

# Akutaq: Alutiiq Ice Cream



**Grade:** 2<sup>nd</sup>- 12<sup>th</sup>

**Time:** Weeklong unit (time varies for each day).

**Lesson Description:** Explore traditional Alutiiq subsistence practices by making Akutaq – Alutiiq Ice Cream.



**Kit Includes:**

- Akutaq (Alutiiq Ice Cream) recipe cards.
- Book: Berry Magic by Teri Sloat (Day One)

**Materials Needed:**

- Berry buckets (Day Two)
- First Aid Kit (Day Two)
- Strainers (Day Three)
- Large bowls (Day Five)
- Electric mixer(s) (Day Five)
- Spatula(s) (Day Five)
- Measuring cups & spoons (Day Five)
- Serving bowls and spoons (Day Five)
- Printed Recipe for each group (Day Five)

**Photo:** Salmonberries by Patrick Saltonstall

Alutiiq Vocabulary	Art Elements	Art Principles	Content Connections
Suumacirpet – Subsistence	<input type="checkbox"/> Line <input checked="" type="checkbox"/> Shape <input checked="" type="checkbox"/> Color	<input type="checkbox"/> Pattern <input type="checkbox"/> Rhythm/ Movement	AK Cultural Standard
Alagnaq – Berry	<input type="checkbox"/> Value <input checked="" type="checkbox"/> Texture	<input checked="" type="checkbox"/> Proportion/ Scale	AK Reading Standards
Inartaq – Basket	<input checked="" type="checkbox"/> Space/Perspective	<input checked="" type="checkbox"/> Balance	
Nunaquluni, Alagnarsurluni – Berry Picking		<input type="checkbox"/> Unity <input checked="" type="checkbox"/> Emphasis	

**Objectives and Assessment Criteria:**

Students will learn...

- To demonstrate comprehension by explaining their berry picking experience through a narrative story.
- Be able to demonstrate a stronger knowledge of traditional subsistence lifestyle by identifying various cultural events practiced by the Alutiiq people.

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## Cultural Relevance:

Kodiak's Alutiiq people harvest seventeen varieties of berries, which are used for food, medicine, and natural dyes. Salmonberries are collected in the largest quantities, although crowberries, lowbush cranberries, and early blueberries are other favorites. Berry picking begins in late June and continues well into the fall. People often wait to pick certain varieties till October or November, when they have been sweetened by a frost.

Groups of related women and children typically work together to gather berries. Men may accompany the pickers to provide protection from bears or hunt nearby. While picking, women teach their children to respect berry patches. Over-picking, breaking branches, stepping on plants, or eating too many berries are considered poor etiquette.

In the past, families collected up to fifty pounds of berries for winter use. They preserved this fruit in seal oil and stored the mixture in dried seal stomachs. Today, some Alutiiq people continue to use oil as a berry preservative, placing their fruit in jars of cooking oil. Others freeze their berries. Traditional Alutiiq ice cream, known as *akutaq*, is made from berries mixed with fish eggs, seal oil, and the bulbs of the Kamchatka lily. Modern versions include sugar or mashed potatoes.

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## AK Standards Addressed:

Cultural Standard B. cultural knowledge as part of a living and constantly adapting system that is grounded in the past.

Cultural Standard C. uses local language and cultural knowledge as a foundation for the rest of the curriculum.

Alaska State Standards:  
RI.2.1 – Reading for information.  
W.2.3 – Narrative Writing

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## Create:

### Day One: Introduction to Subsistence Practices

- What is subsistence? Allow time for thinking and responses, answers should include hunting, fishing, berry picking, and gardening.
- Does anyone have family members, or do they hunt, fish, berry pick, grow vegetables? Those are all forms of subsistence.
- Why was and is subsistence important to the people of Alaska? Answers can include recognizing that there has not always been a grocery store down the road, or restaurants to eat out at.
- Introduce traditional subsistence practices such as salmon processing, whale hunting and uses, harvesting local plants, and berry picking.
- Conclude the day's lesson by reading *Berry Magic* and preparing for the berry picking field trip (remind the class to dress for the weather).
- Provide each student with a take home note/invitation explaining the lesson, field trip and needed ingredients. Be sure to include specific dates of the field trip, when

ingredients are needed at school, and when they are encouraged to join the class to make Akutaq.

### Day Two: Berry Picking Field Trip

- Review field trip rules and safety information and take a school first aid kit.
- Confirm what kind of berries are going to be harvested (salmonberries or blueberries, this will depend on the time of year).
- Discuss where the berries can be found and why (blueberries like the shade of larger trees and salmonberries ripen in the sun).
- Be sure students have berry buckets and any other items they may need.
- Once you arrive back from the field trip be sure to store the berries in the refrigerator until the following day.

### Day Three: Cleaning Berries and Writing Narrative

- Students will rinse, sort, and prepare berries for making ice cream, (pick out any leaves, sticks, or unripe berries) and return them to the refrigerator until Friday.
- Provide students time to create a short narrative of their berry picking experience.
- Write key words in English and Alutiiq on the board. Click the link to the Alutiiq Museum Alutiiq Word of the Week Archive to listen to the pronunciations of the words as well as more information.
- Allow students to share their stories with the class of their berry picking experience.

### Day Four: Ingredient Check and Assign Jobs

- Ensure that all needed ingredients have been collected and that there is enough to make adequate ice cream for the class.
- Gather and clean all tools needed for making the ice cream.
- Assign groups, either by allowing students to choose or picking name.
- Each group should then decide who is going to do what part, measuring, mixing, clean up, etc.

### Day Five: Making Akutaq

- Review the steps of following a recipe (provide each group with a written copy as well as displaying it in the board).
- Instruct students on the use of electric mixers, an adult needs to be present during this process (teacher, paraprofessional, or parent volunteer).
- Allow students to proceed while monitoring their progress. Provide assistance when needed.
- When Akutaq is completed provide bowls and spoons and enjoy the product of subsistence.

