

ANIMALS and our CLOTHING

LEADER'S GUIDE

Down, wool, leather, fur, silk. What do they have in common? All are fibers or fabrics in wide use in the daily lives of people everywhere. And ... they're all from members of the animal kingdom! Your *Animals and Our Clothing* kit promotes understanding about animal fibers, the species that produce them, and the contributions they make to our lives. Materials integrate easily into language arts, social studies, geography, and math.

OBJECTIVES:

- To build general awareness of animal-human interdependence, and respect for the contributions animals make to human life
- To help students understand that clothing and many other products they value come from animals
- To build recognition of those species that provide wool, leather, down, silk, and fur.
- To emphasize the ethics of respect for animals, and the need for providing responsible care to animals

TIPS FOR GETTING STARTED

GET READY. Scan the kit to get the feel of its handy teaching tools. These include:

- Full-color ***Animals and Our Clothing*** poster for display and group discussion
- **5 individual posters:** down, wool, leather, fur, and silk
- Leader's Guide with background information, discussion prompters, extended activities, resources, answers
- **9 reproducible student activity pages:** Fur 'n Fiber Times (introductory student newsletter); one Fun Page for each of the five fibers; First in Fibers (map activity); Share the Care (animal care and respect activity)

GET SET. Pick and choose! Use the kit as a self-contained teaching unit on animals and clothing, or integrate the activities into your daily curriculum. **Collect samples** of each of the fibers and fabrics illustrated in the poster (rabbit skin or other fur, silk, feathers, leather swatches, wool samples, etc.). Invite students to bring items from home too. Fabrics and fibers from animals other than those shown are also welcome (snakeskin, alligator skin, raccoon or beaver fur, buckskin, etc.). **Photocopy** the *Fur 'n Fiber Times* newsletter (2 sides; fold to 8 1/2" x 11") and any of the activity sheets you plan to use. Students may work individually or in small groups.

GO! Use your *Animals and Our Clothing* poster to introduce the kit and launch discussion about each of the fabrics/fibers. Present the fabrics in any order you wish, using the Background Facts for enhancement. **Discuss:**

- What is the fabric/fiber?
- From what animal(s) does it come?
- How have you used this fabric/fiber yourself, or seen it used?
- In what ways is it important to people?
- Take a close look at each of the fabric samples. Use your senses and describe the samples. How is each different from the other samples? Compare and share ideas with others.

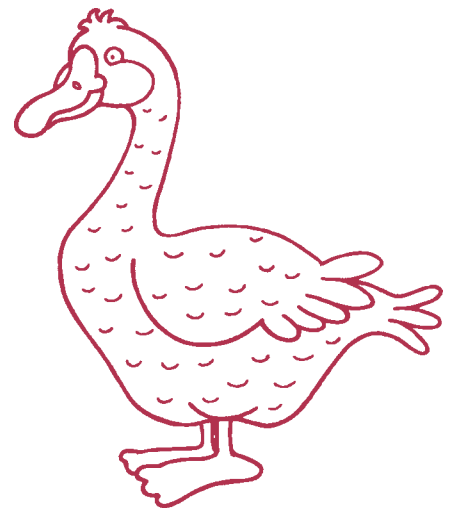
Reinforce discussion of each fabric/fiber with the **individual posters**.

Enjoy the fun activities in the *Fur 'n Fiber Times* and the other **activity sheets!**

BACKGROUND FACTS

DOWN

Down, the light, fluffy under-coating of ducks and geese, has been produced commercially in the United States since 1894, when White Pekin ducks were imported from China. At first, most duck farms were in New York, but now many are in the midwest. Down from ducks and geese is obtained from birds raised for the food market. Although goose down is generally thought to be better in quality than duck down, both are used in down products.



Down is known for its remarkable warmth and insulating ability, made possible by its unique structure. It is made of millions of fluffy strands that interlock and overlap to form a protective layer of still air that keeps warmth in and cold out. Down is naturally water-repellent, making it ideal for outdoor clothing and sleeping bags.

Although meat is the primary product of commercial duck-breeding farms, down and feathers are the most important by-product. Each duck yields about 73% meat after processing, and a quarter-pound of feathers and down, or “plumage.” The plumage removed during processing is sold to companies that wash it and use it to make pillows, comforters, furniture, sleeping bags, and clothing. Nothing is wasted: parts not used for human consumption are used in animal feed.

