

CLOTHING: ALL ABOUT SPRUCE ROOTS GR: 3-5 (LESSON 8-10)

Elder Quote/Belief:

Spruce roots were strong and woven so tightly that it made a basket or a hat waterproof. I have read that the Chugach would put fish eggs in a spruce root basket filled with water and hot rocks. This basket was their cooking pot for their fish eggs! My ancestors were so creative!

-Mary Babic/Cordova



I will try any art form once. This small spruce root basket I made will be my hummingbird basket. There is so much work to building these baskets, even my small hummingbird basket. I can now say I wove with spruce roots once in my lifetime!

-Virginia Lacy/Cordova.

Grade Level: 3-5

Overview: Hats are essential in Chugach's cool, wet weather. Chugach people created a variety of different hats from natural materials. Warm, water resistant hats were sewn with bird and animal pelts, hunting visors were carved and steamed from bent wood, and waterproof hats were woven with spruce roots.

Not only did these hats provide protection from the weather, they also represented a person's place in their community. A hat's material and decoration reflected the person's status, age and gender. Beautifully constructed spruce root hats, bone, beads and ivory jewelry, and tattoos gained respect and admiration. Spruce root hats were symbols of power and success. They were considered a valuable object and were passed down through families.

There are many traditional uses for spruce roots – birch baskets, canoes, fish traps, a variety of lashings, baskets, and hats made out of woven spruce roots. This lesson’s focus will be on the spruce root weavings used for hats and baskets.

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.

Lesson Goal:

To become aware of the materials that were available to the Chugach people for weaving spruce root hats and explore their properties.

The Chugach Sugpiat and Eyak people were very creative in their development of hats. They discovered that woven spruce roots made a waterproof head gear, which was necessary for the wet and cold climate of the Chugach region.

Lesson Objective(s):

- Students will learn what spruce roots are by seeing them and touching them.
- They will hear the words “warp” and “weavers”, and learn what these words have to do with spruce root weaving.
- Students will hear how spruce roots were woven to make hats.
- Students will learn spruce root weaving pattern using yarn for weft and a plastic container for warp.

Vocabulary Words: Sugt’stun Dialects

English:	Prince William Sound:	Lower Cook Inlet:	<u>Eyak:</u>
Spruce root hat	awirnaq		Geets’ch’iyahd
Spruce tree	napaq	neguhuahtuq	Lis, AdAlis

Materials/Resources Needed:

- At least two different colors of yarn if you wish to weave a pattern. (The larger the yarn the better for the young students). Sample size yarn is included in this kit.
- Plastic containers-such as empty yogurt cups, cottage cheese containers, or margarine tubs. (Or plastic containers from the deli).
- Plastic darning needle.
- ANKN website – Digging and Preparing Spruce Roots lesson <http://ankn.uaf.edu/Curriculum/Units/spruce.html>

In Kit:

- Spruce root samples
- DVD “Tracing Roots” Delores Churchill and the Hat of Long Ago Person Found

Books/Booklets:

- Alutiig Museum Archaeological Repository - *Inartalicirpet-Our Weaving Ways*
- *Ravenstail Weaving Patterns and Projects Ancient and Contemporary* Revised 2011
- *Crossroads of Continents*
- *The Alutiit/Sugpiat-A Catalog of the Collections of the Kunstkamera*
- *Illustrated Instructions for Twined Spruce Root or Cedar Bark Basket and a Model Spruce Fish Trap* by Mary Lou King, Juneau, AK.

Other books –not included in kit:

- *Cedar* by Hillary Stewart p.171-172.

Website:

- Digging Spruce Root https://www.youtube.com/watch?v=74CyNo_K2M

Teacher Preparation:

- Invite an Elder/ Recognized Expert who has led a traditional lifestyle in your region. Ask him or her to share subsistence values, experiences, and stories. Ask the Elder to share their knowledge of these traditional materials used for weaving hats or baskets.
- Review with the students the proper ways to show respect for the guest speaker.
- Review ANKN website lesson- Digging and Preparing Spruce Roots <http://ankn.uaf.edu/Curriculum/Units/spruce.html>
- Review page 79 and 80 from the booklet, *Ravenstail Weaving Patterns and Projects* (in kit). Weave a prototype of the basket for the students to see their project for this lesson.
- Make copies of the attached step-by-step photos on “All About Spruce Roots” and the detailed weaving instructions for each student.
- Cut one piece of yarn 5 or 6 feet long for each student. It is much easier to weave if the yarns pieces are not too long, especially the beginning piece when a student is just learning to weave. As students become experienced the yarn can be cut into longer pieces. The length can also be estimated for how much will be needed for each part of the pattern.
- With kitchen type scissors, cut the carton in strips. Cut one carton per student. Do not cut all the way to the bottom of the container, leave approximately ¼”. If you cut all the way to the bottom the container will lose its shape. The width of the strips should be as even as possible. Young children do well with 1” strips.

Opening:

Today, we will be learning about spruce roots. We will learn where to locate and gather the spruce roots. We will find out about the properties, such as; the strength and why our ancestors had chosen to traditionally make, and continue to make, hats with these roots.

First of all, do you know what a spruce tree looks like? (Show students a picture of a spruce tree.) Display a branch from a spruce tree and a branch from a hemlock tree. Point out and discuss the difference between the two. One is pokey and sharp and the other is smooth. We are talking about roots from the sharp and pokey tree. Show the quick video on gathering spruce roots https://www.youtube.com/watch?v=74CyNo_K2M

Now, show the students a root from a spruce tree. Ask the students why they think the people chose the roots from the spruce tree? Could it be because this branch seems stronger than the other? Explain that our ancestors used these roots for making waterproof hats that provided protection from the weather. Similar to a baseball cap, the spruce root hat kept the water out of your eyes. They would weave these roots together tightly, making it waterproof. Today, we will learn this weave they used on their hats.