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### **Modification:**

- Allow students to express their likes/dislikes of the Akutaq.
- How does it compare to the ice cream they buy at the store?

- Would they like it better with different berries or other ingredients added?
  - Provide a copy of the recipe for those who wish to take one home. (Attached)
  - Open-ended questions about other forms of subsistence they would like to experience.
  - Have an alternative for students who have allergies.
  - Provide extra support for those with physical limitations. If a student is unable to reach berries on bushes, bring a few branches to the student. Help students who may not be able to measure and mix and provide visuals of the different steps taken during each process.
  - ELL students may need recipe cards translated into their native language.
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### **Close and Assessment:**

- Work areas should be properly cleaned, and dishes collected to be washed.
  - Items brought from home; berry buckets, electric mixers, extra ingredients should be returned.
  - Thank volunteers that helped with the process.
  - Students successfully made Akutaq and tasted it, giving their opinions on the flavor and how it compares to what they have considered ice cream.
  - Students completed and shared a narrative story of the process taken to pick and prepare the berries.
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### **Additional Resources:**

- Alutiiq Word of the Week: Berry
- Alutiiq Word of the Week: Basket
- Alutiiq Word of the Week: Berry Picking
- Alutiiq Word of the Week: Subsistence

## Akutaq: Alutiiq Ice Cream



### Ingredients:

- 2 or 3 Tbsps. of oil
- 1/2 to 1 cup of shortening (e.g., Crisco)
- 2 cups of sugar
- 2 quarts to a gallon of berries (your choice)
- 1/4 cup of lemon juice
- 1 cup or less of orange juice

### Directions:

1. Blend oil and shortening with an electric mixer.
2. Add the sugar (one cup at a time) and juice until fluffy – about 5 minutes or more.
3. Add berries last using a spatula to combine with the shortening mixture.

**Piturnik'gcikina! – Enjoy your food!**

# Making Yarrow Salve



**Grade:** 6-12

**Time:** 2-5 Days

**Lesson Description:** Students will learn about the medicinal purposes and importance of plants in Alutiiq society and make yarrow salve.



## Kit Includes:

- Naut'staarpet — Our Plants A Kodiak Alutiiq Plantlore
- Alutiiq Plant Worksheets
- Kodiak Medicinal Plants Activity
- Yarrow Salve Questions During and After the Lab
- Native Plants/Salve Making Chemistry Extension Activity
- Plant Information Cards
- Online Plant Gallery
- Kodiak Alutiiq Spring Plants by the Native Educators of the Alutiiq Region

**Photo:** Yarrow leaf on Mayflower Beach in Kodiak. 2021

## Materials Needed:

- Single burner hot plate
- Cooking pot (1.5-2 Quart) no lid needed.
- Wooden spoon
- Silicone spatula for scraping contents of the pot.
- 1 cup measuring cup.
- 1 quart size glass jar and lid
- 1 hot mitt
- Plant based oil (olive, grape seed, etc.)
- Yarrow plant material – (previously prepared into smaller pieces for easy handling)
- Data table
- Ruler and Calculator
- Small funnel
- Colander
- Cheesecloth
- 1/8 cup measuring utensil.
- Beeswax
- Containers for finished salve
- Prepared labels
- Latex gloves
- Access to cold water, if needed

<b>Alutiiq Vocabulary</b>	<b>Art Elements</b>	<b>Art Principles</b>	<b>Content Connections:</b>
Qangananguaq — Yarrow Naut'staat — Plants Maasaq — Salve Imangcarluku — Poultice Caayuq — Tea Mingurluku — Rub Wainiik — Steam Bath Switch Kenilluku — Soak/Steep	<input type="checkbox"/> Line <input type="checkbox"/> Shape <input checked="" type="checkbox"/> Color <input type="checkbox"/> Value <input checked="" type="checkbox"/> Texture <input checked="" type="checkbox"/> Space/ Perspective	<input type="checkbox"/> Pattern <input type="checkbox"/> Rhythm/ Movement <input checked="" type="checkbox"/> Proportion/ Scale <input checked="" type="checkbox"/> Balance <input checked="" type="checkbox"/> Unity <input checked="" type="checkbox"/> Emphasis	AK Cultural Standards  AK Science Standards

### Objectives and Assessment Criteria:

Students will learn...

- How Alutiiq people used and harvested plants for medicinal purposes.
- To make yarrow salve and what yarrow salve was used for traditionally.
- To explore the plant resources available and discover the various plants and their uses.

### 6-8 AK Science Standards Addressed:

SB1.1  
SB3.1  
SD3.2 7th  
SB3.1 7th  
SB3.2  
SA3  
SF1.1-SF3.1

### Cultural Relevance:

Healers were believed to have spiritual powers. In addition to learning skills from older women, they were imbued with special knowledge. They simply knew how to diagnose and treat illness—a divine gift. Women worked with their hands to locate sickness and used herbs, steam baths, and touch as therapies. For centuries, Alutiiq healers have been distilling the essence of plants for medicinal purposes. Remedies for colds and coughs are particularly plentiful. Cranberry leaves, spruce cones, rose hips, nettle leaves, Labrador tea leaves, and even the inner bark of the devil's club root can be boiled to treat congestion. Northern yarrow (*Achillea borealis*), also known as squirrel's tail, is a hardy, medium-sized herb that thrives in open habitats throughout the Kodiak Archipelago. This member of the sunflower family has frilly grey-green leaves that are slightly hairy. In late summer, the plant produces clumps of small, white, or pale pink flowerets. Yarrow has many medicinal applications. Alutiiq people commonly use it as a steam bath switch or add it to poultices to relieve aches and pains. Warmed, wet leaves or crushed roots can be applied directly to an afflicted area or wrapped in a moistened cloth. Northern yarrow can also help to cure external infections such as sores, cuts, or in some cases toothaches. Tea can also be made from either fresh or dried yarrow leaves, steeped, or boiled. The tea

is said to relieve cramps and gas, increase appetite, and alleviate the symptoms of a cold. You can also repel mosquitoes by rubbing the plant on your skin or clothing.

