
- Colander
- Cutting boards
- Knives
- Stock pot
- Steamer basket
- Salad spinner
- Gloves for cooks handling nettles
- Olive oil for sautéing and dipping sauce
- Paper towels

- Assortment of paper cups, plates and plastic utensils to serve and taste recipes

Class V – Prezi Presentation Preparation

- Access to 'Roots and All' class files
- Access to 'Prezi' or similar video presentation software

Teacher Preparation:

- Invite and Elder/Recognized Expert to help consult/supervise the building of the gravel pit oven and cooking in it, and accompany class on field trip. [Note: If the Elder/Recognized Expert is familiar with angelica the class may choose to harvest its roots as well. Angelica (*uriisaaq*) roots are said to taste like parsnips.]
- Consult with Elder/Recognized Expert on selection of site to build the gravel pit oven and suitable field trip destination to harvest roots. Many tips and recipes may also be found in the books listed above.
- Set date, arrange for field trip transportation and permission slips.
- Arrange for 'fire tenders' to watch gravel pit oven fire
- Arrange for retrieval of cooked roots
- Students should select recipes and activities for the Cooking Class during the previous class so that they will be able to help supply extra ingredients and necessary cookware. Note that cooking class may require extra time.
- Designate 'Roots and All' computer file site to share class videos and photos for use in final presentation.
- Consider inviting any Elders or Recognized Experts who helped the class (and any interested guests) to the final video presentations.

Opening: Describe activity plan schedule. First students will prepare a gravel pit oven in which to cook the roots gathered on the field trip. The roots will be prepared and cooked overnight in the gravel pit oven. Students will prepare the roots to eat as well as make use of other plant parts. Finally, students will create a 'Prezi' video presentation to describe the entire experience.

Activities:

Outdoors I – Gravel Pit Oven Preparation

1. Review description of traditional gravel pit oven with students. [See [Alutiiq Plantlore](#) p.70]
2. Invite Elder/Recognized Expert to describe necessary pit size and amounts of moss, grasses, and fireweed.
3. Designate students to dig pit, gather moss and dried grasses, and gather firewood.
4. Distribute cameras to 'roving photographers' to record process.
5. Cover pit, mosses & grasses, and firewood with tarp to keep dry for later use.
6. Back in the classroom, have photographers edit, label, and save videos/photos for use in final presentation.

Field Trip II – Root Harvest

1. Go on field trip.
2. Invite Elder/Recognized Elder to identify target plants and demonstrate how to harvest them. If possible have him or her identify the plants in both English and Sugt'stun.

3. Remind students to harvest plants respectfully and without devastating an entire plant community. Note that traditionally there was no ownership of plant harvesting areas as there was of hunting areas. In traditional Sugpiaq society it was the women who harvested plants for food and medicine and the men who gathered and cut firewood and wood used for other purposes. – Russell, Alutiiq Plantlore, p.4
4. Distribute cameras to ‘roving photographers’ to record process.
5. Distribute collection sacks and markers to identify contents.
6. Harvest fireweed/*cillqaq* including roots. Fireweed shoots (two to three inches high) may be eaten raw, so a field taste test may be in order. Save some for use in salad or for sautéing with oil. If fireweed/*cillqaq* is sufficiently tall collect leaves for use in salad (best before flowering). “The summer stem of the fireweed can be split in half and drawn through the teeth to extract the edible marrow.” - Schofield, Discovering Wild Plants, p.156.
7. **Wear gloves to harvest nettles!** Every Nettle Stock recipe requires one cup of coarsely chopped nettle roots so have student groups limit their nettle root harvest accordingly. Nettle/*uuqaayanaaq* leaves are so useful that groups should harvest at least 4-6 cups – preferable plucked from the top of the plant to ensure future growth of the nettle/*uuqaayanaaq* plants. In early spring all of the nettle leaves are tender. Later in the summer only the tips are tender.
8. Harvest entire lady ferns - from fiddlehead/*kun’aqutaq* to fern leaf bases or roots/*kun’at*. More fiddleheads/*kun’aqutat* are needed than fern leaf bases or roots/*kun’at*.
9. Harvest a dozen or so entire fern plants for class use and 4-6 cups of fiddleheads/*kun’aqutat*.
10. Store fiddleheads/*kun’aqutat* separately from fern leaf bases/*kun’at* them in a cool place for use in Recipes Class.
11. Return to classroom and store gathered materials.
12. Have photographers edit, label, and save videos/photos for use in final presentation.

Class III – Root Cooking

1. Have students bring harvested roots and to gravel pit oven site.
2. Distribute cameras to ‘roving photographers’ to record process.
3. If an Elder/Recognized Elder is present invite him or her to describe how to cook using a gravel pit oven. Encourage him or her to share any stories about using a gravel pit oven.
4. Have students remove tarp and line pit with half of dried grasses and moss supply.
5. Separate fern roots/*kun’at* on top from rest of plant and place on top of grasses.
6. Cover fern roots/*kun’at* with other half of dried grasses and moss supply.
7. Layer gravel over entire pit.
8. Have students lay and set large fire atop gravel pit.
9. Allow fire to die down and continue cooking roots 12-24 hours. Make sure that fire is well tended.
10. Back in the classroom, have photographers edit, label, and save videos/photos for use in final presentation.
11. Divide students into small groups and pass around a single copy of the Recipe Handout, Have them circle two or more options to prepare. Make sure that every option is picked by at least one group.
12. Once the students have made their selections distribute the Recipes and Activities Handout so that they may assemble materials and ingredients accordingly for the following class.

[Retrieve roots when done cooking for use in Recipes Class.]

Class IV – Recipes

1. Distribute cameras to ‘roving photographers’ to record recipe preparation and tasting.
2. Have students divide into their small groups and set up recipe prep areas.
3. Encourage students to taste all the foods presented. As students taste recipe results they should be clear about how the food was prepared and note their reactions on their Recipe handouts.

Fern Root/kun’aq: Peel ‘skin’ or outer layer from each fern root/kun’aq. Traditionally eaten with seal oil, olive oil may also be used.

Fiddleheads/kun’aqutat: Remove brown flaky coating from fiddleheads/kun’aqutat either by rubbing briskly in a towel, repeatedly rinsing in a colander, or simply peeling by hand. Fiddleheads/kun’aqutat may be sautéed in oil or butter. Fireweed shoots may be added.

Fireweed/cillqaq: Fireweed leaves can be used in salads.

- Raw Fireweed/cillqaq roots are popular with Siberian Natives. While raw fireweed roots are not a traditional local food it is interesting to note how regional tastes affect plant usage. Rinse well with water for a class taste test.

Nettle/uqaayanaaq: Wear gloves when handling fresh nettle leaves! Nettle leaves must be steamed (lightly) or dried before eating to eliminate their sting.

- Steam four cups of nettle/uqaayanaaq leaves three to five minutes and top with Parmesan cheese or garlic lemon and olive oil. Serve immediately.

