

CLOTHING: FISH Skin Tanning GR: 6-12 (7-8 CLASSES)

Elder Quote/Belief:



"I'm connected to the Eyak people who lived here. If there were any way to be closer, it would be doing this dance with the salmon. I feel like I can go back a few thousand years. Every year I do this, it becomes clearer why I was brought back to the salmon. I was born here, I'm part of the land, and the fish brings energy to me." -Pam Smith, Cordova

Grade Level: 9-12

Overview:

Chugach people traditionally used fish skins because they were a very important part of their existence.

Students will learn how to process and utilize fish as not only a part of their everyday nutritional value but also will come to realize that fish was also a very important part of their lifestyle, necessary for clothing.

How were and why was it an important piece of the Chugach people? How can we apply this traditional use to modern times?

Standards:

<i>AK Cultural:</i>	<i>AK Content Science:</i>	<i>CRCC:</i>
A3: Culturally-knowledgeable students are well grounded in the cultural heritage and traditions of their community	F1: 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.	CE2: Students should have knowledge of traditional and contemporary sewing and clothing using skins and furs.



“This is a salmon skin storage bag. When I didn’t want something to get damp, I would put it in this. If I had matches, I would put them in here, also bullets and gun powder.” John Phillip Sr. (Living Our Cultures Sharing Our Heritage- the First Peoples of Alaska

Lesson Goal:

To explore the importance of salmon skin, to learn how to process and utilize this resource.

Lesson Objective(s):

Students will:

- Learn the Chugach value of putting to use their subsistence resource-salmon.
- Learn that the term “subsistence” means more than gathering food.
- Understand the process that the Sugpiat and Eyak developed to transform fish skin into a product that they could use to make outdoor wearable clothing.
- Try different ways of tanning fish skins using different tanning agents.

Vocabulary Words: Sugt'stun Dialects

English:	Prince William Sound:	Lower Cook Inlet:	Eyak:
Salmon (king)	luqqakaq	luqqakaq	te'ya'lee
boots	kulusuk	kulusuq	giyahgulAXa'yaa
Salmon (silver)	qakkiyaq	qakkiyaq	AdAte'ya'

Materials/Resources Needed:**Class 1:**

- Access to internet for research.
- Computer with DVD player and projector.
- How to tan salmon skins handout (provided).

Class 2 and 3:

- Salmon skins
- Water
- Buckets big enough to completely submerge a salmon skin
- Tanning agent for the salmon skins (deer brains, liquid vegetable glycerin, 99% rubbing alcohol, eggs, alder or hemlock bark)
- Latex gloves for each student
- Gallon size plastic bags
- Dawn dish soap
- Big pieces of cardboard
- Piece of plywood-to tack salmon skin on while drying
- Small nails and hammer or staples and thumbtacks

Class 4 and 5:

- Dried sausage casing (collagen middles from Sausage Company -or other butcher entities)
- Imitation sinew
- Dried beach grass
- Size 6 Glover needles
- Pattern for amulet bag

Reference Books:

- *Alaska Eskimo Footwear* pg.36-37, 100, 102, 104
- *Alaska Magazine-The Water Issue* pg.60-65
- *Deerskins into Buckskins-How to Tan With Brains, Soap, or Eggs* pgs.91-102,143-5,168-170
- *Innerskins Outerskins -Gut and Fishskin* pg.11-23, 31-32
 - http://www.pathickman.com/images/innerskins_outerskins_guts_and_fishskin.pdf
- *Living Our Cultures, Sharing Our Heritage: The First Peoples of Alaska* pg.111
- *Salmon Give Life: Learning from Alaska's First People"*
- *Secrets of Eskimo Skin Sewing* pg.15-16

- *The Etholén Collection* pg.269
- *Women's Work - Women's Art* pg.55(Oil used) and pg.39, 52, 147-8, 162-3, 165, 167 (Fish used for clothing)