Activities:

Class I: Introduction to spruce roots

1. Show the students the photographs and read about their weaving traditions, about the ancient weavings, raw materials, and traditional uses of spruce root woven objects out of the book, *Inartalicirpet Our Weaving Ways*, pp. 2-9.
2. Show students pictures and photographs of the spruce root hats out of the book *Crossroads of Continents* pp. 12, 58, 69, 76, 92, 165, 286-293.
3. Show students photographs of the spruce root hats out of *Alutiit/Sugpiat* pp. 364-385.
4. Pass out the spruce roots located in the kit.
 - a. Sample 1- is a coiled root with bark still on
 - b. Sample 2 – is a spruce root weaver
 - c. Sample 3 - is a spruce root weft
5. Show the students “*Tracing Roots*” DVD with Delores Churchill (approx. 35 minutes).
6. Explain the project learning for the next few days- gathering, preparing, and weaving
 - a. <http://ankn.uaf.edu/Curriculum/Units/spruce.html>
 - b. Examining and practicing a traditional weaving pattern for a spruce root hat using yarn and a plastic container.
 - c. Give each student copies of the handouts “All About Spruce Roots” photos and the detailed weaving instructions found in *Illustrated Instructions for Twined Spruce Root* booklet

Class II-III: Weaving project- Twined basket using yarn for weft and a plastic container for warp

Pictures that go along with these directions for weaving project can be located in the booklet, *Ravenstail Weaving Patterns and Projects* found on pages 79-80.

1. Pass out the supplies to each student. One piece of yarn and a plastic container.
2. Ask the students to fold the yarn in the middle and place it around one strip (warp) of the carton.
3. Next take the yarn on the left and place across the warp, over the yarn in front or to the right and to the back, then around the back of the next warp and out to the front.
4. Continue this process all around the basket. When the yarn runs out, simply take both ends to the inside and tie a knot. Then, to add more yarn, cut a length of yarn, fold it in the middle and insert it in the next warp.
5. For patterns, it is easy to make colored bands by tying off one yarn and adding another color. To make a checker pattern, tie two different colors of yarn together and add them as you would a single strand. (Or you can make your own designs.)
6. Finishing: The weaving needs to be anchored some way at the top so that the weaving cannot be slipped off unintentionally.

- a. Some cups may have a lip that may hold the weaving on.
 - b. Or making a hole very near the top of each strip with a paper punch, then threading the yarn on a needle with a large eye and sewing around in various ways, works.
 - c. As you practice, you might discover a different way to secure that you like better for finishing the top.
7. If possible share the finished projects in a display case with the traditional materials for all the students to see.

Assessment:

- Students can identify spruce roots are by seeing and touching them.
- Students can explain the words “warp” and “weavers”.
- Students can explain how spruce roots were woven to make hats why roots were used as a traditional waterproof material.
- Students can explain the traditional spruce root weaving pattern using yarn for weft and a plastic container for warp.
- Students can correctly say and point out the Sugt’stun/ Eyak words for spruce root hat and spruce tree

All About Spruce Roots

Step One:



Gathering Spruce Roots

- Look for a forest of healthy spruce trees 30 to 50 years old. Healthy trees are dark green in color and have very sharp needles.
- Roots are best in early spring as soon as the frost disappears, usually in late April or early May, and possibly through early June if the weather is not too hot or dry. Dig a few inches down in the moss or dirt looking for straight reddish or orange roots, the ideal size is the size of a pencil.
- When the bark is removed later, the root will be quite a bit smaller than it looks when you pull it from the ground.

Step Two:



A Beautiful Coiled, Spruce Root

- This root was carefully pulled from the ground.
- Long roots are what you are hoping for.
- Cut the root off when it becomes too big, goes too deep or changes its size quickly.
- Bundle the root in a circle with the ends tucked in.
- It is important to untie the root quickly after heating the bark off. Do you notice the reddish color in the roots?

Step Three:



‘Debark’ the Spruce Roots

- Build a hot fire in a safe place, not in the woods.
- Place one bundle of roots on the end of a stick and hold it over the hottest part of the fire and heat the root until it sizzles.
- Turn the root many times so it doesn’t burn.
- When root is hot, with leather gloves, very quickly untie the bundle, and pull it through a forked stick.
- Place your debarked root in a clean plastic bag. Wash your roots in clean water, rain water preferably.

Step Four:



Make Spruce Root Bark Free

- If there is still bark stuck to the root, scrape gently with your fingernail.

Step Five:



Split the Spruce Roots

- Roots are easier to split if they are done soon after gathering.
- Do not keep them damp in a plastic bag for more than a couple days as they get slimy and mold.
- Look closely at your root, find the largest end, and then identify the line of the root in the middle. It looks like a dotted line down the middle of the root.
- The split will go right down along the dotted line.

Step Six:



Prepare the Spruce Roots

- Soak and wrap the split roots in loops so they are ready for weaving.

Step Seven:



Weavers and Wefts

- Wrapping and soaking the weavers (coiled roots) and wefts (short straight roots) to be ready for weaving.



Aren't they a beautiful color?

Step Eight:



Begin to Weave

- To begin weaving the spruce root basket, refer to the detailed directions from *Illustrated Instructions for Twined Spruce Root or Cedar Bark Basket and a Model Spruce Fish Trap* by Mary Lou King, Juneau, AK.

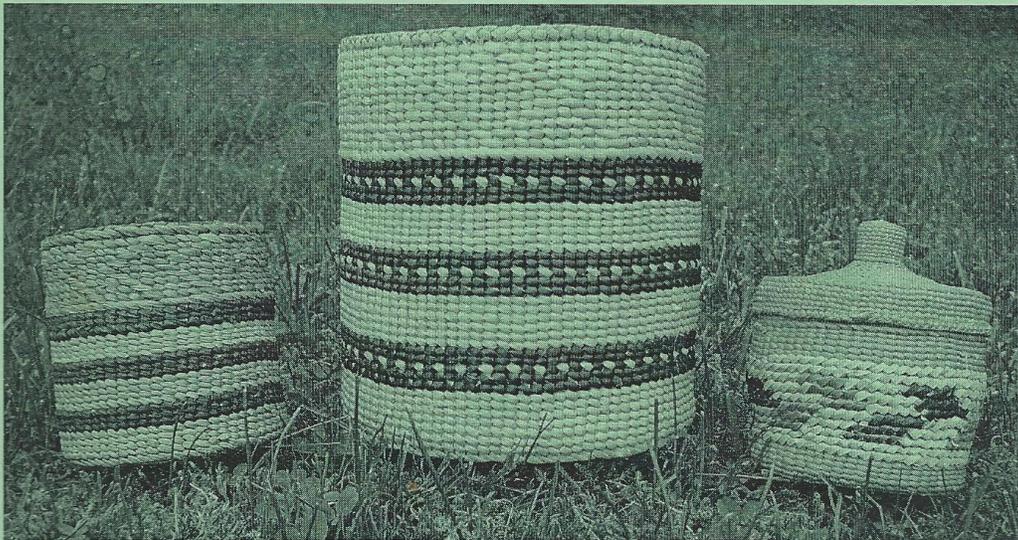


A replica of a traditional spruce root hat located at the Ilanka Cultural Center in Cordova, Alaska.