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### **Create:**

- Share the cultural relevance section and the importance of plants to the Alutiiq people for medicinal purposes with your students.
  - Have the students explore the various plant resources and links provided.
  - Once the students have explored the different plant resources, give them the Alutiiq Plant Worksheet to complete. This can be completed in groups or individually.
  - Once they have completed the worksheet have a class discussion about the medicinal plant uses in Alutiiq society and review the answers.
  - Have the students explore and use the Kodiak Alutiiq Spring Plants by the Native Educators of the Alutiiq Region: [http://alutiqeducation.org/files/resource\\_pdf/Spring%20Plants%20color.pdf](http://alutiqeducation.org/files/resource_pdf/Spring%20Plants%20color.pdf) to complete the Kodiak Medicinal Plants activity.
  - Once the students have successfully completed the Kodiak medicinal Plants activity, have a discussion on the various plants they used.
  - When the students have an understanding about plants in Alutiiq society, proceed to making the yarrow salve.
  - Students will follow the instructions and directions to make the salve and complete the questions during and after the lab. Students can also complete the Native Plants/Salve Making Chemistry Extension Activity after they have successfully made the salve.
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### **Close and Assessment:**

- Students understand the importance plants had in Alutiiq society.
  - Students understand the process and how plants were used for medicinal purposes.
  - Students have successfully completed the worksheets, questions and made yarrow salve.
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### **Modification:**

- Explore the plant resources as a whole class and complete the worksheets and questions together.
  - Pick a specific plant and have the students record a list of the information such as, when it grows, how it is prepared, what it helps alleviate etc.
  - Have the students pick two different plants and create a compare and contract chart based on the different elements.
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### **Additional Resources:**

- Alutiiq Word of the Week Archive: Plants — Naut'staat
- Alutiiq Word of the Week Archive: Yarrow — Qangananguaq
- Alutiiq Word of the Week Archive: Sick — Qenaluni
- Alutiiq Word of the Week Archive: Tea — Caayuaq
- Alutiiq Word of the Week Archive: Woman — Arnaq



# Alutiiq Plant Worksheet

1. What did the Alutiiq people use as medicine before modern medicine?

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2. What does "medicinal" mean? \_\_\_\_\_

3. Which parts of the plant were used? \_\_\_\_\_

4. What season were medicinal plants harvested?

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5. Who was responsible for the harvesting? \_\_\_\_\_

6. Who was responsible for processing (making) the medicines?

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7. What ways did the Alutiiq people use the plants for medicinal purposes?

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8. How are the ways of the Alutiiq medicine similar to modern medical procedures and medicines?

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# Alutiiq Plant Worksheet — Answer Key

1. What did the Alutiiq people use as medicine before modern medicine?

Plants were a central source of medicine.

2. What does “medicinal” mean?

Medicinal (of a substance or plant) having healing properties — Definition from Oxford Languages

3. Which parts of the plant were used?

Leaves, stems, roots, flower, fruit. The whole plant.

4. What season were medicinal plants harvested?

Alutiiq people harvest plants throughout the year.

5. Who was responsible for the harvesting?

All members of Alutiiq communities participated in plant collecting, although men and women harvest different species. Women collect plants primarily for food and medicine.

6. Who was responsible for processing (making) the medicines?

Women were responsible as the healers in society. They would manufacture herbal medicines and tend to the sick.

7. What ways did the Alutiiq people use the plants for medicinal purposes?

Salve, Poultice, Tea, Rub, Steam Bath Switch, Soak/Steep etc.

8. How are the ways of the Alutiiq medicine similar to modern medical procedures and medicines?

We use salves, poultices, tea, rubs, bath scrubber, and soak/steep medicines today.

# Kodiak Medicinal Plants Activity

Use the Kodiak Alutiiq Spring Plants by the Native Educators of the Alutiiq Region to complete the activity below.

Common Name: \_\_\_\_\_ Scientific Name: \_\_\_\_\_ Alutiiq Name: \_\_\_\_\_

Where it can be found (Habitat)	Description
Medicinal Purposes	Sketch (search for better pictures to make an accurate sketch)

Common Name: \_\_\_\_\_ Scientific Name: \_\_\_\_\_ Alutiiq Name: \_\_\_\_\_

Where it can be found (Habitat)	Description
Medicinal Purposes	Sketch (search for better pictures to make an accurate sketch)

Common Name: \_\_\_\_\_ Scientific Name: \_\_\_\_\_ Alutiiq Name: \_\_\_\_\_

Where it can be found (Habitat)	Description
Medicinal Purposes	Sketch (search for better pictures to make an accurate sketch)

Common Name: \_\_\_\_\_ Scientific Name: \_\_\_\_\_ Alutiiq Name: \_\_\_\_\_

Where it can be found (Habitat)	Description
Medicinal Purposes	Sketch (search for better pictures to make an accurate sketch)

# Making Alutiiq Salve – Questions and Information for During and After the Lab

1. What type of mixture is the oil before it is poured into the pot? homozygous or heterozygous
  
2. What type of mixture is in the pot when the oil and plant is poured in?
  
3. Olive oil is primarily composed of the compound oleic acid. Its chemical formula is  $C_{18}H_{34}O_2$ . List each element and the number of atoms of each element:
  
4. Sometimes the chemical formula is written:  $CH_3(CH_2)_7CH=CH(CH_2)_7COOH$ . Is it the same as  $C_{18}H_{34}O_2$ ?  
 Explain: \_\_\_\_\_  
 \_\_\_\_\_

Time	Observations (color, transparency, viscosity, odor...)

6. Find the height of the container your salve will be put in: \_\_\_\_\_
  
7. Find the radius of the container your salve will be put in: \_\_\_\_\_
  
8. Calculate the volume of your container. Don't forget units!  $V = \pi r^2 h$  : \_\_\_\_\_
  - You added wax to the oil infused with yarrow. Waxes are a class of chemical compounds that are plastic (malleable) near ambient temperatures. They are also a type of lipid. Characteristically, they melt above 45 °C (113 °F) to give a low viscosity liquid. Waxes are

insoluble in water but soluble in other solvents. All waxes are organic compounds, both synthetic and naturally occurring.