Web Resources Salmon Skin Tanning and Sewing

- Salmon unit <http://ankn.uaf.edu/curriculum/units/salmon/>
- Joel Isaak
 - Fish Skin Designer https://www.youtube.com/watch?v=PcPY_HxjaNM
 - Joel Isaak Spotlight <https://www.youtube.com/watch?v=uWDBKa75ghI>
- Salmon Skin Tanning with Mary Babic <https://www.youtube.com/watch?v=EOhpcTDb-lw>
- Fins of Fashion: The Alaskan Artist Creating Salmon Skin Stilettos
 - <https://www.youtube.com/watch?v=bvehu4Uw61E>
- Interview with fish skin sewer June Pardue
 - <https://www.youtube.com/watch?v=3GUf8Ao5vNY>

In Kit-DVD

Smithsonian Arctic Studies Center of the Anchorage Museum- Material Traditions-Sewing Salmon (Also available online and located on the Chugach Heritage website)

Teacher Preparations:

- Review activities and practice Sugt'stun and Eyak vocabulary.
- Recommend to teach this class would be best to have when school first starts up, during the late summer or early fall, because of the salmon run.
- **Class 1:** Invite an Elder/ Recognized Expert on fish skin tanning into the classroom.
- **Class 2-3:** If available, contact your local cannery several weeks before the class to find out if they have salmon skins you can have for the lesson. Or, contact a local fisherman to catch salmon for the class. One silver salmon skinpertwo students. . Gather all the supplies together for the tanning process.
- **Class 4-5:** Review the pattern and stitch for the waterproof amulet bag. Gather together all the necessary supplies for this class.
- Watch videos available on Chugach Heritage website
 - *Smithsonian Institution Material Traditions-Sewing Salmon*
 - *Salmon skin tanning with Mary Babic*
- If time is available, have the students review the books suggested in the reference section. There is very good information regarding fish skins and their uses.

Opening:

Subsistence resources are harvested for food and materials to make wearable objects. The most important thing to remember and continue to do is to show respect for the animal. Alaska Native cultures demonstrate their respect by not wasting any part of the animal, fish or bird. For example, a seal's meat and fat is used for food; sinew for making thread and line; bones for tools and carvings; hide for clothing, mittens, boots, blankets and boat covers; teeth for fish hooks; flippers for boot soles; intestine for waterproof clothing and it's stomach for containers and drum coverings.

Salmon has also always been a very important resource for the people of the Chugach Region and they have much respect for the salmon. “In respect for the fish and the seal, you use every bit of it: the head, the insides, the bones, and the skin of the fish. And then whatever we don’t use goes to the dogs. The bones go back to the river or the lake, wherever you caught it from. If they are from the ocean, you take them there. This will ensure more fish in the next years. If it’s a seal, same way.” (Hickman- *Innerskins & Outerskins*)

Salmon is a very important part of the diet and its skin has been traditionally used for making clothing -mittens, boots, parkas, and containers for water and fish eggs. Fish skins were also used in baskets for decoration. Fish bones used for adornment to clothing pieces and jewelry. Today, this resource is becoming very popular beyond high fashion due to its unique combination of elasticity and robustness (according to the Alaska Magazine April 2018 issue).

Activities:

Class 1:

1. Inform students to take notes while they watch the DVD video-Material Traditions-Sewing Salmon: Introduction and Artist’s Method.
After the video, check for comprehension and ask the students about the different methods for removing the salmon skin, removing the meat and fat, washing and soaking, applying the tanning method, and stretching, softening, or drying. What kind of clothing could be made with salmon skin? Write all these answers down on white board so they can refer back to while tanning process is taking place.
2. Ask students if they know of other resource(s) traditionally harvested that was used to make things, and if so, what?
3. Why would you think it is important to use as much of an animal as possible?
4. *Optional:* Show video clips that are available on Chugach Heritage website:
 - Short clips about Joel Isaak:
 - Fish Skin Designer https://www.youtube.com/watch?v=PcPY_HxjaNM
 - Joel Isaak Spotlight <https://www.youtube.com/watch?v=uWDBKa75ghI>
 - Fins of Fashion: The Alaskan Artist Creating Salmon Skin Stilettos
 - <https://www.youtube.com/watch?v=bvehu4Uw61E>
5. Explain that over the next few days, the students will be tanning salmon skins using a variety of traditional and nontraditional ways. Show the students the different tanned salmon skins out of the kit. Each skin will be labeled with the different tanning process. After the students have looked and felt these skins, ask them what process they prefer and why. Pass out the instructions on tanning salmon skins. Ask each student to review these instructions.