**Traditional Chugach spruce
root hat located in the
Berlin Museum**

**ILLUSTRATED INSTRUCTIONS FOR
TWINED SPRUCE ROOT OR CEDAR BARK
BASKET AND
A MODEL SPRUCE FISH TRAP**



By
Mary Lou King
Juneau, AK
Revised 2009

- 5 or 6 **LONG 1/4" Red Cedar Warps** additional to be used as needed while weaving the bottom of the basket. The length of each added warp will be determined when the warp is needed (1/2 inch longer than the ends of the warps existing in the started weaving).

Weft (Strands with which you weave)

- 10 **Split Yellow Cedar Wefts** Long strands of 1/4 inch wide. This is an estimate as the length of each strand will determine how many will be needed.
- 6 **Yellow Cedar Wefts** Long dyed black strands 1/4 inch wide.

WEAVING INSTRUCTIONS

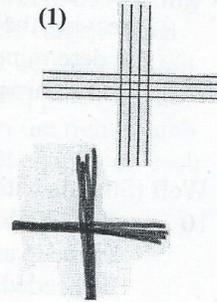
WHEN YOUR MATERIALS ARE ALL PREPARED AND YOU ARE READY TO START WEAVING: Place just the materials you are about to use (8) 12 inch warps, either cedar bark or spruce roots depending which materials you intend to use) in water just long enough to be flexible while weaving. **Too much soaking weakens and discolors the materials**, while materials that become too dry will crack and break. As you continue to work with the materials while weaving, keep them damp by dipping your fingers in water and running your fingers down the strips to keep them flexible. Some weavers prefer to spray their work with a squirt bottle of water. The completed or woven part of the basket should be kept as dry as possible while you continue to weave.

Checklist of reminders for making beautiful baskets

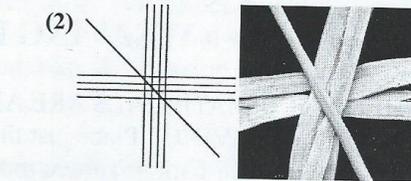
1. Do not soak your materials too long-- they will become discolored/weakened
2. Dry all of your materials when not weaving-- they will discolor and mold
3. Do not let your damp materials touch metal-- they will turn black
4. Use extra care with dyed materials-- they will bleed onto other parts of your weaving-- do not let the loose ends touch other parts of your weaving--keep the surrounding weaving as dry as possible-- wash your hands often
5. Do not over-work your materials-- scrape only enough for even thickness and flexibility-- don't shred your materials
6. Cover metal forms with plastic bag or wrap-- metal turns materials black
7. There should be no spaces between warps-- add another warp every time there is room for one

Begin Weaving

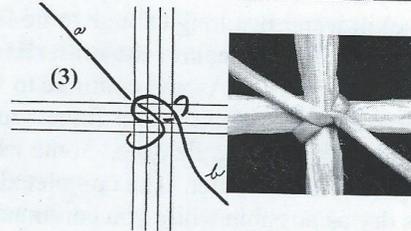
1. Place the eight **12 inch** dampened warps in groups of four, loosely piled on each other (not neatly stacked) and crossed in the middle. In the drawing, the warps are separated only to show the number of warps Do not separate the warps when weaving until the second row (Instruction #9).



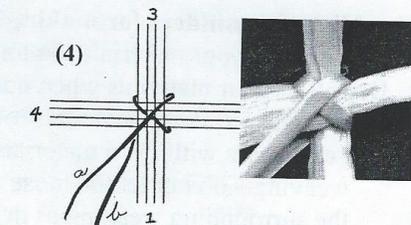
2. Place one damp long weft diagonally across the center of the eight warps.
3. Turn the piece to the back or upside down, then place one end of the weft strand (a) over the other strand (b).



3. Turn the piece to the back or upside down, then place one end of the weft strand (a) over the other strand (b). **Pull very snug being sure to stay in the center of the warps. All of the warps will be stacked tightly together.**

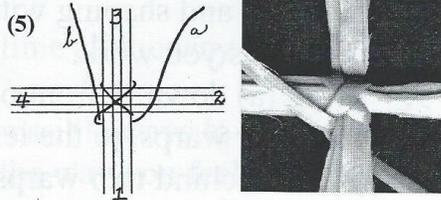


4. Turn the piece back over to right side up, then bring (a) up from behind making a cross or X over the top. (b) is under and to the right of (a). **Pull tight**

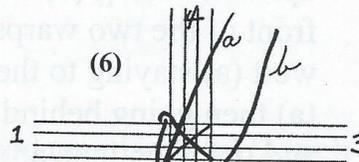


Row one

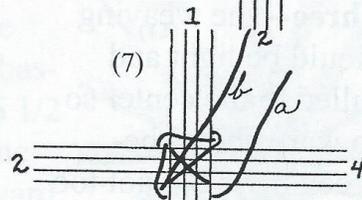
5. Place (b) up. Then bring (a) down to the left of (b) and behind the first four warps and up.



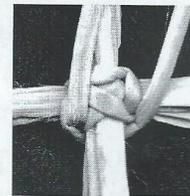
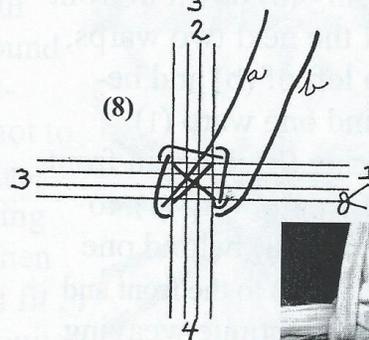
6. Bring (b) down in front of four warps, to the left of (a) then behind four warps and up.



7. Turn the weaving to the left, then bring (a) down in front of the next four warps, to the left of (b) and behind the next four warps and up.



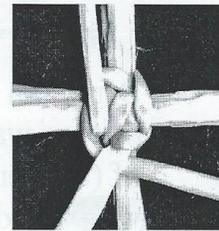
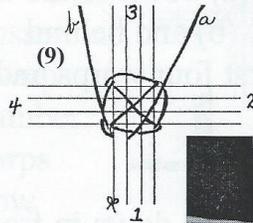
8. Repeat #6 and #7. Tie a piece of string or yarn to the bottom of the first warp to identify the beginning of each new row.



This style of weaving is called **twining**.