1. Define the following terms that were used above:

Chemical compound:

Ambient temperature:

Malleable:

Lipid:

Viscosity:

Insoluble:

Solvent:

2. What is the difference between synthetic and naturally occurring?

3. The approximate chemical formula of beeswax (a natural wax produced by individual honeybees) is  $C_{15}H_{31}COOC_{30}H_{61}$ . List each element and the number of atoms of each element:

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Sketch of olive oil compound (oleic acid)	Sketch of wax compound.
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# Making Yarrow Salve in the Classroom Day 1:

The yarrow plant is gathered during the summer months from June through September (not from one location, but rather from many to avoid over harvest) and dried in an area with plenty of circulation. Drying may be done outdoors on a clothesline, or indoors where there is plenty of ventilation. Drying is best done by making small 'bouquets' of the plant, tying cotton string around the stems, and hanging upside down after gently shaking each bouquet (to remove bugs or dirt). Plants may dry for extended periods of time. Once dry, they may be stored for extended time in a cotton bag (pillowcase works great) in a cool, dry location.

For easier handling by students, the dried plant should be clipped into about two-inch pieces. This may be done by students prior to further processing. The plant should be handled with care and with clean, dry hands (or hands covered in food safe latex gloves) and clean scissors.

(Note: Students with allergies to dust, grass or other plant material may need to take care in handling the raw plant or avoid it all together.)

## Materials needed at each station Day One:

- Single burner hot plate
- Cooking pot (1.5-2 Quart) no lid needed.
- Wooden spoon
- Silicone spatula for scraping contents of the pot.
- 1 cup measuring cup.
- 1 quart size glass jar and lid
- 1 hot mitt
- Plant based oil (olive, grape seed, etc.)
- Yarrow plant material – (previously prepared into smaller pieces for easy handling)
- Data table
- Ruler and Calculator

## Directions:

1. Measure 1 cup of plant material and put it into the cooking pot.
2. Measure 1 level cup of oil and pour into cooking pot on top of plant.
3. Mix gently with wooden spoon.
4. Place cooking pot on top of burner
5. Turn the burner to low heat.
6. Cook oil and plant, mixing often. Pay attention to consistency of oil (should begin to get thinner as it is heated) and the color and odor of the plant and mixture as a whole.
7. Burner may need to be heated to medium high to high
8. Continue cooking until a change is noticed in the odor of the plant.
9. Be careful not to burn the plant mixture.
10. When cooking is completed, turn off the burner then remove cooking pot.
11. Let the plant and oil mixture cool.
12. Gently pour the contents into a glass jar. Let cool to room temperature before putting a lid on it.
13. Leave the lab area as you found it.

# Making Yarrow Salve in the Classroom Day 2:

## Materials needed at each station Day Two:

- Previously prepared oil and plant mixture in jar
- Single burner hot plate
- Cooking pot (1.5-2 Quart) no lid needed.
- Wooden spoon
- Silicone spatula for scraping contents of the jar and pot.
- Small funnel
- Colander
- Cheesecloth
- 1 hot mitt
- 1 cup measuring cup.
- 1/8 cup measuring utensil.
- Beeswax
- Containers for finished salve
- Prepared labels
- Latex gloves
- Access to cold water, if needed

## Directions:

1. Remove plant material from the oil. To do this, prepare the cooking pot, scraper, and colander for use and one or two students with latex gloves on two hands.
2. Line the colander with cheesecloth, allowing the edges of the cloth to hang over the sides of the colander.
3. Pour the plant/oil mixture through colander and cheesecloth into the cooking pot. Use the scraper to completely empty the glass container.
4. Once the majority of the oil has passed through, the students with gloves on gently gather the edges of the cheesecloth together and squeeze the plant mass to ensure that you are capturing as much of the plant infused oil as possible.
5. Set aside the cheesecloth with the plant material. Do not discard at this time. This plant is eventually returned to the outdoors where it was harvested from or to an area that produces yarrow.
6. Place a cooking pot with plant infused oil onto the burner. Turn heat on to medium.
7. Add 1/8 cup of beeswax to the oil mixture.
8. When beeswax has completely melted, remove pot from burner.
  - a. Safety note: This mixture is very hot and will stick to the body if it is spilled. If touched by the mixture, immediately immerse in cold water or allow cold water from faucet to pour over affected area of skin)
9. Using funnel, fill each salve container with oil mixture. Pour slowly and carefully, as the mixture is very hot. Leave it open. (Note: If oil mixture becomes too thick to pour accurately, reheat as needed.)
10. Allow oil mixture to cool to room temperature before applying lid with proper label.
11. Leave the lab area as you found it.



# Labels:

Yarrow Salve Uses Dry Skin, Rashes, Chapped Lips, and Bruises	Yarrow Salve Uses Dry Skin, Rashes, Chapped Lips, and Bruises	Yarrow Salve Uses Dry Skin, Rashes, Chapped Lips, and Bruises	Yarrow Salve Uses Dry Skin, Rashes, Chapped Lips, and Bruises
Yarrow Salve Uses Dry Skin, Rashes, Chapped Lips, and Bruises	Yarrow Salve Uses Dry Skin, Rashes, Chapped Lips, and Bruises	Yarrow Salve Uses Dry Skin, Rashes, Chapped Lips, and Bruises	Yarrow Salve Uses Dry Skin, Rashes, Chapped Lips, and Bruises
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Yarrow Salve Uses Dry Skin, Rashes, Chapped Lips, and Bruises	Yarrow Salve Uses Dry Skin, Rashes, Chapped Lips, and Bruises	Yarrow Salve Uses Dry Skin, Rashes, Chapped Lips, and Bruises	Yarrow Salve Uses Dry Skin, Rashes, Chapped Lips, and Bruises

## Native Plants/Salve Making Chemistry Extension:

Assign each member of your group a job:

Researcher: \_\_\_\_\_ Recorder: \_\_\_\_\_

Researcher: \_\_\_\_\_ Task Master/Helper: \_\_\_\_\_

- Researchers – find information and make sure it is recorded correctly.
- Task Master/helper – keeps everyone on task, ensures directions are followed, helps with other jobs if necessary.
- Recorder – takes notes, writes, or types information.
- If there is a 5<sup>th</sup> group member, another researcher: \_\_\_\_\_

1. Choose a plant native to Kodiak (other than yarrow) that you could make something with.
2. Find or design a procedure to make what you choose.
3. Make a list of the materials and steps to making it.
4. Find a chemical formula for as many of the items in your materials list as possible.
5. Sketch a molecule of each formula you found.