Class 2 and 3:

1. Students will separate up into groups of two. Each group of two will work on one salmon. If you are fortunate enough to get one salmon per student- then each student will work on their own fish skin.
2. At each station there should be a piece of cardboard, a pair of latex gloves for each student, a clean and gutted out salmon, an ulu or knife, a spoon, and pliers. Prerequisite to this class-each student should have watched the video on *Sewing Salmon-the Artist’s Methods* or *Fish Skin Tanning with Mary Babic* and reviewed the instructions on tanning salmon skins.

3. Review instructions with the students on how to properly remove the skin from the salmon. Teacher can visually show the students this step. They may need a pair of pliers for this step to help pull the skin away from the meat.
4. Demonstrate for the students, how to scrape off all the meat and fat from the salmon skin, using a spoon, clam shell or dull butter knife.
5. Review the different ways for tanning the salmon skins. Display and explain the different ingredients for each tanning method. Afterwards, ask the students to choose their tanning agents at this point.
6. Now the work begins! Ask the students to remove the skin from the salmon and scrape away all of the meat and fat (there is also a thin membrane that student should scrape away) with their utensil of choice. Encourage the students to try each method to determine which scraper they prefer.
7. After the students have scraped all the meat, fat and membrane off of skin, they need to wash their salmon skin in joy or dawn soap solution. Students should wash and rinse at least three times. The soap helps rid the salmon skin of its oils. Double check to make sure the skin is very clean.
8. Now students will put their salmon skin in tanning agent. Each group of two students should try a different tanning agent and compare the different skins after they have dried.
9. Instructions are attached for the different techniques in tanning salmon skins. Students must remember to mark on their plastic bags the tanning technique that they used.
10. This process will take two-fifty minute class periods. During the first class session, student should be able to scrape all the meat and fat off of the skin. The salmon skin then can be put into a plastic bag and placed in refrigerator overnight. The next class session, the student will wash and rinse the skin with joy or dawn soap several times to remove as much oils out of the skin as possible. After this process, student will make up their tanning agent and immerse the skin in it, making sure to have the skin fully immersed.
The recommendation is to have the skins soak for at least forty-eight hours.

Class 4 and 5:

1. Read from the reference book, *Innerskins Outerskins Gut and Fishskin* (pages 11-23).
 - Drawing of the waterproof stitch on page 8.
 - Information regarding the welt between two pieces of fish skin is described in detail on page 12.
2. Read from the reference book, *Alaska Eskimo Footwear* (pages 36-37) – preparing fish skins. On this page, there is a drawing of the stitches that incorporates grass to strengthen and waterproof the seams.
3. Read from the reference book, *Secrets of Eskimo Skin Sewing*
 - Pages 15-16, Regarding dyeing of the salmon skins with natural resources available in community.
 - Page 29, An illustration of directions for tying a knot
 - Page 95, Illustration for the waterproof stitch
4. Read the following quotation from.” John Phillip Sr. (*Living Our Cultures Sharing Our Heritage- the First Peoples of Alaska*).

“This is a salmon skin storage bag. When I didn’t want something to get damp, I would put it in this. If I had matches, I would put them in here, also bullets and gun powder.”

5. Display sinew from the kit. Explain how sinew was made from an animal tendon.
6. Hand out sausage casings to the students and ask them to practice the waterproof stitch on a piece of sausage casing. If needed, remind students that they can refer back to the illustration for waterproof stitch on page 95 in *Secrets of Eskimo Skin Sewing*.
7. Explain that while their salmon skins are in the tanning solution, they have time to actually create a waterproof amulet bag using the traditional waterproof stitch. (NOTE: If unable to locate some dried beach grass, use this traditional method as the welt, but if teacher cannot locate any dried grass, then *a piece of raffia will work fine.
8. Optional- the students can experiment with their amulet bag to determine if it is waterproof by putting a piece of paper in the bag. If paper came out wet, ask the student what they thought they could have done to make bag waterproof?