- Schofield, Discovering Wild Plants, p.171

- Nettle Chai: Combine 1 cup spring nettles, 4 cups hot water, 1 teaspoon cardamom, (optional ½ teaspoon ginger). Steep 20 minutes. Strain. Add sweetener as desired.

- Nettle roots may used for stock:

1 tablespoon olive oil	1 large onion, coarsely chopped
2 carrots, coarsely chopped	1 cup nettle roots, coarsely chopped
2 zucchini	1 garlic bulb (with skin, cut in half)
1 stalk celery	Thyme & Parsley sprigs
1 large tomato	1 bay leaf

1. Heat oil in medium stockpot over medium heat.
2. Add onion and cook until translucent (8-10 minutes)
3. Add carrots, nettle roots, zucchini, celery, tomato, & garlic and cook until tender (about 15 minutes)
4. Add 4 quarts of cold water, thyme and parsley sprigs, bay leaf.
5. Bring to a boil, reduce heat, and simmer until broth is well flavored (about 1 hour)
6. Strain stock in colander pressing vegetables to extract any juices.
7. Discard vegetables and let liquid cool to room temperature.
8. Transfer to airtight containers (Ziploc bags work).*

**Taste test results before storing. Consider using for Nettle Stock Soup at final presentation class.*

- Adapted from Jonath, L., Frankeny, F. (2007) Soup’s On p. 13

4. Have photographers edit, label, and save videos/photos for use in final presentation.
5. Enjoy!

Class V – Prezi Presentation Preparation

1. Divide students into small groups to create a three to five minute video presentation on their class experiences with ‘Roots and All’ OR a YouTube ‘How to Eat Locally’ video.
2. Decide if any ‘Roots and All’ food will be served at final presentations and prepare accordingly.

Class VI – Presentations

1. Share group presentations.
2. *Optional:* Serve Raw Fireweed Roots, Nettle Chai, or Nettle Stock Soup with fish.

GATHERING PLANTS TO EAT: ROOTS AND ALL – RECIPES HANDOUT 7-9(1)

Fern Root or Leaf Base/kun'aq: Peel 'skin' or outer layer from each fern root/kun'aq. Traditionally eaten with seal oil, olive oil may also be used.

Fiddleheads/kun'aqutat: Remove brown flaky coating from fiddleheads/kun'aqutat r by rubbing briskly in a towel, repeatedly rinsing in a colander, or simply peeling by hand. Fiddleheads/kun'aqutat & fireweed shoots may be sautéed in oil or butter.

Fireweed/cillqaq:

Fireweed leaves can be used in salads. Add the leaves to a salad and try with

Wild Herb Marinade: 2 tablespoons vinegar 1 teaspoon honey
 1 clove minced garlic ½ cup olive oil
 pinch salt pinch pepper
2 tablespoons chopped wild lovage, wild mustard, wild chives
- Schofield, J. "Wild Edibles Class" 7.7.20

Raw Fireweed/cillqaq roots are popular with Siberian Natives. While raw fireweed roots are not a traditional local food it is interesting to note how regional tastes affect plant usage. Rinse well with water for a class taste test.

Nettle/uqaayanaaq: Wear gloves when handling fresh nettles! Nettle leaves must be steamed (lightly) or dried before eating to eliminate their sting.

Steamed Nettles: Steam four cups of nettle/uqaayanaaq leaves three to five minutes and top with Parmesan cheese or garlic lemon and olive oil. Serve immediately.

- Schofield, Discovering Wild Plants, p.171

Nettle Chai: Combine 1 cup spring nettles, 4 cups hot water, 1 teaspoon cardamom, (optional ½ teaspoon ginger). Steep 20 minutes. Strain. Add sweetener as desired.

Nettle Root Stock:

1 tablespoon olive oil 1 large onion, coarsely chopped
2 carrots, coarsely chopped 1 cup nettle roots, coarsely chopped
2 zucchini 1 garlic bulb (with skin, cut in half)
1 stalk celery Thyme & Parsley sprigs
1 large tomato 1 bay leaf

Heat oil in medium stockpot over medium heat.

Add onion and cook until translucent (8-10 minutes)

Add carrots, nettle roots, zucchini, celery, tomato, & garlic and cook until tender (about 15 minutes)

Add 4 quarts of cold water, thyme and parsley sprigs, bay leaf.

Bring to a boil, reduce heat, and simmer until broth is well flavored (about 1 hour)

Strain stock in colander pressing vegetables to extract any juices.

Discard vegetables and let liquid cool to room temperature.

Transfer to airtight containers (Ziploc bags work). *

**Taste test results before storing. Consider using for Nettle Stock Soup at final presentation class.*

- Adapted from Jonath, L., Frankeny, F. (2007) Soup's On p. 13

GATHERING PLANTS TO EAT: HARVESTING SEAWEED 7-9(2)

Grade Level: 7-9

Overview: Laver, sea lettuce, and bladderwrack are important food items in Sugpiaq culture. Seaweed is usually gathered in the spring and into the summer, when the algae provides young and tender fronds.

Standards:

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
A3: Incorporate the contemporary adaptations along with the traditional aspects of the local culture. E1: Draw parallels between knowledge derived from oral tradition and that derived from books.	Geography E1: Understand how resources have been developed and used.	G4: Students should be knowledgeable about natural vegetation. L1: Students should understand the value and importance of the Sugt'stun language and be actively involved in its preservation.

Estimated Time: One field trip, two 50-minute classes, one 40-50 minute presentation class

Lesson Goal: Harvest, preserve, and prepare edible seaweed; research its uses.

Lesson Objectives: Students will:

- Gather and dry seaweed
- Observe Elder/Recognized Expert identify and harvest edible seaweeds
- Record harvest details.
- Research the habitat, life cycles, traditional and modern uses of edible seaweeds
- Select and prepare a recipe using seaweed as an ingredient
- Produce oral presentation on particular seaweed with original photos and prepared dish

Vocabulary Words: Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
laver		caqallqaq
sea lettuce		kauustaaruaq
bladderwrack		ellquaq
seashore		quunarliq

Materials/Resources Needed:

Kit Library

- Garza, D. (2005). Common Edible Seaweeds in the Gulf of Alaska. Fairbanks, Alaska: Alaska Sea Grant College Program, University of Alaska Fairbanks.
- Garza, D. (2007). Surviving on the Foods and Water from Alaska's Southern Shores. Fairbanks, Alaska: Alaska Sea Grant College Program, University of Alaska Fairbanks.
- Gray, B. (2011). The Boreal Herbal: Wild Food and Medicine Plants of the North. Whitehorse, Yukon, Canada: Aroma Borealis Press.
- Lindeberg, M.R. & Lindstrom, S.C. (2010) Field Guide to Seaweeds of Alaska. Fairbanks, Alaska: Alaska Sea Grant College Program, University of Alaska Fairbanks.