# Medicinal Plant Study



**Grade:** 3-5

**Time:** 30 min

**Lesson Description:** Students will explore medicinal uses for Kodiak plants.



**Kit Includes:**

- Naut'staarpet — Our Plants A Kodiak Alutiiq Plantlore
- Plant Worksheets
- Plant Information Cards
- Online Plant Gallery

**Materials Needed:**

- Alutiiq Plants App (available in self-service for KIBSD and the App Store)

**Photo:** Nina Olsen applies old salmonberry leaves to the hand of her daughter, Kathy Webber, Kodiak, December 1990. Kodiak Area Native Association Collection, Alutiiq Museum, AM4:188. Photograph by Priscilla Russell.

Alutiiq Vocabulary	Art Elements	Art Principles	Content Connections
Imangcarluku — Poultice Wainiik — Steam Bath Switch Kenilluku — Soak/Steep Taariq — Steam Bath Scrubber Caayuq — Tea Mingurluku — Rub Maasaq — Salve	<input type="checkbox"/> Line <input type="checkbox"/> Shape <input checked="" type="checkbox"/> Color <input checked="" type="checkbox"/> Value <input type="checkbox"/> Texture <input checked="" type="checkbox"/> Space/ Perspective	<input checked="" type="checkbox"/> Pattern <input type="checkbox"/> Rhythm/ Movement <input type="checkbox"/> Proportion/Scale <input type="checkbox"/> Balance <input type="checkbox"/> Unity <input checked="" type="checkbox"/> Emphasis	Science  Social Studies – Alaska Native People

**Objectives and Assessment Criteria:**

Students will learn...

- To use resources such as the Alutiiq Plants app, plant informational cards, and Naut'staarpet — Our Plants A Kodiak Alutiiq Plantlore book, to create a “first aid kit.”
- How the Alutiiq people used plants for medicinal purposes.

**Cultural Relevance:**

Healers were believed to have spiritual powers. In addition to learning skills from older women, they were imbued with special knowledge. They simply knew how to diagnose and treat illness—a

divine gift. Women worked with their hands to locate sickness and used herbs, steam baths, and touch as therapies. For centuries, Alutiiq healers have been distilling the essence of plants for medicinal purposes. Remedies for colds and coughs are particularly plentiful. Cranberry leaves, spruce cones, rose hips, nettle leaves, Labrador tea leaves, and even the inner bark of the devil's club root can be boiled to treat congestion. Switching is a common practice in Alutiiq steam baths. In the soothing, wet heat, people slap themselves with flexible branches to promote good health. This practice improves circulation, relieves aches and pains, and can be used to treat illness and prepare a pregnant woman for delivery. For Alutiiq people, plants represent an abundant source of food and raw materials. Like other subsistence pursuits, plant harvesting, and use follow a predictable, seasonal rhythm in Alutiiq communities, from harvesting of tender spring greens to summer and fall berry picking, hauling wood for fuel, and manufacturing items from plant fibers.

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### **Create:**

- Explain to students that they will be creating a plant first aid kit based on Alutiiq plantlore.
  - Introduce the activity and start a discussion about plants. Do you eat local plants? Pick berries in the summer? Share the cultural relevance section with your students and the preface from Naut'staarpet — Our Plants A Kodiak Alutiiq Plantlore to provide background knowledge for your students.
  - In groups of (2-3) students will use the available resources to search for plants for each ailment. Students will then record the plant name along with the Alutiiq name and scientific name, draw an image of the plant, and describe the best way to prepare the plant for each given condition.
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### **Close and Assessment:**

- When students finish in their groups have them share their research and chosen plants with the whole class. Record student answers on a chart. Discuss with the class: were similar plants chosen? How about the preparation methods for the plant, are they similar or different? Why?
  - Students understand Alutiiq plants and the traditional medicinal uses of plants in Alutiiq culture. Students created a successful "first aid kit."
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### **Modification:**

- Students can choose two medicinal plants and make a compare and contrast chart.
  - Students can explore the online plant gallery on Alutiiq Plants.
  - Explore the Alutiiq Plants App and learn more about the plants and their medicinal uses.
  - Reach out to an Alutiiq Plantlore expert and go on an Alutiiq plant walk around the community to learn about the Alutiiq plants and their uses.
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### **Additional Resources:**

- Book: Wildflowers and Other Plant Life of the Kodiak Archipelago by Stacy Studebaker
- Alutiiq Museum's Word of the Week Archive: Plants

# Burn

Name of plant:

Alutiiq name:

Scientific name:

Draw a sketch of the plant:

How would you prepare the plant to treat burns?

## Sore Throat

Name of plant:

Alutiiq name:

Scientific name:

Draw a sketch of the plant:

How would you prepare the plant to treat a sore throat?

# Sprains

Name of plant:

Alutiiq name:

Scientific name:

Draw a sketch of the plant:

How would you prepare the plant to treat a sprain?

Fever

Name of plant:

Alutiiq name:

Scientific name:

Draw a sketch of the plant:

How would you prepare the plant to treat a fever?



# Toothache

Name of plant:

Alutiiq name:

Scientific name:

Draw a sketch of the plant:

How would you prepare the plant to treat a toothache?