Class 6:

1. After the recommended time, ask the students to take their skins out of the tanning solutions.
2. Have the students rinse the fish skin several times and then wring out excess water, and nail or staple to a board to dry.
3. The drying process usually takes twenty four hours.
4. During the next class, students can remove their skins from the board and compare them to the other student’s finished product.

Class 7:

1. Allow time for the students to finish their waterproof amulet bag and put their bag through the waterproof test.

Optional classes for salmon skins:

- Tanned salmon skins could be saved to later create clothing for their doll. (One of the last lessons created in this kit, utilizing all the resources and lessons included in this kit for a final project-making a doll.)
- Make a fish skin wallet, or use fish skin to cover a wallet.
- Make a fish skin small bag, line inside of bag with material, add a button for closure.
- Make fish skin earrings, keychains, or zipper pulls, use beads to finish the edging.
- Make a fish skin basket, decorate with beads and dentalium shells.

Assessment:

- Students can explain how the Sugpiat and Eyak valued and respected subsistence resources.
- Students can define the term “subsistence” and how it means more than harvesting food.
- Students showcased their projects with many traditional and non-traditional ways to transform fish skin into a useable material.
- Students are able to explain and demonstrate the different ways of tanning fish skins using different tanning agents.
- Students can correctly say and point to the different Sugt’stun/Eyak words for king salmon, boots, and silver salmon.

Non-Traditional Tanning Instructions Using Liquid Vegetable Glycerin & Rubbing Alcohol

- Salmon Skins
- Water
- Two large metal or glass bowls
- Quart mason jar with lid or gallon size zip lock bags
- Liquid vegetable glycerin
- 99% rubbing alcohol
- Metal spoon
- Dawn dish soap
- Clean plywood
- Staples or thumbtacks

Preparing the skins

Cut the skins off a fresh salmon. Try to cut as close to the skin as possible without cutting through the skin. If you are not using the skins right away, freeze in a freezer bag. Next take a metal spoon, butter knife, or some type of blunt and scrape the flesh off the skin.

Tanning solution and process

Rinse fish skins in cold water. Afterwards, soak the fish skins in soapy water and let sit for the whole day.

Take a quart mason jar or a gallon zip lock bag, and fill with one part vegetable glycerin with one part 99% rubbing alcohol. Make enough solution to be able to submerge fish skins to ensure skins are all covered for 48 hours.

For dyeing and another form of tanning of skin, one can use hemlock bark. Simmer bark for three hours in water. Let cool before you immerse the salmon skins.

Drying the skins

Rinse with cold water. Wring the fish skins out. Put dime size amount of Dawn soap on flesh side of skin and stretch out, hold with staples, tacks or small nails. Leave for one day. Flip side over, and let dry completely.

I'd like to give credit to Alutiiq artist, June Simeonoff Pardue. She was born in Old Harbor, Kodiak Island and has been practicing Alaska Native art since an early age. It took her 5 years to develop a tanning solution before she could design and hand sew salmon skin bags, slippers, and a jacket trimmed with sea otter, which can be viewed at the Alutiiq Museum in Kodiak, Alaska. June has taught a variety of Alutiiq crafts in over 20 locations in Alaska and has been carrying on Alutiiq traditional beadwork, skin sewing, and grass weaving since 1964.

Traditional Tanning Instructions Using Alder Bark (Secrets of Eskimo Skin Sewing)

- Salmon Skins
- Alder bark
- Large bowl or pot
- Metal spoon
- Latex gloves

Preparing the Skins: Cut the skin off a fresh salmon. Try to cut as close to the skin as possible without cutting through the skin. If you are not using the skins right away, freeze in a freezer bag. Next, take a metal spoon, blunt butter knife or similar implement to scrape the flesh off the skin.

Mixing the Solution: Traditionally, alder bark was used for tanning and dyeing leather. This solution can also be used for tanning of fish skins.

- To prepare the alder bark for use, first you should scrape the bark into fine pieces, mix it with a little water and let the mixture stand for a day or so. (If you want to dye the fish skin, you would boil it a few minutes first.)
- Apply the tanning solution generously to the skin in the evening and let the skin soak overnight, stirring it once to make sure it is completely immersed. Shake the skins free of bark in the morning, then rub and pull with the hands in all directions.
- Stretch the fish skin as it dries, and rubbing skins will soften it. After it is rubbed all over once, set it aside to dry for a while, but not too long, or it will harden.
- Repeat rubbing and pulling it and keep this up until it is dry and soft.
- Once it dries the smell goes away.