- Russell, P. (2011). Alutiiq Plantlore: an Ethnobotany of the peoples of Nanwalek and Port Graham. Fairbanks, Alaska: Alaska Native Knowledge Network Center for Cross-Cultural Studies, University of Alaska Fairbanks.
- Schofield, J.J., (2012). Alaska's Wild plants: A Guide to Alaska's Edible Harvest. Portland, Oregon: Alaska Northwest Books.
- Schofield, J.J., (2011). Discovering Wild Plants. Portland, Oregon: Alaska Northwest Books.

Class I Field Trip

- Field Trip transportation arrangement
- Field Trip Permission slip – one per student
- Appropriate clothing for field trip
- *Optional*: Local tide books – one per small student group
- Cameras – one per small student group
- Ziploc bags to collect seaweeds – several per small student group
- Markers to label collection bags
- *Optional*: Gloves
- Small notebook and writing implement – one set per student
- Small cutting tools to harvest seaweeds – one per student
- Gathering containers (box, back pack, basket...) – one per small student group
- *Optional*: Firewood, matches, and pan to roast seaweed
- *Optional*: Dehydrator to make 'seaweed chips'
- Drying rack (to dry seaweeds in class)
- Oven, baking sheets (to oven dry seaweeds)
- Airtight containers (Ziploc bags, Tupperware....) to store dried seaweeds

Class II

- Computer access – one per small student group
- Color printer and photo paper
- Poster Boards – one per small student group
- Markers and glue for seaweed posters

Teacher Preparation:

- Review activity plan and practice Sugt'stun vocabulary.
- Determine field trip location.
- Arrange date, transportation and permission slips for field trip. [Note: Field trip should be scheduled one hour before low tide. Consult local tide tables for times.]
- Invite Elder/Recognized Expert to accompany class on field trip. If possible review with Elder/Recognized Expert Sugt'stun seaweed names and ask that they use and explain the names while harvesting.
- Note: Drying the seaweed will require extra time outside of the field trip. Dried seaweed will be used for student recipes.
- Invite Elder/Recognized Expert to listen to student presentations and share student recipes.
- Designate a class computer file for students to store class photos.

Opening: Provide overview of activity plan: Intertidal Field Trip, Seaweed Drying, Recipe Making and Sharing, Seaweed Presentations.

Optional: Share the following excerpt:

Using Marine Algae: ...Although people gather marine algae throughout the year, spring is the most important season for this pursuit. Many marine algae are young and tender at this time, while most land plants are not accessible for food early in the spring.....

...People prepare marine algae to eat by frying, roasting over a fire, dipping in hot water, and rarely by boiling. They commonly dip seaweed in oil when eating it. Dried or partly dried plants are frequently used as seasoning in a variety of dishes. Drying is also a means of preserving seaweed. Today people partially dry laver and then freeze it in commercial freezers to preserve it for later use.

- Russell, P., Alutiiq Plantlore, pp.85-86

Activities:

Class I – Field trip

1. Go on field trip.
2. Invite Elder/Recognized Expert to identify seaweed types in both English and Sugt'stun. [laver/*caqallqaq*), sea lettuce/*kauustaaruaq*, bladderwrack/*ellquaq*] Have students take notes.
3. Demonstrate how to respectfully gather seaweeds without overharvesting. Overharvesting will deprive small intertidal animals of shelter.
4. Remind students of importance of timing harvest one hour prior to low tide.
Optional: Distribute tide books to small student groups and have them determine next time to harvest seaweed.
5. Divide students in to small groups.
6. Distribute cameras to 'roving photographers' (one in each group) to record intertidal habitat, seaweed, and gathering.
7. Distribute Ziploc bags and markers to label them for small student groups to collect laver/*caqallqaq*, sea lettuce/*kauustaaruaq* and, bladderwrack/*ellquaq* seaweeds.
8. Have students rinse off any sand or tiny rocks in the ocean water and place seaweed in separate bags.
9. Encourage students to taste test the seaweed while gathering and record their reactions in their notebooks. Nancy Yeaton of Port Graham has observed that seaweeds are a delight to gather, particularly the laver, which is often snacked on while rolling the seaweed into a ball for the winter larder.
10. Invite Elder/Recognized Expert to share any stories of gathering seaweed and their uses. Have students take notes.
11. Review seaweed collected and their English and Sugt'stun names. Share taste test reactions.
12. If the sun is out, find a place to air dry the laver/*caqallqaq* and sea lettuce/*kauustaaruaq* for a couple of days. If not, hang in classroom to dry, or bake in the oven at 175° for ten minutes. Bladderwrack/*ellquaq* should be dried during hot sunny days outside or baked in the oven at 250° for about an hour.
13. *Optional:* Make a fire and use a pan to roast cleaned seaweed at the beach.
14. *Optional:* Set aside some seaweed to fry in oil back at the school.
15. *Optional:* Set aside some seaweed to dry in dehydrator for 'seaweed chips.'
16. *Optional:* Set aside some seaweed to dry 'in a ball' as described by Nancy Yeaton above and compare the results with drying by hanging.

17. Return to class. If seaweed is not already been hung to dry do so in class room OR oven dry.
18. Edit, label, and save photos to class computer file.

[Once dry, place dried seaweed in airtight containers, labeled appropriately in English and Sugt'stun, and the date of harvest.]

Classes II & III - Research

1. Assign each small student group a seaweed type to research with kit library materials or online.
2. Students are to prepare a eight to ten minute presentation on the seaweed that includes the following: English, Sugt'stun, and scientific name, its habitat and life cycle, how to harvest and process it, its uses – both traditional and modern, its nutritional value, a poster of related photos (labeled appropriately), and a dish that uses the seaweed as an ingredient to share with the class. All presentations should also acknowledge the input of Elders and Recognized Experts.
3. Allow students time to research and prepare their presentations.
4. Students may, of course, use the dried seaweeds harvested on the field trip to prepare their recipes.

Class IV – Presentations

1. Allow students time to set up presentations and seaweed dishes.
2. Present!
3. If Elder/Recognized Expert is present have students publicly thank him or her for sharing their knowledge.

Activities for Grades 10-12



Goose Tongues

GATHERING PLANTS TO EAT: LEARNING EDIBLE PLANTS 10-12(1)

Grade Level: 10-12

Overview: Among Native Alaskans learning traditionally took place through careful observation with an eye for practical application while the Western knowledge system has emphasized more experiment based learning with an eye for deducing larger abstract rules that don't necessarily have an immediate practical use. Here students use the two knowledge systems to learn about local edible plants and combine the results in original field cards.

Standards:

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<p>A3: Acquire and pass on the traditions of their community through oral and written history.</p> <p>D4: Gather oral and written history information from the local community and provide an appropriate interpretation of its cultural meaning and significance.</p> <p>E1: Draw parallels between knowledge derived from oral tradition and that derived from books.</p>	<p>History B1b: Human communities and their relationship with climate, subsistence bases resources, geography, and technology.</p> <p>Science F2: Develop an understanding that some individuals, cultures, and societies use other beliefs and methods in addition to scientific methods to describe and understand the world.</p> <p>Science F3: Develop an understanding of the importance of recording and validating cultural knowledge.</p>	<p>C1: Students should know the Sugpiaq/Alutiiq traditional ways of their community; subsistence</p> <p>SS3: Students should be able to gather plants, berries, and other edible foods</p> <p>SS4: Students should have knowledge of preservation techniques for traditional foods/plants.</p> <p>GS4: Students should be knowledgeable about natural vegetation.</p>

Estimated Time: One field trip, four 50 minute classes

Lesson Goal: Actively compare traditional and Western learning styles through investigation of edible plants.