# Answer Key

(Note: There are multiple correct answers, research the resources as well)

Single Delight, Shy Maiden (Locally Star of Bethlehem) — Ikignganaq (*Moneses uniflora* L.)

- People use single delight tea to treat an array of illnesses, including pleurisy, pneumonia, tuberculosis, sore throat, and stomach disorders. The tea can also be used as a wash for wounds, sores, rashes, bunions, or corns.

Northern Yarrow (Locally Squirrel's Tail) — Qangananguaq (*Achillea millefolium* L.)

- The leafy stems are used as a steam bath switch and/or a poultice to treat aches and pains, sores, cuts, boils, abscesses, toothaches, and broken bones.

Nettle; Stinging Nettle (Locally Stingers) — Uqaayanaq (*Urtica dioica* L.)

- People also use nettle roots to relieve toothaches and tooth infections.

Angelica — Uriisaq (*Angelica lucida* L.)

- The inner part of the stem and the leaves are rubbed on the skin to heal rashes, sores, pimples, cuts, dry skin, and other skin problems. People also rub angelica stems on swollen injured areas and over broken bones.
- Angelica is highly valued as a steam bath switch and used to relieve aches, pains, and sore muscles.

Common Wormwood (Locally Silver Leaf) — Caik (*Artemisia tilesii* Ledeb.)

- People drink wormwood tea for heart and stomach problems, sore throats, and aches and pains including headaches.

Licorice Fern — Qaataq (*Polypodium glycyrrhiza* D. C. Eaton = *Polypodium vulgare* L.)

- Alutiiq people use licorice fern fronds to relieve severe arthritis and to treat broken bones and sprains.

Sitka Spruce— Napaq (*Picea sitchensis* (Bong.)

- Spruce bud tea can treat coughs, pneumonia, and other respiratory problems.

Balsam Cottonwood, Balsam Poplar — Ciquq (*Populus balsamifera* L.)

- People added ash from cottonwood bark ash to snuff (iqmik) and used to treat tooth aches.

Sitka Alder, Mountain Alder — Uqgwik (*Alnus viridus* Vill.)

- People gargle alder cone tea for sore throats and laryngitis.

Narrow-Leaf Labrador Tea, Hudson Bay tea — Atsaqutarpak; Nunallaq Caayuuq (*Rhododendron tomentosum* Harmaja = *Ledum palustre* L.)

- Alutiiq people recommend narrow-leaf Labrador tea for lung and throat ailments, including colds, coughs, and tuberculosis, as a gargle for sore throats, to relieve asthma, to treat a fever, and to cleanse the blood.

# Alutiiq Graphic Arts: Painting with Plants



**Grade:** 4<sup>th</sup>-12<sup>th</sup>

**Time:** 2 Days

**Lesson Description:** There are many forms of Alutiiq art. This lesson explores the ways Alutiiq people made and used pigments for paint and dye.



Photo: Plant Dyes from a Munartet Workshop in 2019.

**Kit Includes:**

- Pigment Worksheet
- Igaruacirpet- Our Way of Making Designs Book

**Materials Needed:**

- Crockpots (alternatively a saucepan + hotplates or an electric kettle will work)
- Water
- Yellow Onion Skins (from about 5 onions)
- Spinach (1 can)
- Blueberries (3 cups) or Beets (3-4 Chopped)
- Paint Brushes
- Mesh strainer
- White Paper
- Jars to hold dye.

Vocabulary	Alutiiq Vocabulary	Art Elements	Art Principles	Content Connections
Pigment Chlorophyll Carotenoids Flavonoids Anthocyanins	<i>Tan'ertuq/Tamlertuq</i> – It is black. <i>Kawirtuq</i> – It is red. <i>Qatertuq/Qat'rtuq</i> – It is white. <i>Cungagtuq</i> – It is blue.	<input type="checkbox"/> Line <input type="checkbox"/> Shape <input checked="" type="checkbox"/> Color <input type="checkbox"/> Value <input checked="" type="checkbox"/> Texture <input checked="" type="checkbox"/> Space/ Perspective	<input type="checkbox"/> Pattern <input type="checkbox"/> Rhythm/ Movement <input type="checkbox"/> Proportion/ Scale <input checked="" type="checkbox"/> Balance <input type="checkbox"/> Unity <input type="checkbox"/> Emphasis	Science  Art

**Objectives and Assessment Criteria:**

Students will learn...

- To identify the naturally occurring major pigments in fruits and vegetables: chlorophyll, carotenoids, and flavonoids.
- How to use the major pigments to create natural dyes or watercolors.
- To understand the significance of painting in Alutiiq society.

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### **Cultural Relevance:**

In classical Alutiiq society, graphic arts had many functions. Careful decoration adds beauty to objects. This helped to show respect for the plants and animals that provided for people and ensure future prosperity. Pictures also preserved history. Like books, they created a physical record of the past, recording events and stories. Some images were also family symbols. Imagine that a hunter killed two seals with one harpoon strike. This very lucky event might be symbolized in paintings on his household implements. When people saw the painted tools, they would be reminded of the hunter's skill and good fortune, and know the objects belong to his family. The picture preserved a story, celebrated the hunter's talent, and expressed ownership.

Painted images, including geometric designs, animals, human figures, boats, celestial bodies, and spirits were the final decorative touches on many objects. Alutiiq people painted pictures on wooden objects—hats, paddles, arrows, bows, boxes, masks, and many other implements. They also pecked pictures on boulders, etched designs into stone and bone weaponry, and created images through weaving and embroidery. Before the availability of commercially made pigments, Kodiak artists created paints and dyes from plants and minerals. Artists extracted colors from hemlock bark, grasses, and berries, or created colorful powders by crushing red shale, iron oxide, copper oxide, and charcoal with a mortar and pestle, and mixing the resulting powder with a binder of oil or blood. Artists applied paint to objects with their fingers, a small stick, or possibly a paintbrush made with animal hair.