Traditional Tanning Instructions Using Brains or Eggs (Deerskins into Buckskins)

- Salmon Skins
- Brains –half to one pound of moose or deer (or buy beef/pork brains at meat department)
- Egg Yolks- 1 dozen
- Metal spoon
- Latex gloves
- Dish soap
- Clean plywood
- Staples or thumbtacks

Preparing the Skins: Cut the skin off a fresh salmon. Try to cut as close to the skin as possible without cutting through the skin. If you are not using the skins right away, freeze in a freezer bag. Next, take a metal spoon, blunt butter knife or similar implement to scrape the flesh off the skin.

Prepare one of the tanning solutions (Brains OR Egg Yolks):

- **Brain solution:** Take anywhere from half a pound to a full pound of fresh or thawed out brains and mix with a cup of hot water. Mash the brains with your fingers into a paste, or use a blender to liquefy. The goal is to make your solution soupy, not lumpy.
- OR-
- **Egg solution:** Beat one dozen egg yolks

-FOR EITHER TANNING SOLUTION-

- Fill a two to five gallon container, with approximately half a gallon of bath temperature water and mix in the tanning solution. The heat will help the solution soak in faster. NOTE: If it's too hot for you, it's too hot for the fish skins.
- Submerge the fish skins in the solution, sloshing around until they are completely coated with the dressing. The dressing needs to soak into every pore and fiber of the skin. At this point you can roll up each fish skin fillet and then immerse this little package into the dressing. You can keep skins in dressing for twenty minutes to overnight. Cover the container to keep out bugs or flies.
- When you think the skins have completely soaked up the dressing, take them out. Wring each of the skins to get as much of the dressing off as you can. Wash the skins with Dawn dish soap and well. Wring out the water as best as you can. Use a paper towel to help wring out tanning solution and water. At this point, tack onto a board to dry. On each fillet, rub a drop of Dawn soap on it to help get rid of fish smell. You can stretch and pull as it is drying to get more of a leather feel to the fish skin- this process may take up to eight hours.
- Good luck and have fun!

Traditional Tanning Instructions Using Urine

- Salmon Skins
- Metal spoon
- Latex gloves
- Dish soap
- Clean plywood
- Staples or thumbtacks
- Urine collector -similar to this 3D model
<https://sketchfab.com/models/44d75d35f28443368c75edbeef98649b?ref=related>

Preparing the urine: We only want the best and cleanest urine, so drink lots of water. Use a gallon jar to collect urine and put plastic wrap over it because you want to trap the ammonia in the solution. Later you will mix this with equal parts of water. It will take a week or two for the ammonia to begin forming in the urine.

Preparing the Skins: Cut the skin off a fresh salmon. Try to cut as close to the skin as possible without cutting through the skin. If you are not using the skins right away, freeze in a freezer bag. Next, take a metal spoon, blunt butter knife or similar implement to scrape the flesh off the skin.

Mixing the Solution: Mix equal parts urine and water in an airtight container. Immerse the fish skins and be sure to have enough solution for the skins to float freely. Use a large Rubbermaid tote or a large Tupperware container.

Cleaning the Skins: The skins should change from being soft and gooey to rubbery as it sits in the solution.

- Stir the skins and solution every day.
- The skins will take 10-30 days to cure.
- Once finished, the skins should feel like a rubber glove.
- Remove the skins out of the solution and wash thoroughly with dish soap several times and rinse well between each washing. Suggest scented dish soap to help get the smell out. Traditionally it was just rinsed and washed with water. Once it dries, the smell goes away.

Drying the skins:

Lay the fish skin out on a clean piece of scrap plywood and staple or tack down. Dry completely.

FIGURE 46. Alaskan seamstresses employ several different stitches to sew intestines into garments. Some stitches incorporate grass, which strengthens the seams. ILLUSTRATION BY FRANK KAZMEROWICH.