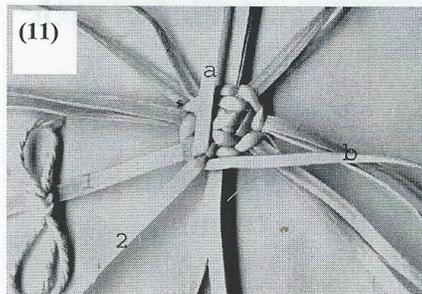
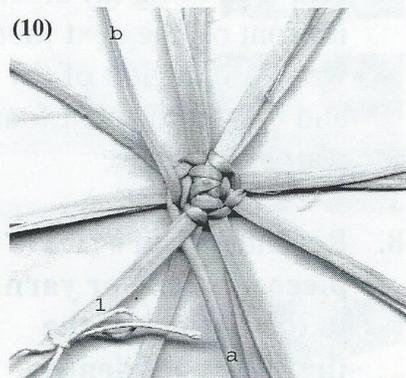
Row Two--Keep the weaving flat by pinching and shaping with your fingers as you work.

9. Bring (a) down in front of the next four warps, to the left of (b) and behind **two** warps and up. Next bring (b) down in front of the two warps and weft (a) staying to the left of (a) then going behind the next **two** warps and up. Continue around the row twining over two warps — eight sets of two warps.



Row Three--The weaving should be tight and pulled to the center so no warp shows between rows but not too tight to make the weaving buckle.

10. Bring (a) down in front of the next two warps, to left of (b) and behind one warp (1).
11. Bring (b) down in front of single warp (1), to left of (a) behind one warp (2) to the front and up. Continue weaving one warp at a time around row. (16 warps)



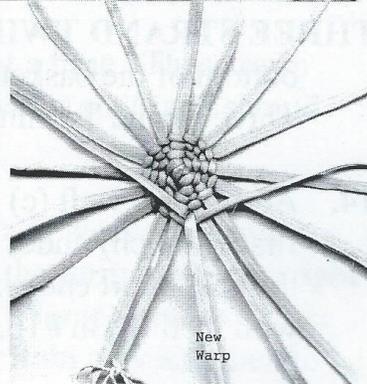
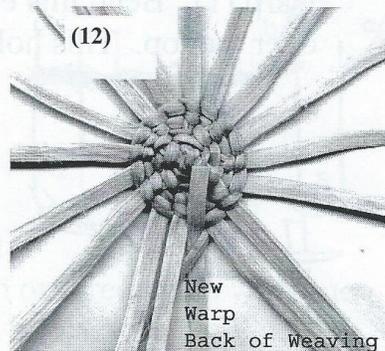
Row Four

Twine around one warp at a time all the way around.

Adding Warp: There are many possible ways to add warps to your work. You should add the way you feel most comfortable with and looks the best. One way follows in Row Five.

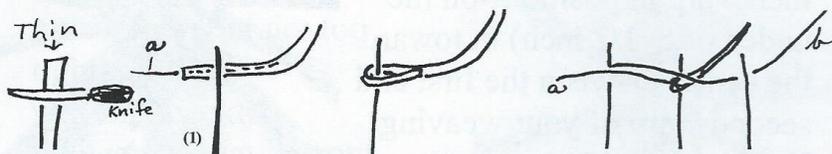
Row Five

12. One warp at a time method: Add one damp 6 1/2 inch warp between existing warps in every place where there is room for one. Numerous warps will be needed. while weaving the bottom of the basket. To do this, place one 6 1/2 inch warp in position--on the under side (1/2 inch) in toward the center between the first and second warp of your weaving. Hold it in position with your left hand while twining around it in the same way as the attached warps. Be careful not to pull it out as you work. Continue around the row weaving around one existing warp then adding one. The warps will fit in and look better if they are quite wet and flexible when added.



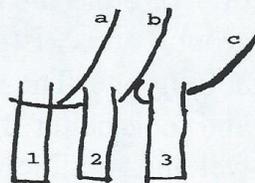
Continue weaving around one warp at a time (Add more warps wherever there is enough room to insert one--the warps should touch or almost touch each other) until the weaving measures 3 inches across. This is the size of the bottom of the basket to exactly cover the bottom of the 3 inch form suggested in the beginning of the instructions.

13. **Add new wefts when needed.** To do this take a sharp knife and thin one inch on one end of the new weft to be added. Place this thinned end on top of short weft (a) with approximately 1/2 inch extending on the left beyond warp (1). Bend this end over the warp and bring weft (b) over the top. This holds the new weft in place.

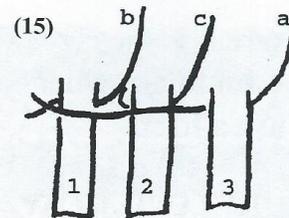


THREE STRAND TWINING--The turning row from the bottom of the basket to the vertical sides is woven with Three Strand Twining.

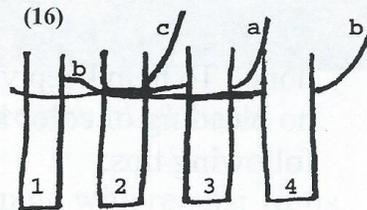
14. Add a third weft (c) (thin the first 1/2 inch) under warp (3) the 1/2" short end will travel with weft (b) in #16..



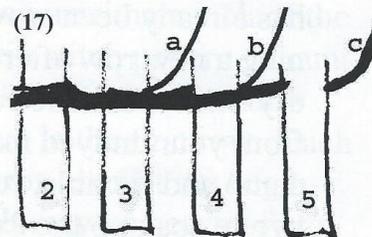
15. Bring weft (a) down below wefts (b)&(c) in front of warps (1)& (2), and behind warp (3) to the front and up.



16. Bring weft (b) & short end of weft (c) down below wefts (c) &(a), in front of warps (2)& (3), behind warp (4) and to the front and up.



17. Bring weft (c) down below wefts (a)&(b), to the front of warps (3)&(4) behind warp (5) and up. Continue going over two warps and behind one around row.



Shorten and thin the extra weft leaving enough to weave it two or three times with one of the two wefts so it is locked in place.

Weave two rows over one warp at a time. These rows should be pulled tighter than previous rows and should begin to turn down.

Place the weaving over the form and weave two more rows weaving tight enough to fit the form but not so tight that it cannot be pulled off easily. Some weavers prefer to weave off the form, just trying it on now and then to be

sure it is the right size and shape, then placing it on the form to dry when not weaving. And some weavers never use a form.

