Hands-on with Wool

Spinning and Dyeing Wool

Materials

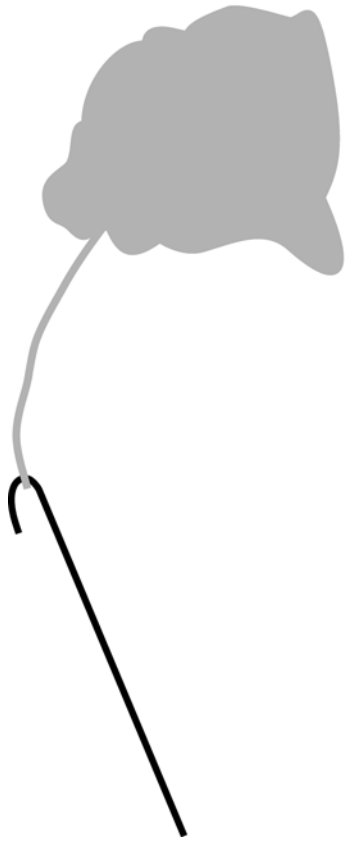
- Wool Spinning Kit (available from http://www.agclassroom.org/ut)
- Koolaid or natural plants for dyeing (see page 2)
- Water
- Vinegar

Time: Varies, depending on age of students and method of dyeing wool

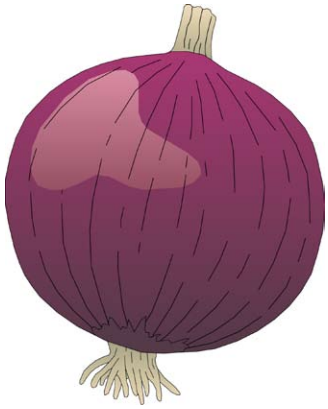
Grade Levels: K - 12

Procedure 1: Spinning the wool

1. Discuss with your students the skill of spinning that is used to change wool into a fiber that can be woven or knitted. Spinning wool can be a hands-on way to show students how a fiber is twisted to be made into yarn or thread that will be woven or knitted to make fabric and clothing. This is a similar method people used for years before the invention of machines.
2. Each student, or pair of students, will take a piece of carded wool approximately 1/4" wide and 10" long. They will hook the wire onto one end of the wool and begin twisting and drafting out the wool the same way you do when using a drop spindle. When your students have spun the length of yarn, they are ready to ply the yarn. You can view a demonstration of this process at https://extension.usu.edu/aitc/cart/details.cfm?ProdID=177&category=0
3. Instruct your students to leave the twisted wool on the spindle hook or it will untwist and fray. The next step is to ply the wool into two-ply yarn. If you ply your wool, it will become softer and stay together. Tell your students that plying is the twisting together of two single strands.
4. Show your students how to have someone hold the center of the twisted wool while you hold both ends. Bring your hands together and put both ends of the wool into one hand so that there are two strands side-by-side. Have your helper let go and let the wool twist together. The double strand is now plyed yarn. It is stronger and will not un-spin.
5. The last step is to have your students tie the plyed yard around their wrists to form a *friendship bracelet.*
6. Discuss with your students how fabrics become different colors. If you would like to dye wool, this activity can be fun and educational. Here are a few simple recipes and suggestions:



Koolaid method:
In a 1-quart canning jar, dissolve 1 pkg. Koolaid in one cup of water; add 1 tablespoon of vinegar and place in a pan of water on medium heat. Dampen about an ounce of wool and place in jar. Simmer for 20-30 minutes or until the water is almost clear and all the color is in the wool. Rinse wool in cool water. You may also use a sun dye method instead of the stovetop. Just place the jar containing the dyestuff and wool in a sunny location for about four hours (can be longer or shorter depending on intensity of sun).



If you would like to try some natural dyes, consider the following (some of our locally found plants will produce dyes that work fairly well):

- Coreopsis blooms (fresh or dried) dye a bright golden yellow
- Onion skins dye a rich, reddish brown
- Alfalfa leaves and stems dye a soft baby yellow
- Poplar leaves dye tan
- Teasel dyes a khaki color
- Canada thistle leaves, stems, and flowers dye grey
- Sunflowers dye a greenish gold
- Cattail dyes beige
- Sagebrush dyes a golden tan
- Red cabbage dyes blue

Natural Dye Method:
About 1 pound of plant material will produce satisfying color on about 1/2 pound of wool. Cover the chopped up plant with water and simmer for about an hour. Strain the plant material from the liquid (cheesecloth works well), and add pre-dampened wool (you may have to add more water at this stage so that the wool is completely immersed). Simmer for another hour or until the wool is desired color, then rinse in cold water. A mordant (a chemical, which opens up the fiber so that it bonds more easily with the dye, and often produces variations in the color of the dye) can be added to the dye bath or used on the wool before dyeing. However, most mordant (copper, tin, chrome, iron) are quite toxic. Alum or vinegar (both available at most grocery stores), can be used safely or use no mordant at all. Mordant is from the Italian word “mordere”, which means “to bite”. The colors will bite and be more intense if a mordant is used. In order to experiment with plants and color, give your students a piece of white poster board and instruct them to scrape a leaf or flower across the card. The resulting stain is a good indication of the color that plant will produce when used as a dye.