Lesson Objectives: Students will:

- Interview an Elder about edible plant knowledge
- Observe how Elder/Recognized Expert identifies edible plants
- Forage for edible plants under direction of Elder/Recognized Expert
- Research edible plants through field guides and other written resources
- Compare and contrast the information learned with each knowledge system
- Maintain a class blog to discuss edibles learning processes
- Create original field cards

Materials/Resources Needed:

Kit Library

- Gray, B. (2011). The Boreal Herbal: Wild Food and Medicine Plants of the North. Whitehorse, Yukon, Canada: Aroma Borealis Press.
- Russell, P. (2011). Alutiiq Plantlore; an Ethnobotany of the peoples of Nanwalek and Port Graham. Fairbanks, Alaska: Alaska Native Knowledge Network Center for Cross-Cultural Studies, University of Alaska Fairbanks.
- Schofield, J.J., (2012). Alaska's Wild plants: A Guide to Alaska's Edible Harvest. Portland, Oregon: Alaska Northwest Books.

- Schofield, J.J., (2011). Discovering Wild Plants. Portland, Oregon: Alaska Northwest Books.

Class I

- Russell, P. (2011). Alutiiq Plantlore pp.4-7 – one photocopy per student

Class II

- Field Trip transportation arrangement
- Field Trip Permission slip – one per student
- Elder/Recognized Expert to accompany beach field trip
- Appropriate clothing for field trip
- Cameras (to photograph edibles) – one per small student group
- Paper bags to collect edibles
- Markers to label paper bags

Class III

- Access to internet for online research

Class IV

- Access to monitor projection screen to display Knowledge Systems Qualities diagram
- Knowledge Systems Qualities Handout (master in kit) one photocopy per student
- Venn Diagram Handout (master in kit) one photocopy per student

Class V

- Access to Edibles Class Blog site and color printer
- White cardstock for field cards – approximately four for each student pair
- Laminator or clear Contact paper to cover field cards
- Scissors to trim cards
- *Optional:* Kit field cards to compare with student productions

Website:

- http://www.ankn.uaf.edu/curriculum/Articles/BarnhardtKawagley/Indigenous_Knowledge.html Retrieved 7.8.2013. Description of Indigenous Knowledge Systems, Venn Diagram.

Teacher Preparation:

- Review activity plan. Note: Sugt'stun and scientific names for plants are found in Alutiiq Plantlore.
- Review website above for description of Indigenous Knowledge Systems and Venn diagram comparing Western and indigenous knowledge systems relate to one another.
- Photocopy Alutiiq Plantlore pp. 4-7 handout for Class I.
- Locate community members willing to be interviewed about their knowledge of edible plants as back up sources for student homework assignment in Class I.
- Invite an Elder/Recognized Expert to accompany class on Class II field trip and discuss interest in sharing traditional knowledge of edible plants and their Sugt'stun names. As much as possible encourage expert to demonstrate how to identify and harvest plants and talk about how she or he learned about these plants.
- Consult with Elder/Recognized Expert on where to go on Class II field trip to forage.
- Designate field trip location, arrange transportation, and permission forms.
- Establish web location for Edibles Class Blog entries.

Opening: Ask students what kind of learners they are. Do they learn best independently or collaboratively? By hearing information or reading or seeing the data? By active experimentation or observation? Around the world people traditionally learned through careful observation with an eye for practical application: watching an Elder prepare a hide, learning how to interpret weather patterns to plan hunting expeditions, and the like. The Western method with its reliance on written materials emphasizes more experiment based learning with an eye for deducing larger abstract rules that don't necessarily have an immediate practical use. Think of the ancient Greek mathematician Pythagoras relentlessly measuring triangles to develop his theorem ($a^2 + b^2 = c^2$) without any practical use for the result. Broadly speaking Westerners promote knowledge for the sake of knowledge while traditional systems promote knowledge for the sake of the community's health and well-being.

In this unit students will compare the two learning methodologies and learn how they complement one another.

Activities:

Class I – Elder Interviews

1. Discuss traditional learning methods. [*careful and respectful observation, limited questions, and then independently try to perform task*]
2. Ask students what tasks they learned to perform this way.
3. Read aloud the *Foreword* from Aluttiq Plantlore p xi. Ask students what they feel about the validity of such information.
4. Distribute Aluttiq Plantlore pp. 4-7 as handout to students and have them read about traditional Sugpiaq plantlore.
5. Have students work in pairs to prepare 10-12 Elder Interview questions about local plants.
6. *Homework assignment:* Interview an Elder about how he or she learned subsistence activities, especially how to identify, harvest, and prepare edible plants. Summarize results in a short Edibles Class Blog entry.

Class II – Field trip

1. Go on field trip.
2. Invite Elder/Recognized Expert to identify several edible plants for students. If possible have him/her teach students the plant names in both English and Sugt'stun.
3. Demonstrate how to harvest edibles respectfully without unnecessary damage to plants and without 'wiping out' an entire patch.
4. Divide students into small groups and distribute paper sacks to collect samples of edibles.
5. Designate a photographer in each group and distribute cameras to them. Ask them to photograph all edible plants located in place and then once they are harvested.
6. Have students show their harvested plants and review plant names in both English and Sugt'stun and mark the collection sacks accordingly.
7. Invite Elder/Recognized expert to talk about how she or he uses these plants and what processing methods she or he prefers.
8. If possible ask Elder/Recognized Expert how to smell and taste test edibles and have students do likewise. (Arrow grass, for example, has a toxic base (cyanide) and yet the tips of its leaves taste like cilantro.)

9. Return to classroom. Retain labeled sacks for reference use in Class V Field Cards.
10. Edit, save, and label photos in Edibles Class Blog file.

Class III – Research

1. Distribute field guides to small student groups and have them confirm their plants' identifications in English, Sugt'stun, and its scientific name.
2. Explain that students will be creating their own edible plants flashcards and will need to research further information to complete the cards.
3. Allow students time to research two to three edible plants using the kit library and internet resources. [Note: Students should retain notes for Class V – Field Cards.]
4. *Optional:* Have students compare and contrast how well they learn from a person and from a written source in an Edibles Class blog entry.

Class IV – Venn Diagram

1. Display Knowledge Systems Venn diagram listed on website above on projection screen.
2. Review and discuss similarities and differences between knowledge systems.
3. Divide students into pairs and distribute Knowledge Systems Qualities and Venn Diagram handouts.
4. Have students use their notes to complete the diagram.
5. As a class discuss how well the students' diagrams tracked the website diagram and why this is so.
6. *Optional:* Have students compare and contrast the two diagrams in an Edibles Class Blog entry.

