



Exploring Wool and Fiber

Goals

Students will engage in the process of turning raw wool into a variety of finished products, and understand the everyday use and value of this agricultural product.

Essential Questions

- Where does wool come from?
- How can we make wool into something that we can use?
- What do we use wool for?

Enduring Understandings

- Students will understand that wool comes from sheep.
- Students will appreciate farmers and the products they create for our community.

Students will know

- The steps in wool processing

Students will be able to

- Perform tasks related to wool processing.

Learning Plan

- This unit will be a multi week project that builds on the previous experiences of past weeks and allows students to move through the stages of wool processing to make different projects.

Books:

- **Charlie Needs a Cloak by Tomie de Poloa**
- **Pelle's New Suit**
- **Woolbur**
- **The Goat in the rug**
- **Weaving the Rainbow**
- **The Pen that Pa Built by David Edwards**
- **One Little Lamb by Elaine Greenstein**
- **Feeding the Sheep by Leda Schubert**



Washing Wool

Materials: Raw wool, soap, small bins for washing wool, plastic tablecloth, large spoons or utensils for stirring, plastic bag for putting clean wool into, towels for spills

Instructions:

1. Observe the dirty wool and notice how it smells and feels. Explain that the sheep had a haircut (just like we have) and we can use their wool to make all sorts of things. Show students some examples of woolen things (mittens, scarf, etc).
2. Tell the children that the first thing we have to do is wash the wool. Set up small bins with warm water and soap for each child to wash the wool. You must be gentle while washing wool so that it doesn't felt, so demonstrate this for the children. If they don't want to get their hands wet or dirty, let them use the utensils to stir the wool in the soapy water.
3. After the children are done washing, put all of the wool into the plastic bag. Rinse it out after the lesson and lay flat on a towel to dry.

Dyeing Wool

Materials: Sandwich bags, cleaned white wool from previous week, white vinegar, food coloring, plastic bin to put bags of dyed wool in (they sometimes leak), example of something made of colored wool.

Instructions:

1. Pass around the colored wool item. Ask the students what they think it's made out of. Remind them where wool comes from, and ask how this item got its color. Did it come from a red sheep? Explain that after we wash wool, we can use food coloring to make it all different colors. (The word "dye" is confusing for little kids so try to avoid it).
2. Give each child a sandwich bag, and let them put a small amount of wool in it.
3. Explain that we need to add a special ingredient to help the color stick to the wool. Show them the bottle of vinegar and let them smell it if they want. Add some vinegar to the bag, enough so that it pools at the bottom.



4. Seal the bag and let the children squish the vinegar around so that it completely soaks all of the wool in their bag.
5. Next, have them choose which color they would like and add 5 drops to their bag. Seal it again and have them gently use a flat hand to work the dye into all of the wool.
6. Let the wool sit for a day or two in the vinegar and dye solution. Rinse it out until the water runs clear and lay out on a towel to dry.

Carding Wool

Materials: Dyed wool, drum carder, kid sized hand carders

Instructions:

1. Have the children explore the dyed, uncombed wool. Ask how it feels, and what they notice about how it looks (bumpy, scratchy, curly). Explain that we're going to brush the wool to straighten out the fibers and get it ready for making projects.
2. Demonstrate how to use the hand carders (put a small amount of wool onto one carder and hold it with the teeth facing up; take the other carder and hold it with the teeth facing down so that the brushes go in the opposite direction).
3. After children have combed a little bit of wool, demonstrate how the drum carder works by turning the wheel and adding in the wool. Have a grown up slowly add the wool in at the bottom of the small wheel so that the children don't hurt their fingers on the sharp teeth. To get the wool off the drum carder, use the stick to pull it up and then slowly turn in the opposite direction while pulling it off.
4. Observe the combed wool compared to the uncombed wool. How do they look different?

Spinning Yarn

Materials: Spinning sticks, combed wool, example yarn

Instructions:

1. Begin at circle by reviewing the wool processing projects you've done each week. Explain that now we are ready to start making things with the wool. Show the ball of yarn to the students and ask them if they know what it is. Explain that when you spin the wool into yarn it makes the wool more strong. Demonstrate pulling apart a piece of the combed wool and show the students how easily it comes apart. Next, try pulling apart a piece of yarn and show them how strongly it holds together. Once it is made into yarn, you can make all sorts of things with it.



2. At the table, show students how to use a spinning stick. Instruct them to hold the stick with both hands, and hook it around a thin piece of wool. Have them carefully spin the spinning stick with their hands, which you pull the wool out and let it twist into yarn.
3. When their piece of yarn is about a foot long, hold each end tightly and take it off the hook. Show the children how when you relax the wool, it twists up on itself. Put the two ends together, find the middle point, and let the yarn fold in half and twist onto itself, making it two-ply yarn. If you let go of it before plying it, it will completely unravel, so be very careful and make sure they don't let go! They can wear their yarn around their wrist as a bracelet or put it in their cubby to take home.

