



# FLEECE AS WHITE AS SNOW?

**GRADE LEVEL:** 4-5

**SUBJECT:** Language Arts

**NATIONAL STANDARD(S):**

(3-5) LA: 5.2, 5.3, 5.6, 7.7, 10.1,

**THEME:** Sheep, Wool

**FOOD AND FIBER TOPIC:** I-D, II-B

## LEARNER OBJECTIVE

Students will develop vocabulary pertaining to sheep production by using context clues and information sources.

## VOCABULARY

*bale*—A large bundle of goods, closely pressed and bound together.

*breeds*—A race or variety of animals similar in most characteristics.

*by-product*—Something produced in addition to the main product of a raw material.

*Dorset*—An English breed of sheep which have large horns or polled horns, close-textured fleece and wool of medium length.

*ewe*—A female sheep of any age.

*fleece*—The wool from all parts of a sheep.

*flock*—A group of sheep.

*gland*—An organ for secreting a substance to be used in or eliminated from the body.

*Hampshire*—A breed of sheep which are large, thick-muscled and hornless.

*lamb*—A young sheep less than one year old, or the meat of a young sheep that is less than one year old.

*lanolin*—Oil that is in the fleece of sheep.

*polled*—To cut off or cut short the horns of an animal.

*ram*—A male sheep which has not been castrated.

*shearing*—Cutting of the fleece of a sheep.

*stearin*—A white solid found in many animal and vegetable fats.

*Suffolk*—A hornless English breed of sheep, producing excellent meat.

*wool*—The hair of sheep that is cut off and made into cloth.

*yarn*—Spun wool that may be used in weaving, in knitting and in the manufacture of thread.

## BACKGROUND

More than three-quarters of the garments in the autumn/winter collections in Paris, the center of the fashion world, are made from wool.

A perfectly preserved woolen sock was found recently buried in silt on the banks of a river in England. The age of the sock is estimated to be 1,000 years.

The wool fiber actually has tiny pores so when wool is dyed the fiber expands to accept the moisture, the pores open and the dye is taken right inside the fiber and held there. That's why wool fabrics look so rich in color.

Wool can be extended to some 70% of its natural length and when tension is released it returns to its natural length. That's why finished wool products retain their shape so well and won't sag, stretch or crease easily.

Sheep are timid animals, most comfortable when surrounded by lots of other sheep. Contrary to popular opinion, sheep are intelligent animals. When handled properly, they are easy to work. These characteristics led to the domestication of sheep about 12,000 years ago. Sheep provided for all the basic needs of early man: meat and milk for food; skin and wool for clothing and shelter; and bones for tools. With the introduction of spinning and weaving, raw wool and woven cloth became valuable items of trade and the wool industry was born.

Early civilizations tended great flocks of sheep for both meat and wool, from ancient Mesopotamia, Babylon, Egypt and Greece to the Roman conquerors who followed. Sheep and wool are even included in legends and myths. When Jason set off on his legendary quest for the Golden Fleece, wool was up there on a pedestal next to gold.

It was the Romans who developed the practice of selective breeding, which began as a simple preference for softer, light-colored fleece and has evolved into today's sophisticated study of microscopic fiber characteristics. The Romans bred sheep with soft, fine white wool and Roman armies traveled with flocks of well-tended sheep, spreading sheep and Roman influence wherever they went.

Two Roman conquests turned out to be especially significant to the wool trade. In 55 BC, the Romans invaded England and occupied the British Isles, where they introduced their British subjects to the idea of a wool textile industry and encouraged sheep farmers to improve their local breeds. Britons built upon the selective breeding practices of the Romans and developed a wool trade that soon rivaled the best. •In 45 AD, the Romans conquered Spain, where they bred their own sheep with breeds from Africa and Europe, and in the process, developed a new breed that would come to be known as the Spanish Merino, with the whitest, finest wool ever known. Today, the Merino still produces some of the finest, softest wool in the world.

Spain and Great Britain rose to power partly on the strength of their wool industries. The Merino sheep became so important that, during the Middle Ages, Spain dominated the wool market and accumulated great wealth. The penalty for anyone caught taking a Merino sheep out of the country was death. A few smugglers succeeded, but the Spanish throne was its own worst enemy-it bestowed small gifts of the prized sheep on friends and relatives in other kingdoms. Largely because of these royal efforts, descendants of the Spanish Merino are found today in sheep-raising countries around the world.

As more and more wool was needed for England's busy mills, sheep production spread to British colonies. South Africa and Australia both had warm, dry climates favorable to Merino sheep. In 1789, South Africa acquired a small flock of six Merino sheep from the Dutch East India Company. In 1797, 35 offspring of those six sheep wound up on a ship bound for Australia, but only 13 survived the voyage.