Class V – Original Field Cards

1. Explain to students that they will create original edible plants field cards for three plants that they have studied using only their notes, leftover paper sacks, & the Edibles Class Blog site.
2. Flashcards should contain English names as well as Sugt'stun and scientific names of edible, if possible and photos and/or drawings of the plants. Information about distinctive features, habitat, traditional uses, harvest time, processing methods, as well as any traditional or subsistence associations are desirable.
3. Divide students into pairs and allow time to create and format three flashcards.
4. Have students print and laminate cards (or cover with contact paper).
5. Trim cards.
6. Share and compare results. As a class discuss how cards integrate two knowledge systems.
7. *Optional:* Compare students' original field cards with those in the kit. How similar are they? Which knowledge systems are emphasized?

Edibles Knowledge Systems – Venn Diagram

Far left section: info learned only from Elder/Recognized Expert.

Far right section: info learned only from research.

Overlap section: info learned from both sources.

Does your diagram track the Knowledge Systems Qualities Handout diagram?

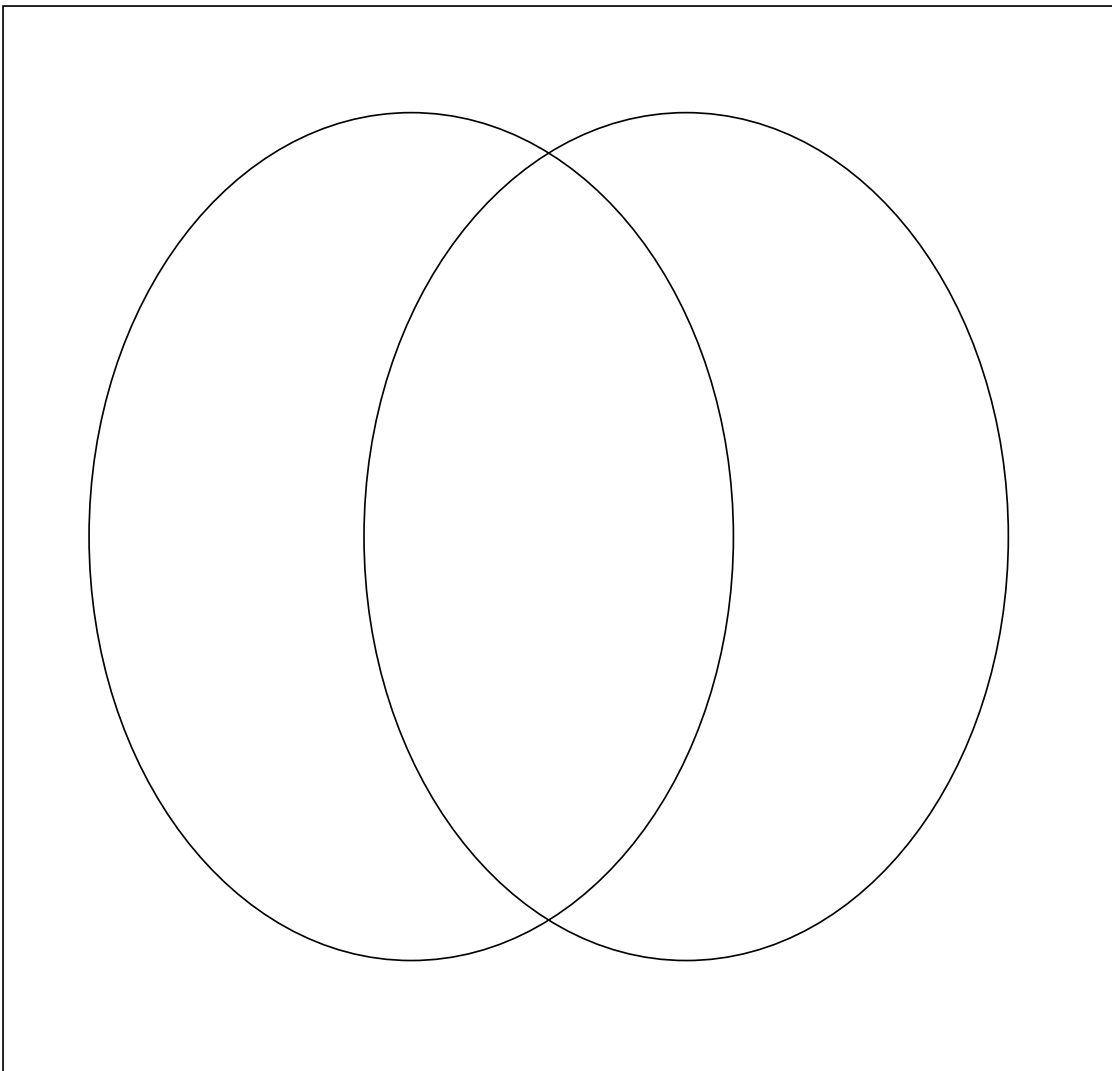
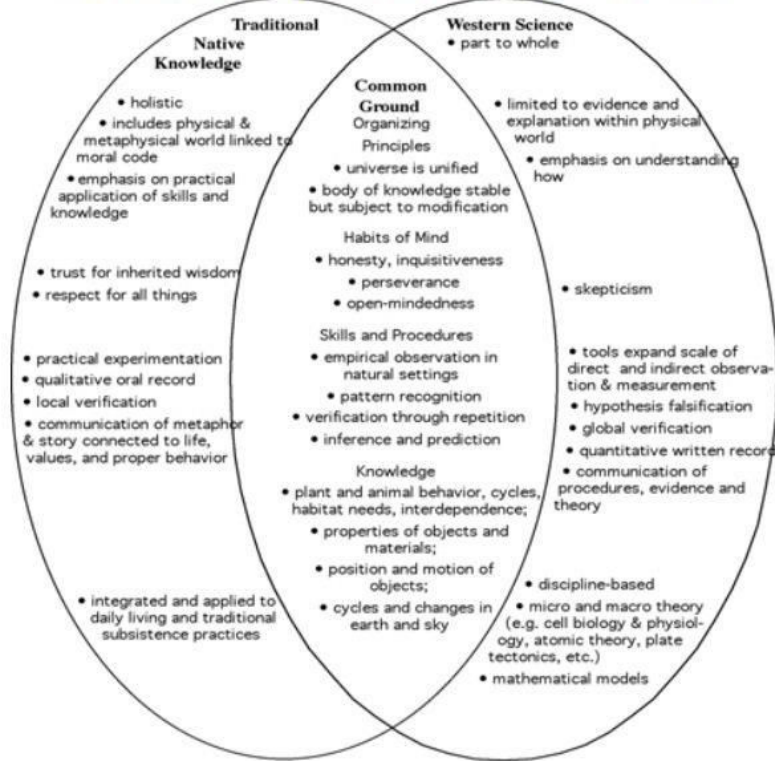


Diagram 1

Qualities Associated with Traditional Knowledge and Western Science



GATHERING PLANTS TO EAT: TASTE TESTS 10-12(2)

Grade Level: 10-12

Overview: Taste testing a plant before harvesting is a traditional form of identification. Here students learn to appreciate the subtle tastes of edible plants.