Ball Winding

Materials: Ball winder, umbrella swift, knitty nobby, skein of yarn

This activity can be a follow-up for spinning yarn, or before finger knitting.

Instructions:

1. Show the children the skein of yarn, and explain that we need to wind it into a ball before we can make things with it.
2. Untwist the skein, untie the ends, and place it on the umbrella swift.
3. Let each child take a turn spinning the ball winder.

How to use a Knitty Nobby: <https://www.youtube.com/watch?v=wnOlraopQ74>

How to use the Umbrella Swift & Ball Winder:

<https://www.youtube.com/watch?v=4CZBnsvDNBI>

Finger Knitting

Materials: Little balls of yarn in different colors, examples of knitted items

Instructions:

1. Demonstrate finger knitting to students at circle. Emphasize the rhythm of it, and find an easy way to describe it such as, "loop, jump the loop, loop, jump the loop". Exaggerate your gestures and time them up with the words so they start to associate the word with the action. Explain that this is knitting and show students some examples of knitted things.
2. Help students make a long knitted chain. When they're done, loop the tail through the last stitch. If you don't loop the tail, the whole thing will unravel. They can turn their knitted chain into a necklace or put it in their cubby.



Find a detailed explanation of finger knitting here:

<http://www.montessoriworksblog.com/2013/04/12/finger-knitting/>

Felt

Materials: Combed wool in fun colors, white wool batting, plastic bags, Sharpie for writing names, liquid soap, very warm water, pitcher, towels, examples of felted wool

Instructions:

1. Ahead of time, mix very hot water and soap in the pitcher.
2. Show children the example of felt and explain that we are again going to make something with our combed wool so that it is strong and can be useful. You can demonstrate how strong the felt is by grabbing on it. Felt can be used for slippers, hats, clothes and some people even cover their houses (aka yurts) with it.
3. Show them the combed wool and explain that it will be layered and we will add in soap, warm water and use friction to make all of the hairs stick together. Have them rub their hands together very fast and notice the heat they are generating – this is friction. Admire how fluffy it is in the beginning and how thin it is at the end.
4. Give each child a square of white batting, and let them arrange small pieces of colored wool on top of it.
5. When they're done arranging, write their name on a sandwich bag and carefully put their wool design in the bag so it lies flat. Pour in some warm, soapy water, push the air out the bag and seal it. Remind them about friction, and have them start rubbing and patting their wool so that it will turn into felt.
6. Admire how their wool is beginning to change. If they start to get bored with this process, make up different ways of rubbing the wool- hit it with a fist, tap it with your finger tips, slide your hands back and forth. You can also make a fun game where you pass everyone's wool around and take turns patting it while singing a song. Make sure they pat the wool for at least 5 minutes.
7. Take it out at the end and admire how different it looks. Rinse it under cold water to get the soap out.

Weaving

Materials: Loom, yarn, example of woven fabric

Instructions:



1. Explain to children that you can use yarn and a special tool called a loom to make woven fabric. Show them an example of something that is woven. What do they notice about it? The yarn is going over and under, over and under throughout the fabric. Hold your hands over something and ask “am I over or under”? Repeat this with your hands underneath something. Explain that the yarn will travel through the loom over and under to make the weaving.
2. When you sit in front of the loom, have them hold the yarn and ask them “is it over or under”, and help them get into the rhythm of weaving. You can chant “over, under” as they weave and make a fun song out of it.

Model Sheep



Materials: Black pipe cleaners, combed wool

Instructions:

1. This is a good activity for wrapping up the unit on wool and bringing it back to sheep. Ask the children where wool comes from. Show them a little model sheep. How can they tell it's a sheep? Explain that we're going to use our wool to make our own little model sheep to take home.
2. If you're doing this activity with very young children, prepare the sheep bodies ahead of time. Cut the pipe cleaner in half. Cut one half into quarters- these are the legs. Leave the other half long (this is the body), but cut a one-inch piece off the end- these are ears. Wind the leg pieces around the end and middle of the body, bend the other end of the body into a neck and head, and wind the little ear piece around the head so the ears stick up.
3. Separate a piece of wool that's about one-inch-wide, and a foot long. Wrap the wool around the body and neck of the pipe cleaner sheep. Tuck in the end.

Find more detailed instructions and pictures here:

<http://www.sheepylady.com/store/ancillary.asp?ID=20>