It proved to be enough. Australians took to sheep farming with a vengeance and 100 years later, the country had become the world's leading producer of wool, most of it from strains of Merino sheep that had evolved to suit the climate. In 1750, not a single sheep existed in Australia. Today, Australia has 140 million sheep and is a market leader for fine apparel wool.

The six original sheep from the Dutch East India Company became the foundation of Merino breeding in South Africa, where today's strain remains pure to its Spanish roots. South

Africa has more than 35 million sheep and about 70 percent of its wool comes from several strains of Merino sheep.

Although sheep are found in every corner of the world, the Southern Hemisphere has proved to be ideal for producing wool. New Zealand is home to 60 million sheep and more than half of the country's wool is used to make carpets. South America also produces a lot of wool, especially Uruguay, which has more than 25 million sheep.

*Adapted from the Woolmark website (<http://www.woolmark.com/how.html>).*

### **STEP-BY-STEP INSTRUCTIONS**

1. Hand out student worksheets. Discuss and review the meaning of the vocabulary words found at the top of the worksheet. Ask students for general definitions, then share the background material.
2. Have students read the information on the worksheet silently or read it as a class. Then have students underline the vocabulary words found in the reading.
3. Using the background information, discuss the meaning of the wool symbol. Have students complete the question at the bottom of the student worksheet.
4. Ask individual class members to use their own words to repeat what have learned about sheep, using as many of the vocabulary words as possible.

### **RELATED ACTIVITIES**

1. Designate a “wool” day. Encourage students to wear something made of wool to school.
2. Invite a sheep producer to explain sheep and wool production.
3. Invite a wool spinner to demonstrate spinning wool with a spinning wheel.
4. Acquire clean, combed wool to provide to each student. Then show students how they can spin their own wool yarn, using their fingers. Hold a clean piece of wool in your left hand. Then, pull out a strip of wool about one inch wide and thin enough to see through the fibers. Roll the strip of wool between your thumb and index finger. Roll the strip only in one direction. Do not roll the strip 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 wool around the first two fingers of your right hand. Keep drawing out strips of wool, twisting tight, then wind the yarn around your fingers.
5. Ask students to look for the wool symbol at home, and report where they found the symbols.

### **RESOURCES**

#### *Student Books*

- Carrier, R. (1984). Hockey Sweater. Tundra.
- DePaola, T. (1982). Charlie Needs a Cloak. Simon and Schuster.
- Dixon, A. (1990). Wool, Threads Series. Garrett.
- Emerson, K. (1990). Julia's Mending. Avon.
- Macaulay, D. (1985). Baaa! Houghton Mifflin.
- Mithutsch, A. (1981). From Sheep to Scarf. Carolrhoda.

#### *Teacher Resources*

American Sheep Industry Association, 6911 South Yosemite Street, Englewood, CA 80112-1414, (303) 771-3500 (fact sheet, wool poster and general information, \$5).

American Wool Council, Wool Education Center, 200 Clayton St., Denver, CO 80206.  
Oklahoma Sheep and Wool Producers, Attn: Don Chandler, Rt. 2, Box 175, Watonga, OK  
73772.

Pendleton Woolen Mills, P.O. Box 3030, Portland, OR 97208-3030 (free wool chart,  
booklets and wool video for loan).

#### ***Related Internet Resources***

Breeds of Livestock Homepage--The Dept. of Animal Science at Oklahoma State University  
operates this page and continually updates the breeds of livestock within each of the  
species. <http://www.ansi.okstate.edu/breeds/>

Woolmark Homepage. Follow this link and the "Fun Facts" button for information on the  
wool industry and its unprocessed products. <http://www.woolmark.com/techinfo.html>

Sheep: Facts about Michigan Sheep--Provided by the Michigan Breeders Association and  
American Sheep Industry.

<http://www.mda.state.mi.us/kids/countyfair/animals/lambs/sheep2.html>

#### **EVALUATION**

Were students able to identify and underline the sheep-related vocabulary words in the  
reading?

#### **ACKNOWLEDGMENT**

Adapted from the Oklahoma Cooperative Extension Service, Animal Sciences, Oklahoma  
State University, Stillwater, OK 74078.

Name \_\_\_\_\_

# Fleece as White as Snow?

## Vocabulary Words

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

## Mary's Pet

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 wool all over their bodies. This coat is called a fleece. The fleece keeps the sheep warm and dry. Sheep need their wool 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 shorn, it is weighed and put into large bags. 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, wax for candles, medicines and stearin, which is used to make chewing gum and candy. The inside of a baseball is made by winding 150 strands of wool yarn into a tight ball.

There are over 35 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, Rambouillet and Columbia.

Complete this sentence: The wool symbol means \_\_\_\_\_

**The  
Wool  
Symbol**



Adapted from Oklahoma Ag in the Classroom

Food & Fiber Systems Literacy  
Agricultural Education, Communications and 4-H Youth Development  
Oklahoma State University, Stillwater, OK