Standards:

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
<p>C1: Perform subsistence activities in ways that are appropriate to local cultural traditions.</p> <p>E5: Recognize how and why cultures change over time.</p>	<p>History B1b: Human communities and their relationship with climate, subsistence bases resources, geography, and technology.</p> <p>Science F2: Develop an understanding that some individuals, cultures, and societies use other beliefs and methods in addition to scientific methods to describe and understand the world.</p>	<p>C1: Students should know the Sugpiaq/Alutiiq traditional ways of their community; subsistence</p> <p>SS3: Students should be able to gather plants, berries, and other edible foods</p> <p>GS4: Students should be knowledgeable about natural vegetation.</p>

Estimated Time: One field trip, one 50-minute class [Note: This is a spring activity.]

Lesson Goal: To sharpen the sense of taste and understand taste testing as a traditional plant identification practice.

Lesson Objectives: Students will:

- Compare and describe unknown edible plant taste sensations
- Make spruce tip tea
- Process spruce branches' cambium layer for natural sweetener
- Compare and contrast the tea without sweeteners, with cambium, with honey
- *Optional:* Maintain a class blog to discuss edible plants taste range

Materials/Resources Needed:

Kit Library

- Gray, B. (2011). The Boreal Herbal: Wild Food and Medicine Plants of the North. Whitehorse, Yukon, Canada: Aroma Borealis Press.
- Russell, P. (2011). Alutiiq Plantlore; an Ethnobotany of the peoples of Nanwalek and Port Graham. Fairbanks, Alaska: Alaska Native Knowledge Network Center for Cross-Cultural Studies, University of Alaska Fairbanks.
- Schofield, J.J., (2012). Alaska's Wild plants: A Guide to Alaska's Edible Harvest. Portland, Oregon: Alaska Northwest Books.
- Schofield, J.J., (2011). Discovering Wild Plants. Portland, Oregon: Alaska Northwest Books.

Class I

- Field Trip transportation arrangement
- Field Trip Permission slip – one per student
- Appropriate clothing for field trip
- Small saws to cut spruce branches – one or two
- Bags to collect spruce tips – one per small student group

Class II

- Three small plates – one plate with ‘drying’ edible plant (minced)
one plate with ‘bitter’ edible plant (minced)
one plate with ‘sweet’ edible plant (minced)
- Glass jars to steep spruce tips – one or two per student pair
- Hot plate and container to boil water to steep tea and cook cambium
- Small paper cups to sample tea – three per student
- Small knives (pocket knives) to scrape cambium – one per student
- Newspaper or protective layer to place on desks under branches during scraping
- Small paper plates to hold cambium scrapings – one per student pair
- Honey to sweeten tea

Vocabulary Words:

Sugt’stun Dialects

English:	PWS:	Lower Cook Inlet:
spruce tree		napaq
tea	cáyuq	cáyuq
sweet	neqnihtuq	neqnihtut

Teacher Preparation:

- Review activity plan and practice Sugt’stun vocabulary.
- Determine field trip location to harvest spruce tips and branches.
- Arrange date, transportation and permission slips for field trip.
- Select three food items to use as examples of natural tastes (drying: salmonberry leaves, garlic clove; bitter: fireweed shoots; intensely bitter: wormwood; sweet: salmonberry shoots, beach peas, clover blossoms, dried berries...) and mince to make identification more difficult.

Opening: Traditionally people determined what was edible not just through trial and error but by learning to test its properties. When gathering plants its scent and taste were important considerations. As wild edibles expert Janice Schofield explains tasting small amounts of a plant isn’t harmful because toxicity depends on dosage. Your sense of taste can be developed with practice. On today’s field trip the class will harvest spruce tips and branches which students will taste test in the next class. In order to sharpen their sense of taste they should refrain from eating anything with added sugar until the next class.

Activities:

Class I – Field trip

1. Go on field trip.
2. Divide students into pairs and distribute bags for spruce tip collection.
3. Harvest a handful of spruce tips per student.
4. Demonstrate how to safely prune spruce branches without harming the tree.
5. Designate students to prune a small branch for each student
6. Teach students how to say spruce tree in Sugt’stun: *napaq*.
7. Describe how the Sugpiat peeled the bark from the spruce tree/*napaq* and scraped off the cambium – or inner layer – for food.

“One knew that the time was right for harvesting in the spring then the robin returned. The Sugpiaq name for robin, *keliim aanii*, translates as ‘mother of cambium scraping.’”
(Russell, P. *Alutiiq Plantlore* p.10)

8. Have students taste test cambium. Is it sweet/*neqnihtut*? It is considered a natural sweetener. “This thin layer may be eaten raw, boiled like noodles, or dried and ground into flour.” (Schofield, J. *Discovering Wild Plants*, p.72)
9. Return to classroom. Remind students that they are to eat nothing sweet/*neqnihtut* or with sugar in it (be mindful of sugars in canned foods) until the next class. Students should read the labels of any processed foods to determine what contains added sugars.

Class II – Taste Test

1. Plant foragers determine plant properties by observing animal uses, ‘signatures’ (similarities to other known plants), and taste. There are four main tastes: drying or astringent (drawing body tissues together, good for infections and seeping wounds); bitter or salivating (making the mouth water, ‘primes the pump’ for digestion); warming or pungent; and – the rarest natural taste of all – sweet/*neqnihtut* (good for immunity). – Schofield, J. ‘Wild Edibles Class’ 6.7.2013
2. Pass around three plates of minced edibles around classroom. Have students eat a small sample and then describe the taste. Which is sweet/*neqnihtut* ? [Note: It is important that the ‘sweet’ unknown is the last plate tasted to enhance the fact of its relative sweetness.]
3. Have students spread newspapers or other protective layers over desks and retrieve spruce branches.
4. Distribute pocket knives and small paper plates. Have students scrape off bark to reveal and harvest cambium or inner bark layer. Store cambium on small plates.
5. Have students pairs retrieve the harvested spruce tips and place a handful in a glass jar.
6. Boil water and pour into glass jars and cover to steep spruce tips. Spruce tip tea/*cáyuq* is high in vitamin C and is used as a medicine for sore throats and colds.
7. Distribute cups and have students pour three small cups of tea/*cáyuq* to compare tastes:
(a) tea/*cáyuq* (b) tea/*cáyuq* with cambium (c) tea/*cáyuq* with honey
8. As a class discuss taste test results. Speculate how pre-contact people would have reacted to the sugar brought by Russian traders. How might the introduction of pure sugar changed local diets? How does our constant exposure to sugars in store-bought processed foods affect our ability to appreciate sweet/*neqnihtut* tasting local plants? Did the students’ avoidance of sugar before the class affect their ability to taste the natural sweeteners?
9. *Optional*: Combine excess cambium scrapings; boil like noodles, and taste.
10. *Optional*: Have students describe their taste sensations in an Edibles Class Blog entry.