BLACK BAND ROW--Most dyes used on weaving materials will continue to lose their color on your hands and other weaving materials no matter how much rinsing has been done. To help keep your weaving clean and bright with no bleeding of color into adjacent rows try some of the following tips:

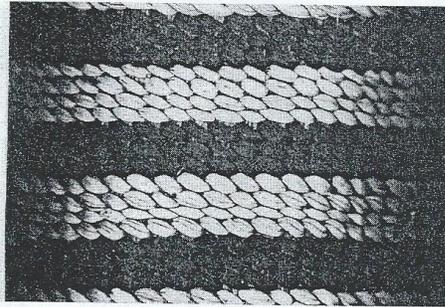
Wash your hands often, keep the area of your basket that has already been woven as dry as possible, before beginning a new row after a colored row let the colored row dry some, soak the colored material in separate water from your undyed materials. When the dyed material is damp and flexible, run it through a paper towel a time or two to soak up the excess water and dye, keep paper towels handy to wipe things up and possibly to hold it, or some other material, between the dyed weft and other parts of the basket as you weave. On the other hand you may be lucky and have colored materials that do not bleed on things.

Replace the two weft strands with two dyed black weft. **Weave three rows in black.** (See Page 10 for adding or replacing weft) Black rows are narrower than natural color rows on the old baskets.

Replace the black wefts with regular wefts and weave **four rows.**

Black band--Weave another **three row** black band.

Replace the black wefts with regular wefts and weave four rows.



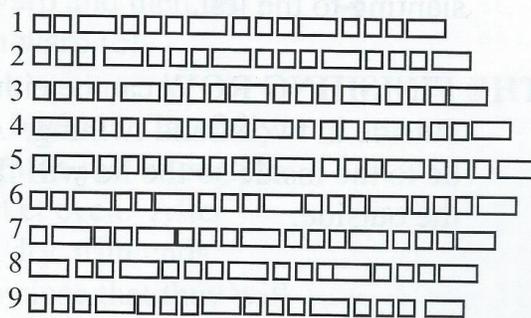
Black band--Weave a third, three row black band.

Weave a row of three strand twining with regular wefts.

SKIP STITCH TWINING--The top approximate inch of the basket will be woven with the skip stitch pattern. Count the number of warps in your basket to determine how many skip stitches you will weave in the first row. Each segment of the pattern uses 5 warps (except the beginning segment that uses only 4). It may be necessary to add warps or get rid of some by weaving two together to come out even.

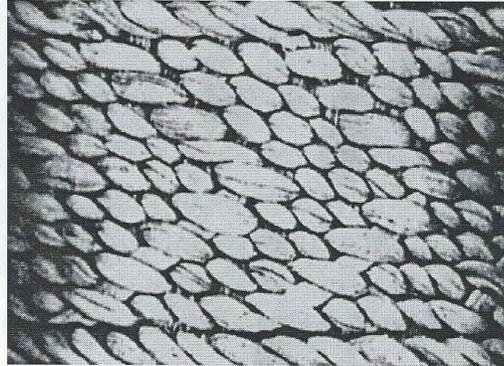
1 Warp 2 Warps

Row One: Start by weaving over two single warps, one at a time
*then weave over two warps together (skip stitch), then three single warps then two warps together, repeat from



* around the row. The row should end with two warps together (skip stitch).

The skip stitch pattern will show more if you place an additional short piece of bark under the skip stitch as you weave.



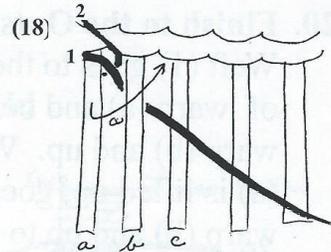
Row Two: Weave three single warps, then two together to end of row. Continue the pattern with the skip stitches slanting to the right for **five rows**.

Row Six: The skip stitch pattern begins to slant to the left rather than the right. The first segment of the pattern may require some adjustment so that the skip stitch begins to slant to the left. Either add a warp or twine two together or just have two warps between the skip stitch; whatever makes your pattern work.

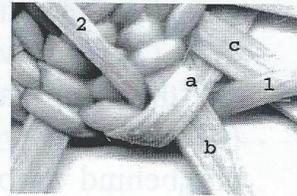
Rows 7 through 9: Continue the pattern with the skip stitch slanting to the left.

THE FINISHING ROW can be either to the inside or to the outside in two strand twining. A lidded basket needs to be to the inside so the lid will fit on and the lid finished to the outside.

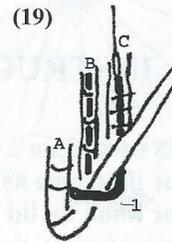
18. **Finish to Inside** Weft (1) goes to the front of warp (a) and behind warp (b). Warp (a) is pulled up over warp (b) and inserted above weft (1) between warps (b) and (c) and to the inside of the basket.



Weft (1) is then pulled up locking warp (a) in place. Bring weft (2) over pulled up warp (a), warp (b) and below weft (1) then behind warp (c) and to the front. Continue weaving in this way until just one warp and two wefts remain.



19. **Using a large needle with a blunt end and a large eye, secure the two wefts and one warp remaining in #18 above.** The illustration shows the right weft threaded up through the weaving on warp (b) and the left weft (1) threaded over the last bent to the center warp and then up through the weaving on warp (c).



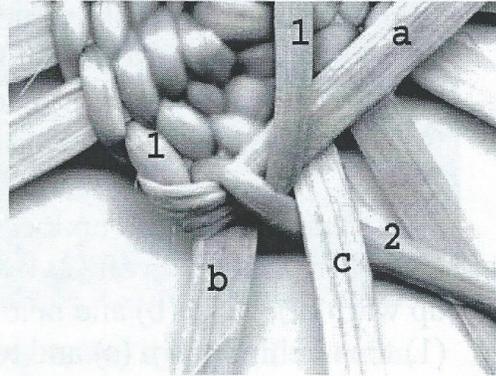
Final step to finish the basket: Carefully pull on each warp to tighten just enough to make the top of the basket even. After warps are dry or nearly dry, trim ends evenly close, but not so close that they will pop out, of the weaving.

20. Finish to the Outside

Weft (1) goes to the front of warp (a) and behind warp (b) and up. Warp (a) is lifted up, goes over weft (1) and up to the outside of the basket.

Weft (2) goes over warp (a) (that is up), and warp (b) and below weft (1) and behind warp (c) and up. Continue to end.

Follow instructions for ending #19.



