

Wet and Woolly

Objective

Students will experiment with some of the properties of wool and compare and contrast them with synthetic fibers, practice vocabulary related to sheep and wool and create art with wool yarn.

Background

Sheep were some of the first animals to be domesticated by ancient people. They have been providing meat and clothing to people for over 10,000 years. Spinning wool into thread began about 5,000 years ago.

Wool is a special natural fiber. It always feels warm and soft. It is very good at keeping out the cold and at warming your skin. Even if your wool sweater gets wet from snow or rain, it will still keep you warm. Wool also wears well and lasts for a long time. One of the best things about wool fabric is that it is flame resistant, so it is safer to wear than some other fabrics.

One sheep produces eight to ten pounds of wool per year, enough to make a man's suit. One pound of wool can make ten miles of yarn.

Wool straight from the sheep is called raw wool. Raw wool may go through more than 70 processing steps to assure that fabrics made from the wool are of the highest quality.

Oklahoma's sheep and lamb inventory on January 1, 2016, was 746,000 head. Wool produced from Oklahoma sheep in 2012 was 95,000 pounds.

Wool can have a wide range of natural colors and textures, depending on which animal produced the fleece. To help consumers and spinners identify pure wool, the wool industry designed a trademark symbol. The wool symbol can only be used on products made from pure new wool. The wool symbol is used and recognized all over the world.

Wool can also be made from the hair or fur of goats, rabbits, llamas and even a semi-wild animal from the Andes mountains called a vicuna.

Procedures

1. Hand out student worksheets.
 - Review and discuss the meaning of the vocabulary words found at the top of the worksheet.
 - Ask students for general definitions.
 - Read and discuss background.
 - Students will read the information on the worksheet silently or read it together as a class.
 - Students will underline the vocabulary words found in the reading.
 - Students will locate the main idea and supporting details in the passage.

Oklahoma Academic Standards

GRADE 2

Speaking and Listening: R.1,2,3,4; W.1,2. Fluency: 1.
Reading and Writing Process: R.1,3. Research: R.1,2,3; W.1,2,3
Physical Science: 1-1,2,4. Life Science: 4-1
Vocabulary: R.1,3,5; W.1.

GRADE 3

Speaking and Listening: R.1,2,3,4; W.1,2. Fluency: 1.
Reading and Writing Process: R.1,3. Vocabulary: R.1,3,5; W.1.
Research: R.1,2,3; W.1,2,3
Life Science: 4-2,3

GRADE 4

Speaking and Listening: R.1,2,3,4; W.1,2. Fluency: 1.
Reading and Writing Process: R.1,3. Vocabulary: R.1,3,5; W.1.
Research: R.1,2,3; W.1,2,3
Life Science: 1-1

Materials

wool gloves

gloves from synthetic fibers

ice cubes in plastic bags

samples of wool clothing and
other items made from wool

Wool Day

1. Designate a “wool” day.
Encourage students to wear or bring something made of wool to school.
 2. Invite a sheep producer to the classroom to explain sheep and wool production.
 3. Invite a wool spinner to class to demonstrate spinning wool with a spinning wheel.
2. Students will use their own words and as many vocabulary words as possible to tell what they have learned about sheep.
 3. Students will use vocabulary words to create their own questions about sheep.
 4. Bring a skein of yarn and unwind it as you ask students why an interesting, usually long, story is sometimes called a “yarn.” Discuss other sayings related to sheep. (See list at end of lesson.)
 5. Bring gloves made from wool and gloves made from synthetic fiber (acrylic or polyester) to class.
 - Each student will put a wool glove on one hand and a nonwool glove on the other hand.
 - Sprinkle two tablespoons of water over the palm of each glove.
 - Students will rub their hands together and wait five minutes.
 - Students will predict which hand will feel warmer after five minutes.
 - After five minutes, ask students which hand feels warmer? Which one feels cooler?
 - Students will remove both gloves and place them on separate napkins or paper towels with the wet side of the glove down, against the paper.
 - After a few seconds, students will decide which glove still has more water on the surface. The wool glove should have more, since wool will not lose as much water as manmade fiber.
 6. Bring several items of clothing to class.
 - Students will use the experiment above to determine if they are made from wool or a manmade fiber.
 7. Conduct the Ice Cube Test.
 - Give each student two tightly-sealed plastic bags, each containing two or three ice cubes.
 - Each student will put a wool glove on one hand and a nonwool glove on the other hand and hold one plastic bag filled with ice cubes in each hand.
 - Lead a discussion based on the following: Which cubes melted first? Which hand felt cold first? Which glove would you want to wear to play in the snow?
 8. Acquire enough clean, combed wool to provide each student with a handful. Show students how they can spin their own wool yarn, using only their fingers.
 - Hold a clean piece of wool in your left hand.
 - Pull out a strip of the wool about one inch wide and thin enough so you can see through the fibers.
 - Roll the strip of wool between your thumb and index finger.
 - Roll the strip only in one direction. never roll it back and forth.
 - Keep rolling the strip of wool until the fibers wind around each other and form a firm thread of yarn.
 - Wind the yarn around the first two fingers of your right hand.
 - Keep drawing out strips of wool, twisting them tight.
 - Wind the yarn on your fingers.
 - Soon there will be a small ball of “homespun” yarn.

Name _____

Fleece as White as Snow?

Read the story below, and underline the 18 vocabulary words. Some words may appear more than once. Only underline the one that appears first.