GATHERING PLANTS TO EAT: RECIPE INGREDIENTS 10-12(3)

Grade Level: 10-12

Overview: Students bypass the store and directly harvest wild edibles to make a local recipe.

Standards:

<i>AK Cultural:</i>	<i>AK Content:</i>	<i>CRCC:</i>
D3: Interact with Elders in a loving and respectful way that demonstrates an appreciation of their role as culture bearers and educators.	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.	G4: Students should be knowledgeable about natural vegetation. L1: Students should understand the value and importance of the Sugt'stun language and be actively involved in its preservation.

Estimated Time: One fieldtrip, one 50-minute class

Lesson Goal: To identify, harvest, prepare, and eat local edible plants for a chosen recipe.

Lesson Objectives: Students will:

- Select seasonally appropriate recipe whose ingredients are found in the designated habitat
- Identify local ingredient plants in both English and Sugt'stun
- Confirm edibles identification with an Elder/Recognized Elder and/or field guide
- Harvest and process sufficient edibles for recipe
- Prepare and eat chosen recipe

Vocabulary Words: Sugt'stun Dialects

English:	PWS:	Lower Cook Inlet:
lovage		pitruuskaa
laver		caqallqaq
sea lettuce		kaustaaruq
beach greens		quten kaptut'staruai
goose tongue		wegnaq

Materials/Resources Needed:

Kit Library

- Russell, P. (2011) Alutiiq Plantlore: an Ethnobotany of the Peoples of Nanwalek and Port Graham, Kenai Peninsula, Alaska. Fairbanks, Alaska: Alaska native Knowledge Network Center for Cross-Cultural Studies, University of Alaska Fairbanks. 'Processing' p.5
- Schofield, J.J., (2012). Alaska's Wild plants: A guide to Alaska's Edible Harvest. Portland, Oregon: Alaska Northwest Books.
- Schofield, J.J., (2011). Discovering Wild Plants. Portland, Oregon: Alaska Northwest Books.

Class I

- Field Cards (in kit) – one set per small student group

- Wild Edibles Recipes Handout (master in kit) – one per student
- Field Trip transportation arrangement
- Field Trip Permission slip – one per student
- Elder/Recognized Expert to accompany beach field trip
- Appropriate clothing for field trip
- Paper bags to collect beach edibles – one per student
- Markers to label bags – one or two per small student group
- Field Guides to Edible Plants – one per small student group

Class II

- Utensils and cookware needed to prepare recipes
- Access to stove
- Paper cups/bowls/plates, plastic forks, paper towels - one set per student
- *Optional:* Dehydrator (in kit)

Teacher Preparation:

- Review activity plan. Note that Sugt'stun plant names are found in [Alutiig Plantlore](#).
- Determine which habitat (intertidal zone, beach, forest, roadside) where will class will forage and limit student recipe choices accordingly.
- Plan and arrange field trip date, transportation, permission slips.
- *Optional:* Invite an Elder or Recognized Expert to accompany class on field trip to identify edibles.
- Arrange for use of stove for Class II.

Activities:

Class I – Field Trip

1. Divide students into small groups and distribute Wild Edibles Recipes handouts.
2. Distribute field card sets and allow students time to select recipe with ingredients found in field trip habitat. Students may consult field cards and guides to determine which in habitat ingredients are found.
3. Have students draw up 'shopping list' for recipes' wild edibles.
4. Go on field trip.
5. Invite Elder/Recognized Expert to help students identify several edible plants. If possible have him/her teach students the plant names in both English and Sugt'stun.
6. Demonstrate how to harvest edibles respectfully without unnecessary damage to plants and without 'wiping out' an entire patch.
7. Divide students into small groups and distribute paper sacks for collecting edibles.
8. Allow students time to harvest ingredients.
9. Have students show their harvested plants and review plant names in both English and Sugt'stun. Label bags with ingredient names.
10. Offer Field Guides for those students who wish to consult them.
11. Return to classroom. Store ingredients in cool place.
12. Homework: Have student groups draw up needed supplies list (cookware, utensils, seasonings, and additional ingredients) for following class and assign members items to bring.

Class II – Prepare Recipe

1. Set up recipe prep area
2. Have groups clean and process their plants and prepare recipe.
3. Have a class potluck!

GATHERING PLANTS TO EAT: ALASKA CULTURAL, ALASKA CONTENT & CHUGACH REGIONAL CULTURAL CONTENT STANDARDS

Kommentar [JP2]: May not be accurate with new activities – needs to be checked.

Alaska Culture Standards:

A3: Acquire and pass on the traditions of their community through oral and written history.

A4: Practice traditional responsibilities to the surrounding environment.

A5: Reflect through their own actions the critical role that the local heritage language plays in fostering a sense of who they are and how they understand the world around them.

C1: Perform subsistence activities in ways that are appropriate to local traditions.

D1: Acquire in-depth cultural knowledge through active participation and meaningful interactions with Elders.

D3: Interact with Elders in a loving and respectful way that demonstrates an appreciation of their role as culture bearers and educators.

E1: Draw parallels between knowledge derived from oral tradition and that derived from books.

E2: Understand the ecology and geography of the bioregion they inhabit.

E4: determine how ideas and concepts from one knowledge system relate to those derived from other knowledge systems.

Alaska Content Standards:

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.

Science C2: Develop an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms.

Science C3: Develop an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy.

Science F3: Develop an understanding of the importance of recording and validation cultural knowledge.

Geography A1: Use maps and globes to locate places and regions.

Geography A2: Make maps, globes and graphs.

Geography E1: Understand how resources have been developed and used.

Geography F3: Develop an understanding of the importance of recording and validation cultural knowledge.

History B1b: human communities and their relationship with climate, subsistence bases resources, geography, and technology.

World Languages A4: Use two or more languages to learn new information in academic subject.

Skills for Healthy Living A1: Understand how the human body is affected by behaviors related to eating habits, physical fitness, personal hygiene, harmful substances, safety, and environmental conditions.

Chugach Regional Cultural Content Standards:

Subsistence 3: Students should be able to gather plants, berries and other edible foods and be able to prepare and preserve gathered foods.

Subsistence 3b: Be able to prepare and preserve gathered foods.

Subsistence 4: Students should have knowledge of preservation techniques for traditional foods/plants.

Subsistence 5b: Seasonal/cycles for safe use/eating.

Subsistence 8: Students should know the appropriate seasons to fish, hunt, and gather.

Geography 3: Students should have knowledge of geographic landmarks, safe shelters, and resource maps in their area

Geography 3b: Students should have knowledge of geographic landmarks, safe shelters, and resource maps in their area: gathering areas.

Geography 4: students should be knowledgeable about natural vegetation.

Geography 7: Students should have knowledge about environmental and natural impacts of the area.

Language 1: Students should understand the value and importance of the Sugt'stun language and be actively involved in its preservation.

GATHERING PLANTS TO EAT: SUGT'STUN GLOSSARY K-12

Kommentar [JP3]: May not be accurate with new activities – needs to be checked.