INSTRUCTIONS FOR A RATTLE TOP LID

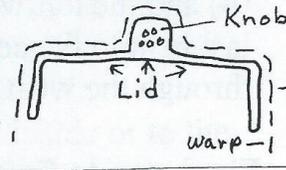
Materials needed for a rattle top lid

Form for lid (same as for basket)

Form for knob on lid

Rattling material: pebbles, buttons, beads

8 warps for lid knob plus lid: length determined by size of knob plus lid plus an inch or inch and one half extra on each end.



8 warps for trap door to hold rattles in the knob: length same as lid minus diameter of knob.

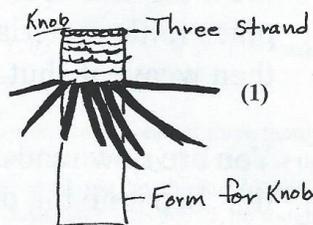


2 or 3 long wefts

Weaving Instructions for Rattle Top Lid

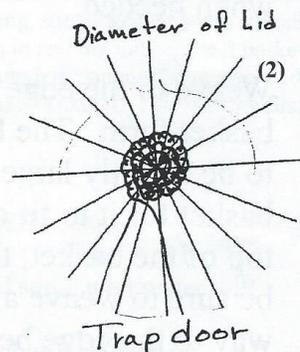
Begin weaving the lid the same way you begin a basket. (See Page 6)

1. Weave knob to width you want it to be— adding warps where needed so there are no gaps between warps.



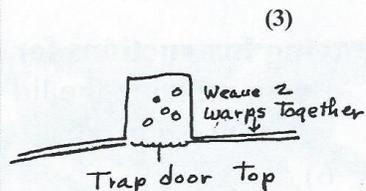
Weave one row of three strand twining. Place the weaving on the form for the knob and weave as many rows as it takes to make the knob the height you want it to be.

2. Now start the trap door the same way you start a basket. Weave this to the exact diameter as the knob and with the exact, or as near as possible, number of warps as the knob. Place the knob, with its warps spread out flat on the under side of the trap door woven in (1) above.



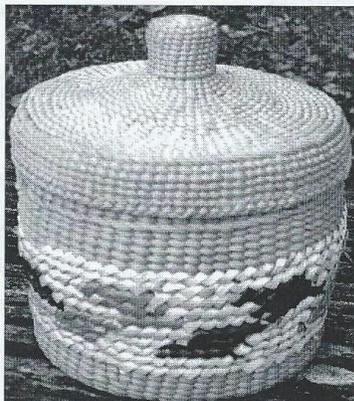
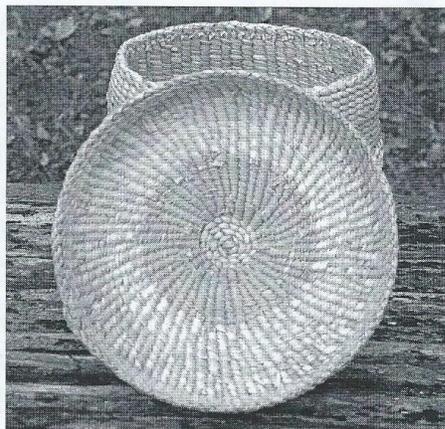
Using one set of wefts (the second set can be trimmed to a shorter length and trimmed off after they are secured when the two pieces have been woven together) begin weaving the two pieces together. Do this by placing one warp from the knob on top of one warp from the trap door (you will be weaving over two warps together). If you do not have the same number of warps in each piece, then weave a single warp evenly spaced to take care of the extras.

3. A few stitches before closing the knob and door together, place rattle materials inside, then weave it shut.



You are now ready to continue weaving the brim of the lid. Separate the double warps as needed so you will not have gaps between warps. Begin to add additional warps when needed.

Weave to the edge of the basket form. The lid needs to be slightly larger than the basket for it to fit over the top of the basket, therefore be sure to weave all the way to the edge before weaving a row of **three strand** and making the turn.



Weave as far down the form as you want your lid to fit over the outside of your basket and do a finish to the outside (See Page 16).

WEAVING INSTRUCTIONS

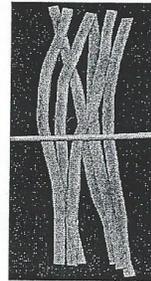
Checklist of reminders for making beautiful baskets

1. Do not soak your materials too long-- they will become discolored/weakened
2. Dry all of your materials when not weaving-- wet they will discolor and mold
3. Do not let your damp materials touch metal-- they will turn black
4. Use extra care with dyed materials-- they will bleed onto other parts of your weaving-- do not let the loose ends touch other parts of your weaving--keep the surrounding weaving as dry as possible-- wash your hands often
5. Do not over-work your materials-- scrape only enough for even thickness and flexibility-- don't shred your materials
6. Cover forms, especially metal, with plastic bag or wrap
7. There should be no spaces between warps-- add another warp every time there is room for one

BEGIN WEAVING

1. Loosely pile the six **12 inch** dampened warps on each other (not neatly stacked). Place one damp long weft across the center of the six warps.

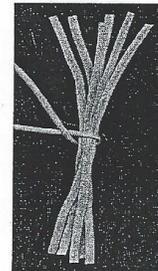
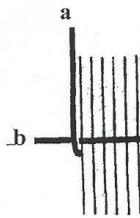
(1)



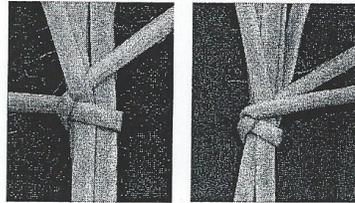
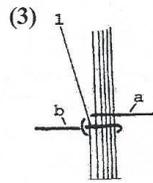
ROW ONE

2. Bring weft (a) around behind the 6 warps, go over the top of (b) and up. Pull on the weft until the bundle of warps are tightly together (not like the first illustration where they are separated to show what is happening.)

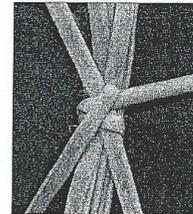
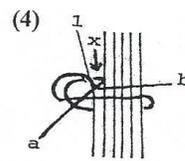
(2)



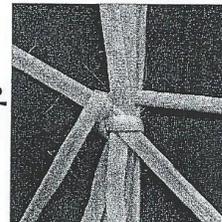
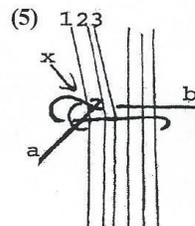
3. Take weft (a) with the shiny side to the front, behind warp (1). Pull very snug. Then take weft (b) in front of warp (1) and weft (a).