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### **Create:**

- Share with the students the significance of Alutiiq paintings and how Alutiiq artists made pigments. Refer to the cultural relevance section above and Chapter 4 of the book Igaruacirpet—Our Way of Making Designs (pages 105-116).
- Begin a discussion by asking students where they think plants get their color. Have students identify different colored plants we eat, write a list of the plants mentioned on the board. Explain that plant pigments form the colors. Introduce the names of the three major pigments: chlorophyll which produces green pigments, carotenoids which produce yellow, orange, red and pink pigments, and flavonoids. Explain that there are two types of flavonoids: yellow flavonoids and anthocyanins which produce the red, blue, and purple pigments you see in plants.
- Share the definitions to the terms below:
  - Pigment: A substance that imparts a color to a material.
  - Chlorophyll: Green pigment in plants (important to photosynthesis), fat-soluble
  - Carotenoids: Yellow, orange, and red pigments, fat-soluble
  - Yellow Flavonoids: Yellow pigments, water-soluble.
  - Anthocyanins: Also, flavonoids, purple to red pigments, water-soluble.
- Hand out the pigment worksheets. Have students work in groups to chart the list of colored edible plants by the pigments they produce (e.g., Green leafy vegetables such as spinach and lettuce would go into the chlorophyll section, carrots in carotenoids, etc.). This can also be done as a class.
- To make dye:

1. Add 3 cups of fresh or frozen blueberries to a saucepan and cover with about a ½ cup of water. Simmer for several hours, add water if needed. Remove from heat and let cool, strain the blueberry skins, and pour the liquid into a glass jar.
  2. Repeat step 1 with onion skins (from 5 onions) and spinach (use cooked or canned spinach for best pigmentation).
  3. Once the dyes have cooled, students use the watercolors to paint an image.
    - Discuss with the class any observations they have made about the plant watercolors. How well were they able to paint with them? Were any of the colors more pigmented?
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### Close and Assessment:

- Students have completed the pigment worksheet and watercolor painting.
  - Students can identify the naturally occurring major pigments in fruits and vegetables: chlorophyll, carotenoids, and flavonoids.
  - Students understand the use of pigments to create dyes or paint.
  - Students understand the significance of painting in Alutiiq society.
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### Modification:

- Instead of using the dyes as watercolor paint, dye fabric squares, string, eggshells, or even porcupine quills. (Note: Protein fibers such as wool will dye easier than cellulose fibers such as cotton or linen, but both can be used).
  - Collect local plants and experiment with making dyes with them. Have the students make predictions about the colors. Be sure to research plants in your area ahead of time and see which ones work best.
  - This lesson can be used without the science element for younger classes and the dye can be made ahead of time.
  - Take your class on a plant walk and have them chart the different plants and pigments they find.
  - Use this lesson to incorporate and teach a photosynthesis unit.
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### Additional Resources:

- Visit the Alutiiq Museum's Word of the Week Archive to learn and hear the Alutiiq colors.
- Alkema, J., & Seager, S. L. (1982). The Chemical Pigments of Plants. *Journal of Chemical Education*, 59(3), 183-186.
- Naut'staarpet- Our plants A Kodiak Alutiiq Plantlore by Priscilla N. Russell
- For more information on plant pigments visit: WebExhibits: Causes of Color <http://www.webexhibits.org/causesofcolor/7H.html>

# Pigment Worksheet

Alutiiq artists made pigments from the natural resources available such as plants and minerals. Create a list of colored edible plants by the pigments they produce.

Pigments:	Edible Plants:
Chlorophyll	Ex: Spinach
Carotenoids	Ex: Carrots
Flavonoids	
Anthocyanins	

# Plantlore Art Cards



## Kit Includes:

- Blank Plantlore Art Cards
- Sample Plantlore Art Cards

## Materials Needed:

- Pencils
- Colored pencils, markers, and/or crayons

Alutiiq Vocabulary	Art Elements	Art Principles	Content Connections
Mun'arta – Artist	<input checked="" type="checkbox"/> Line	<input checked="" type="checkbox"/> Pattern	Social Studies
Naut'staat – Plants	<input checked="" type="checkbox"/> Shape	<input type="checkbox"/> Rhythm/ Movement	Science
	<input checked="" type="checkbox"/> Color	<input checked="" type="checkbox"/> Proportion/ Scale	
	<input checked="" type="checkbox"/> Value	<input checked="" type="checkbox"/> Balance	
	<input checked="" type="checkbox"/> Texture	<input type="checkbox"/> Unity	
	<input checked="" type="checkbox"/> Space/ Perspective	<input checked="" type="checkbox"/> Emphasis	

## Create:

- Talk with your students about how they use plants in their daily life – plants that they eat, plants that are used medicinally, and plants that they notice but do not use. Talk about plants that they see in Kodiak versus plants that they see in other places, etc.
- Ask students to think about a plant that is meaningful to them. This can be a plant that they love to eat (ex. berries, fruits, vegetables, seaweed, etc.), a plant their family uses for medicine (ex. ginger, devil's club, calendula, etc.), or a plant they simply like. Let them decide which plant is important to them and have them draw their chosen plant on an art card.
- Have a class discussion about how plants are important for our lives. Have students share with a group of students how they chose their plant and why it is important to them before sharing with the whole class.
- If you have time, go on a nature walk with the class to help students get ideas of plants that they want to draw and remind them to observe the world around them.

# Raw Material Matching Game



**Grade:** Any

**Time:** 20-30 minutes

**Lesson Description:** Students will learn the uses for raw materials in traditional Alutiiq society.



**Kit Includes:**

- Raw Material Matching Game Cards
- Plant Informational Cards
- Naut'staarpet – Our Plants A Kodiak Alutiiq Plantlore book
- Online Plant Gallery

**Materials Needed:**

- Alutiiq Plants App (available in self-service for KIBSD and the App Store)

**Photo:** Lucille Davis demonstrates how to apply angelica to a rash or sore. The plant is said to contain oils that revitalize the skin. AM4:83. Photograph by Pricilla Russell.