Vocabulary Words

ewe	wool	fleece	Hampshire	ram	Suffolk	flock
bales	breeds	lambs	shearing	lanolin	glands	yarns
	Dorset	stearin	by-product	wool		

For thousands of years people have depended on sheep to provide them with milk, meat and clothing. Columbus was the first to bring sheep to the New World. Spanish settlers brought large flocks of sheep when they first made their homes in what is now our state of New Mexico.

A female sheep is called a ewe. The male is called a ram. Baby sheep are called lambs. Sheep grow fluffy wool all over their bodies. This coat is called a fleece. The fleece keeps the sheep warm and dry. Sheep need their hair cut about once a year. This is called “shearing.” It takes about five minutes to shear a sheep. A good sheep shearer can shear about 150 sheep in a day.

After the fleece is sheared, it is weighed and bundled up in bales. Then it is taken to a factory to be sorted and washed. The Mother Goose rhyme tells us Mary’s lamb had “fleece as white as snow,” but fleece is never that white. Oil in the fleece causes dirt to cling to the coat. For a lamb to look really clean, it would have to be bathed every day.

The oil in the fleece is called “lanolin.” Lanolin comes from small oil glands found under the sheep’s skin. Lanolin glands are similar to the sweat glands you have in your body. Lanolin is used in makeup and lotions. It can also be used to waterproof shoes. We get many other by-products from sheep—leather, waxes for candles, medicines and stearin, which is used to make chewing gum and candy. The inside of a baseball is made by winding 150 yarns of wool into a tight ball. Items that are made from wool are labeled with the wool symbol.

There are 45 different breeds of sheep in the United States and about 914 different breeds of sheep in the world. Some of the more popular breeds of sheep are Suffolk, Hampshire and Dorset.



Complete this sentence: The wool symbol means

Common Words and Phrases with Sheep Origins

big wig

In past centuries, skins with wool were commonly used to make wigs. Judges wore large, elaborate wigs to denote their line of work. Since these men sat in judgment of others, they were obviously important. Consequently, anyone with great power became equated with a big wig.

black sheep

Figurative use is supposedly because a real black sheep had wool that could not be dyed and was thus worthless. But one black sheep in a flock was considered good luck by shepherds in Sussex, Somerset, Kent, Derbyshire.

catgut

From “kitgut,” and obsolete word for “fiddle.” Catgut was actually made from the intestines of sheep, not cats.

counting sheep

Shepherds have to count their animals when they move their flocks from place to place to make sure none have been left behind. In large flocks, this could be a long and dull job that could lull a shepherd to sleep. Counting sheep thus became a technique for falling asleep.

dyed in the wool

Refers to a processing step in which wool is dyed prior to spinning. Results in deeper, longer-lasting color than when yarn is dyed. Came to be used to describe anything deep and true, such as a personality trait.

earmark

Originally a cut or mark in the ear of sheep and cattle, serving as a sign of ownership.

fleece

The fibrous outer covering of a sheep. Also used as a synonym for shearing, or taking wool, from a sheep. Now used as a synonym for swindling or taking money or other valuables from another person.

gentle as a lamb

Sheep, in general, lack aggressive characteristics and behaviors as a result of humanity’s domestication efforts. Humans wanted sheep to be docile and easy to handle and selected them for these traits. Consequently, sheep, and lambs in particular, are exceptionally gentle animals. The term is used to describe anything or anyone docile.

pop goes the weasel

In the days of handspinning, a weasel was a device used for measuring lengths of yarn. After a given number of turns of a spinning wheel, the weasel made a popping sound to mark the yardage. The device became a timeless part of our language because it was included in the children’s song and game, “Pop Goes

the Weasel.”

pull the wool over someone’s eyes

Another reference to wool wigs of the past. The wigs were large and easily slipped forward over the wearer’s face. Lawyers who successfully tricked a judge would brag of having pulled the wool over the judge’s eyes. This use of the term was so common it entered general usage for any trick or deceptive practice.

ram

A mature male sheep. Also a device used to crush or impact another object. Mature male sheep have an aggressive behavior in which they lower their heads and charge into an opponent or predator. For example, a mature male sheep may ram a human it feels threatened by.

score

Counting large numbers (of sheep, etc.) with a notch in a stick for each 20.

sheepish

Resembling a sheep in the sense of being bashful.

sheepskin

Diplomas were formerly made of sheepskin parchment.

shoddy

Because of a wool shortage in the mid 1800s, manufacturers began to collect used wool cloth and rags and reprocess them into yarn. Textile workers termed the recycled cloth “shoddy.” The demand for uniforms during the Civil War greatly increased the number of shoddy garments being produced. The shoddy uniforms looked fine, but they wore out quickly. The thousands of Union soldiers who wore the shoddy uniforms began using the term to signify anything of substandard quality, just as we do today.

spinster

In the 1700s nearly all colonial families spun their own wool to make their own wool cloth. This work was usually done by the unmarried women in the family. The term “spinster” became equated with being a single woman. Consequently, even today single women are sometimes referred to as “spinsters.”

two shakes of a lamb’s tail

A lamb can shake its tail twice very quickly. This may be an enlargement of an older saying, “in a couple of shakes,” meaning a double shake of the hand, two shakes of a dice box, two shakes of a dustcloth, or whatever it may be that takes little more time in shaking twice than in shaking once.

woolgathering

Indulging in wandering fancies and purposeless thinking, from the literal meaning “gathering fragments of wool torn from sheep by bushes, etc.”