K-2 (1)

English:	PWS:	Lower Cook Inlet:
Seed		Sim'inaq
Chart		ilasanemtnii

K-2 (2)

English:	PWS:	Lower Cook Inlet:
Seed		Sim'inaq
Root	Nukeq	nuket
Stem	puk	puk
Flower	nanahuat	Suitka'q
Fruit		qiulraq

K-2 (3)

English:	PWS:	Lower Cook Inlet:
Air (breathe)		Anerneq
Soil (mud)		Qikuq
Water		Meq
Light		tanqik

K-2 (4)

English:	PWS:	Lower Cook Inlet:
Blade		Pillum saqerii
Midrib		Nukraa
Vein		nukeq
Apex		akeqlllequllutek

K-2 (5)

English:	PWS:	Lower Cook Inlet:
Ask a question		Apqaa'iluni
Watch its actions		Teg'iluku

K-2 (6)

English:	PWS:	Lower Cook Inlet:
Wetland		Mecuuqaq nuna
Forest		Napat akulit
Grassland (meadow)		Marqaq
Ocean		Imakcak

K-2 (7)

English:	PWS:	Lower Cook Inlet:
Wild Chive or Onion		luuguaq
Fiddlehead Fern		Kun'aqutaq
Fireweed		Cillqaq
Wild Rice or Chocolate Lily		Arpaayak
Summer		Kiak
Spring		Iciwaq
Fall		Uksuaq
Winter		Uksuq

K-2 (8)

English:	PWS:	Lower Cook Inlet:
Plant		Naucestaaq
(They) Gather		Katurlluteng
Season		Lam Cimmiucia

K-2 (9)

English:	PWS:	Lower Cook Inlet:
Poison		Yaataq
Poisonous		Yaatuuaaq
Danger		Uluryanaq
Dangerous		Uluryanarqaq

3-6(1)

English:	PWS:	Lower Cook Inlet:
Embryo		Sumunat imiat
Seed coat		Siimunam qaalti
Stored food		Neget iliriat
Spores		Naut'stat siimunait
Fronde		Pitingluteng

3-6 (2)

English:	PWS:	Lower Cook Inlet:
Lady Fern root (below ground portion of plant)		Kun'aq
Wild Celery Seeds		Kangkam Simunai
Beach Lovage Leaves		Quten kaptut'staruai

3-6 (3)

English:	PWS:	Lower Cook Inlet:
Food		Neget
Water		Meq
Air		Aserqaq
Sunlight		Macaq
Space (need their space)		Elwitengnurugluki

3-6 (4)

English:	PWS:	Lower Cook Inlet:
Leaf shape		pusngacia
Leaf attachment		
Leaf margin		neruterpiat
Flower Inflorescence		liemumaqaq

3-6 (5)

English:	PWS:	Lower Cook Inlet:
Nutrients		Pitukat
Recipes		Pelayaret

3-6 (6)

English:	PWS:	Lower Cook Inlet:
Tundra		Napailnguq nuna
Forest		Napat akulit
Wetlands		Mecuugaq nuna
Ocean		imakcak

3-6 (7)

English:	PWS:	Lower Cook Inlet:
Season (time/seasons)		Cimmiucia
(they) Gather		katurlluteng
Harvest (picking them)		Pisurluta
Preservation (putting away)		LLilarluki

7-9 (1)

English:	PWS:	Lower Cook Inlet:
Cow parsnip		ugyuuteq
Fireweed		cillqaq
Nettles		uuqaayanaaq

7-9 (2)

English:	PWS:	Lower Cook Inlet:
Cow parsnip		ugyuuteq
Fireweed		cillqaq
Nettles		uuqaayanaaq

7-9 (3)

English:	PWS:	Lower Cook Inlet:
Kturqilua Naulranek Piturkanek		Gathering Plants that grow to eat

7-9 (4)

English:	PWS:	Lower Cook Inlet:
Laver		caqallqaq
Sea lettuce		kauustaaruaq
Bladderwrack		ellquaq
Seashore		Quunarliq

7-9 (5)

English:	PWS:	Lower Cook Inlet:
Laver		caqallqaq
Sea lettuce		kauustaaruaq
Bladderwrack		ellquaq

7-9 (6)

English:	PWS:	Lower Cook Inlet:
Blueberry		Atsaq
Currant		Quinseq
High bush cranberry		Qalakuqaq

7-9 (7)

English:	PWS:	Lower Cook Inlet:
Blueberry		atsaq
Currant		qunisiq
High bush cranberry		qalakuqaq

7-9 (8)

English:	PWS:	Lower Cook Inlet:
Seasons (the change of season)		Cimmiucia
(They) Gather		Katurlluki

7-9 (9)

English:	PWS:	Lower Cook Inlet:
Lovage		pitruuskaaq
Laver		caqallqaaq
Nettles		uuqaayanaq

10-12 (1)

English:	PWS:	Lower Cook Inlet:
Beach Greens		Quten kaptut'staruai
Lovage		Pitruuskaaq
Sour dock		Quunarliq

10-12(2)

English:	PWS:	Lower Cook Inlet:
wetlands		Mecuuqaq nuna
meadows		Pitruuskaaq
seashore		Quunarliq
disturbed soil		Laulleq qikuq
forest		Napat akulit

10-12 (3)

English:	PWS:	Lower Cook Inlet:
Calories		Naten ugtulraten
Protein		Kinernarkat
Carbohydrate		Artunarqat neaqet Kalagmataq
Fat		Uquq
Vitamin A		Kelpnceultet sungceultet
Vitamin C		(Same as above) Kelpnceultet sungceultet
Iron		Aulisun

10-12 (4)

English:	PWS:	Lower Cook Inlet:
Rose hip		Qeleepaq
High bush cranberry		Qalakuaq
Sitka spruce		Naparpiaq
Marsh marigold		Qaltuutesaaq
Bladderwrack		Ellquaq
Ribbon kelp		Liingtarg'qaq qanguq

10-12 (5)

English:	PWS:	Lower Cook Inlet:
Laver		caqallqaq
Bull kelp		qahnguq
Bladderwrack		ellquaq
Sea Lettuce		Kapuustaaruaq

10-12 (6)

English:	PWS:	Lower Cook Inlet:
Fiddlehead (entire plant)		Kun'agutaq
Fiddlehead root (below-ground portion of plant)		Kun'aq
Sourdock		quunarliq
Beachgreens		Qutem Kaptut'starua

10-12 (7)

English:	PWS:	Lower Cook Inlet:
Currant		qunisiq
High Bush Cranberry		qalakuaq
Blueberry		atsaq

10-12 (8)

English:	PWS:	Lower Cook Inlet:
moth		suqusak
Test it		takuluku
Defoliation (Leaves that fall off after the moths eat them)		Pellut tuqulnut sugusat piitullruaqatki

10-12 (9)

English:	PWS:	Lower Cook Inlet:
Students have these words on the cards they have been creating throughout these activities		

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