Alutiiq Vocabulary	Art Elements	Art Principles	Content Connections
Ciquq –Cotton Wood Qar'usiq; Qasrulek – Cedar Qasrulek, Uqgwik – Birch Uqgwik – Alder Napaq – Spruce Nimruya, Uqgwingcuk – Willow Uruq – Mosses Imanit – Beach Rye Culuguat Weg'et – Cotton Grass	<input type="checkbox"/> Line <input type="checkbox"/> Shape <input type="checkbox"/> Color <input type="checkbox"/> Value <input type="checkbox"/> Texture <input checked="" type="checkbox"/> Space/ Perspective	<input checked="" type="checkbox"/> Pattern <input type="checkbox"/> Rhythm/ Movement <input type="checkbox"/> Proportion/ Scale <input type="checkbox"/> Balance <input type="checkbox"/> Unity <input checked="" type="checkbox"/> Emphasis	Science  Social Studies

**Objectives and Assessment Criteria:**

Students will learn...

- The uses for raw materials in traditional Alutiiq society.

**Cultural Relevance:**

Plants are an important source of raw materials. Plants once provided lumber, thread, and cordage, lashing material, weaving material, insulation, bedding, and even pigment for paint. Plants are also a central source of medicine. Healers use herbal remedies to treat everything from scrapes and



swellings to more serious illnesses like fever, arthritis, and respiratory problems. All members of Alutiiq communities participate in plant collecting, although men and women harvest different species. Men procure plants for raw material—particularly the wood used to fuel fires, smoke fish, and build houses. Women collect plants primarily for food and medicine. Berry picking and vegetable harvesting are activities often conducted by women and their children.

Kodiak Island is often called Alaska's Emerald Isle, a nickname that reflects its thick carpet of green summer plants. Abundant rain, mild temperatures, and long summer days combine to make the region's mountains and meadows exceptionally productive for plant growth. There are about 650 known species of vascular plants in the archipelago, and botanists continue to identify more. Kodiak's plant life reflects the island's natural and cultural histories. All of Kodiak's plants are available in neighboring regions of Alaska. To date, botanists have not found any plant species unique to Kodiak. This reflects Kodiak's proximity to the Alaska mainland. The Gulf of Alaska's strong and persistent winds introduce plant spores from neighboring regions, and birds bring seeds to Kodiak in their droppings. Over the millennia, people have also introduced plants, both inadvertently and on purpose. For example, prehistoric visitors from the Alaska mainland probably brought seeds stuck to their clothing and belongings.

Today artists search Kodiak's beaches, forests, and lumberyards for the perfect grain, but in the old days, before spruce trees colonized Kodiak, most wood came from the beach. Carvers gathered drift logs of Pacific yew, cedar, hemlock, and spruce from Kodiak's shores, and collected alder, dwarf birch, and cottonwood from hillside thickets.

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### **Create:**

- Discuss with students what raw materials are? Why would people use them? And what type of raw materials do we use in everyday life?
- Give students the matching game cards and have them pair up to complete the matching game. Inform the students about the different resources below to help them match the materials.
  - Naut'staarpet — Our Plants A Kodiak Alutiiq Plantlore book
  - Alutiiq Plants App
  - Plant Informational Cards
  - The online plant gallery

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### **Close and Assessment:**

- Students have successfully matched the raw materials to the correct uses.
- Understand what raw materials are.
- Understand the different raw materials used for different things in Alutiiq society.

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### **Modification:**

- Have the students explore the online plant gallery to learn about the different raw materials and how Alutiiq people used them.
  - Pass around the natural material samples in the Plantlore education box. Have the students touch the samples and ask the students what they think the material is used to make.
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### **Additional Resources:**

- Alutiiq Word of the Week Archive: Bark — Qelltek
- Alutiiq Word of the Week Archive: Plants — Naut'staat
- Alutiiq Word of the Week Archive: Driftwood — Pukilaaq, Kapilaaq, Tep'aaq (small, medium, full log)
- Alutiiq Word of the Week Archive: Moss — Uruq
- Alutiiq Word of the Week Archive: Red Cedar — Qar'usiq
- Alutiiq Word of the Week Archive: Tree — Uqgwik (deciduous), Napaq (spruce)

# **Balsam Cottonwood,**

## **Balsam Poplar**

Cottonwood — Ciquq



**1.**

**This was used to carve toys,  
gaming pieces, plates, net floats,  
labrets, animal figures, and  
maskettes.**



# **Cedar**

Cedar — Gar'usiq; Qasrulek



**2.**

**This was used in  
building houses and  
boats.**



## **Kenai Birch**

**Birch — Gasrulek, Uqgwik**



## **Sitka Alder, Mountain Alder**

**Alder — Uqgwik**



**3.**

**This was used to make a variety of tools, including wedges, mauls, bows, oars, and hammer and axe handles.**



**4.**

**This flexible wood was used to make the rib of kayaks, snowshoes, temporary shelters, and game pieces.**



## **Sitka Spruce**

**Spruce — Napaq**



**5.**

**The roots were harvested and processed to make weaving material. The branches would be piled to make bedding.**



## **Willow**

**Willow — Nimruyaq, Uqgwingcuk**



**6.**

**This wood is soft. They would only burn this for warmth and to smoke fish if no other wood was available.**



## **Mosses**

**Mosses — Uruq**



## **Beach Rye, Beach Grass, Lyme Grass**

**Beach Rye — Imanit; Tapernat**



**7.**

**This was washed and dried  
for use in diapering babies  
and for toilet paper.**



**8.**

**This was used to weave  
mats, mittens, socks, cups,  
backpacks and other items.**



## **Cotton Grass**

Cotton Grass — Culuguat Weg'et



## **Answer Key**

1. Balsam Cottonwood
2. Cedar
3. Kenai Birch
4. Sitka Alder, Mountain Alder
5. Sitka Spruce



9.

**This was twisted to  
make a wick for a  
stone oil lamp.**



## **Answer Key**

6. Willow
7. Mosses
8. Beach Rye, Beach Grass, Lyme Grass
9. Cotton Grass