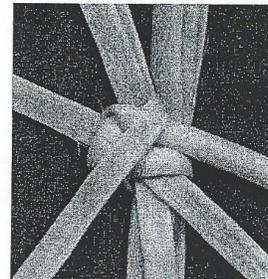
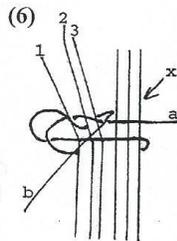
4. Bring (a) back over (b) making an "X" with the two shiny sides together. Pull tight.



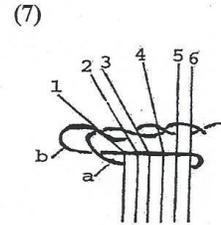
5. Weft (b) with shiny side to the front, goes behind warps (2 & 3).



6. Weft (a) comes down in front of warps (2) & (3) and below weft (b). Next weft (b) comes down over weft (a). The shiny sides of wefts (b & a) fit against each other and form an "X",

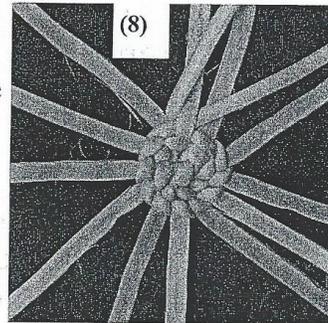


7. Bring weft (a) behind warp (4), then bring weft (b) in front of warp (4). This weaving is called **Twining**. Continue twining (behind then to the front of one warp, then behind and in front of two warps) around to the beginning.



ROW TWO

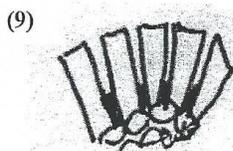
8. Twine around one warp at a time all the way around to the beginning warp. (Separate the two warps where there are two together in the first row). You will end up with 12 individually twined warps at the end of the row. It is sometimes easier to tell the beginning warp if you tie a single overhand knot on the end of the warp. **Weave tight enough so that no space shows between rows.**



ROW THREE

9. Twine around one warp at a time all the way around to the beginning warp. **As you weave it may become necessary, depending on the size of your roots to add warps where gaps develop between warps. Large roots develop gaps sooner than smaller roots.**

The warps should look like this:



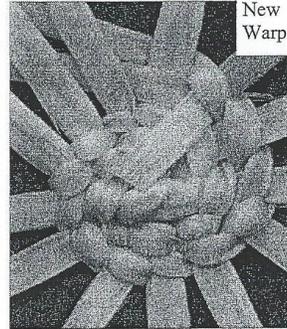
29

Not this:



ADDING WARPS

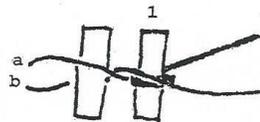
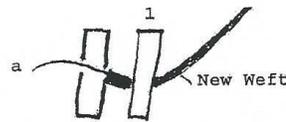
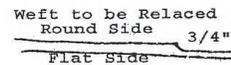
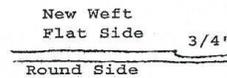
Place one warp, 1/2 inch longer than the existing warps, in position--on the under side of the weaving 1/2 inch in over the existing weaving toward the center, between the warps, where there is room. Hold it in position with your left hand while twining around it in the same way as the attached warps. Be careful not to pull it out as you work. Continue around row weaving around one existing warp then adding one where there is room.



Under Side of Weaving

ADDING WEFT

When the weft strand becomes too short to continue weaving add a new weft as follows: Take a sharp knife and thin 3/4 inch on the flat, not shiny side, from one end of the new weft to be added. Thin 3/4 inch on the top or shiny side of the weft to be replaced, in the part of the root where the new weft will be added. Place the thinned end of the weft to be added, on top of weft (a), the one to be replaced, when it is behind a warp (1). It should extend a little less than 3/4 inch to the left of warp (1). Then bend this short end back over warp (1) and bring weft (b) over the top to hold the new weft in place.



ROW FOUR AND ADDITIONAL ROWS TO OUTER EDGE OF BOTTOM OF BASKET

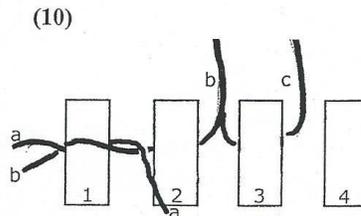
Continue weaving around one warp at a time, adding warps where there is a gap until the weaving measures the exact size for the bottom of your basket.

THREE STRAND TWINING ROW

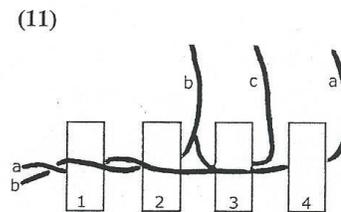
The turning row from the bottom of the basket to the vertical sides is woven with Three Strand Twining.

10. To add a 3rd strand, thin the last 3/4 inch from the round side of the weft to be added (c).

Place weft (c) behind warp (3) bringing the long end of weft (c) to the front between warps 3 & 4. The short end of weft (c) will travel behind weft (b) when it moves in step #12.

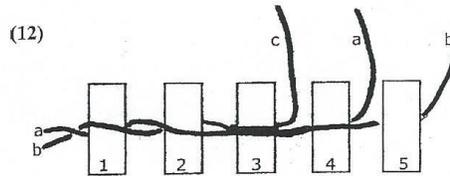


11. Weft (a) with round side to the front or facing the weaver, goes to the front of warps (2) & 3, and below wefts (b) & (c) and in where (c) comes out, then behind warp (4) and out to the front.

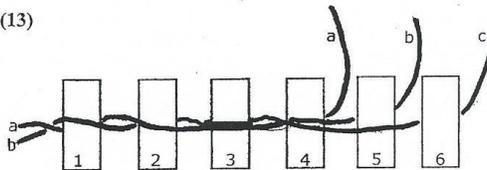


*In Three Strand Twining, the wefts go in front of two warps and behind one.

12. Weft (b), goes to the front, over the short tail of weft (c) to lock it in place then goes over warps (3) & (4) and below (c) & (a), in where (a) comes out, behind warp (5) and to the front.



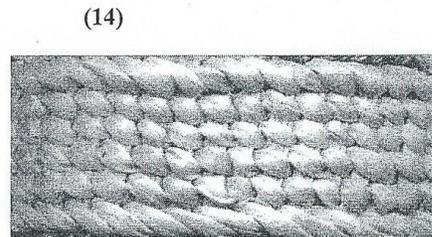
13. Weft (c) goes to the front of warps (4) & (5), and below wefts (a) & (b), in where (b) comes out, and behind warp (6) and out to the front.



Continue weaving around the basket to the beginning of the three strand. Shorten and thin the extra weft leaving enough to weave it two or three times with one of the two wefts so it is locked in place.

SIDES OF THE BASKET

14. Weave with regular two-strand for approximately 4 rows. Then weave one more row of three-strand.

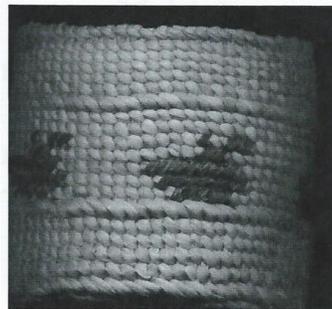


Preparation for Weaving False Embroidery pattern.



- A. Decide what pattern to weave. Look at old baskets or books with pictures. There are good patterns in Frances Paul's *Spruce Root Basketry* book. Your first embroidery project should be very simple.

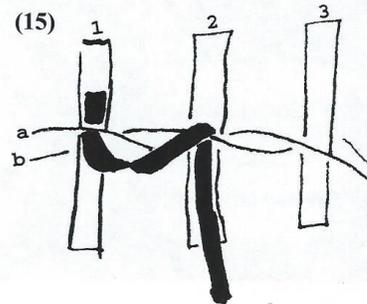
- B. To start false embroidery, split dampened dyed grass to a width slightly wider than the weft root, either with your fingernail or a needle. To use a needle stick the point of needle through the grass and into the surface below. Then pull the grass through the needle rather than pulling the needle through the grass.



Old Basket from Hoonah
Weaver Unknown

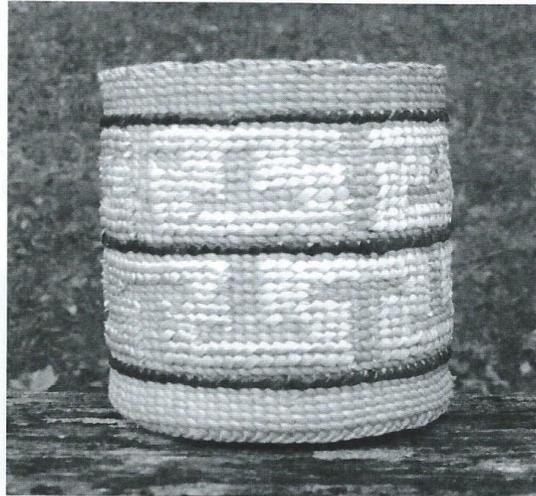
FALSE EMBROIDERY

15. Place the grass, shiny side to the back, on warp (1) [the one before the grass pattern begins]. Weft (a) then goes over the grass and warp (1), under weft (b), to the back of warp (2) and to the front.



The grass then goes up and around weft (b), as weft (b) comes in front and across warp (2). Weft (b) then goes under weft (a) behind warp (3) and to the front. The grass should be tightened by pulling straight down while keeping the two wefts snugly in place. Repeat this step to complete your pattern.

Weave one more row of three-strand twining and four more rows of two-strand twining.



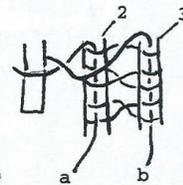
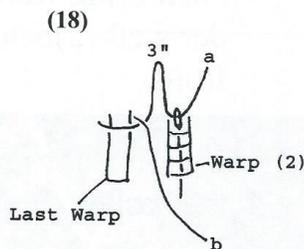
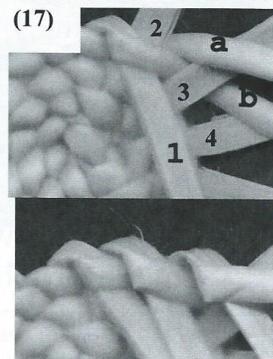
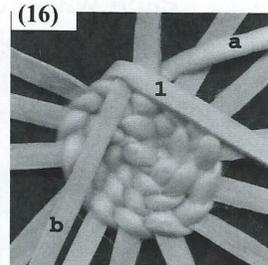
ENDING THE UPRIGHT BASKET

Finish To Outside

16. Bring warp (1) down to the front and over weft (b).

17. Weave weft (b) over warp (1), in front of warp (2) under weft (a), behind warp (3) and out to the front between warp (3) and warp (4). Be sure to tighten this weaving so that the warps are pulled down securely and evenly. Continue to the end of the finishing row.

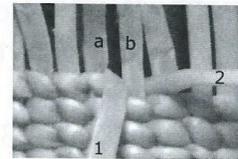
18. Trim the wefts to not longer than approximately 3 inches, then thin the last inch with a knife. Thread weft (a) on a blunt needle with a large eye, push down through three or four rows of weaving on what was the beginning warp (2). Tighten the weaving. Now thread weft (b) on the needle going over weft (a) and down (either warp (2) or (3) which ever looks best) through several rows of weaving and tighten the weaving.



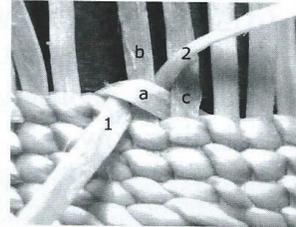
Finally go back around the top of the basket and pull each warp to make them even all the way around. Very carefully, trim the ends of the warps. They should be even all the way around. Do not cut too close as you do not want them to pop out from the weaving. Now trim all other loose ends and let the basket dry.

Finish to Inside

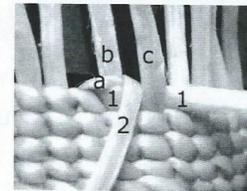
19. Bring weft (2) behind warp (b) and to the front. On the right side of warp (a) bring weft (1) over weft (2) and to the front (makes x).



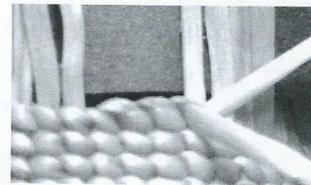
Now bring warp (a) over weft (1) over warp (b) under weft (2) and to the inside.



Next bring weft (1) over warp (a) under weft (2) behind warp (c) and to the front.



Continue these steps to the end of the basket. Be sure to pull the weaving very tight so that the weave looks like the weaving below. All of the warps should all be tightened evenly from the inside after the weaving is completed.



To finish pull last warp to inside then sew weft ends in with a blunt needle— see #18 on page 35.