During processing, down and feathers are washed in huge machines that remove dust and dirt. The plumage is “spun dry” before being put in huge dryers. When dry, the lighter-weight down is separated from the feathers by powerful air currents. After the separating process, feathers are remixed with the down at varying percentages. The mixture for pillows might be different from that in jackets.

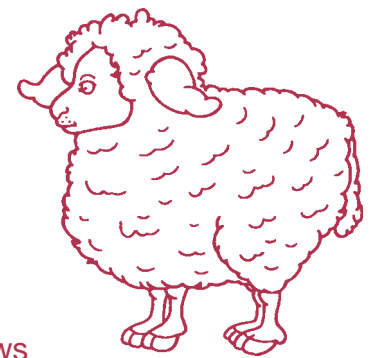
WOOL

For thousands of years, sheep have performed an amazing double duty, providing both food and clothing for human beings. People clothed themselves in wool during the Greek and Roman eras, throughout the Dark Ages, and into the Renaissance. The age of industrialization changed the way wool was processed, and made it even more available throughout the world.

Wool is a renewable resource. After shearing, which usually occurs in spring or early summer, the sheep’s wool, or fleece, grows back. In about a year, it can be sheared again. Sheep can be sheared many times throughout their lives; in fact, they must be sheared to remain comfortable and healthy. An expert can shear a sheep in about five minutes, removing the fleece in one piece.

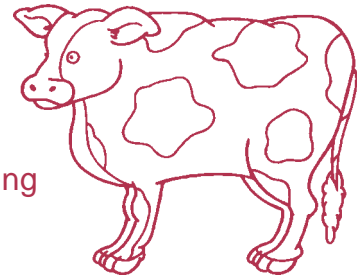
At the warehouse, wool is sorted by type and quality. In the mill, the wool is cleaned to remove dirt and grease. The grease, called lanolin, is used in cosmetics and hand creams. When the wool is clean, it can be dyed if desired. It is then carded to remove tangles and any remaining dirt. Carding turns the wool into long, soft strands that are then spun into yarn. A lighter-weight yarn called worsted is produced using additional steps to comb the wool before spinning. Wool yarn is woven on looms or knitted into fabric. At the factory, wool fabric is processed into clothing or household goods for shipment to stores where consumers can buy the finished product.

Sheep can adapt to a wide variety of climates and farming methods. Raised in every state, they are earth-friendly animals, no matter where they graze. By eating renewable forage, or grasses, they convert these otherwise inedible substances to high-quality food and fiber. In many areas of the country, sheep are used to graze leftover stalks and seeds after crops have been harvested. Sheep also help control weeds in ditches, roadsides and pastures, cutting down the need for chemical herbicides.



LEATHER

Since prehistoric times, human beings have loved leather for its beauty and durability. Archaeologists have found that leather was used not only for clothing and shoes, but as containers for everything from medicine to money. In 12th century England, tanners' guilds were organized to help supervise the manufacturing process and make sure skills were passed on from generation to generation.



Most leather comes from cattle as a by-product of meat production. There are other sources of leather, too. Deer produce buckskin; goats, kidskin; hogs, pigskin; horses, cordovan; and sheep, sheepskin. Animals including alligator, buffalo, crocodile, ostrich, shark, snake and walrus provide specialty leathers.

At the meat processing plant, cattle are killed quickly and humanely using methods established by national health and agriculture authorities. The hide or skin of the cattle is removed in one piece. While the meat is processed for food, the hides are placed in salt water for "curing," the first step in transforming hide into leather. Next comes "tanning," the chemical process of turning the hide or skin into leather. Since chemicals are used, tanneries are highly regulated by government environmental protection agencies. At the tannery, the hides are treated to remove bits of fat, meat, and hair. Then they are soaked in a solution of water and a tanning agent — either natural tannins such as tree bark or elements such as chromium or aluminum. Tanning can take from a few weeks to four months, depending on the tanning agent used and the purpose for which the leather is intended. The tanned hide is then split into two layers: the top layer, or "top grain," and the flesh layer, or "suede side." If the hide is to be colored, it is dyed after tanning.

At the manufacturing plant, finished leather is processed into everything from garments and gloves to handbags and wallets, shoes and slippers. The thickness of the leather decides its use.



FUR

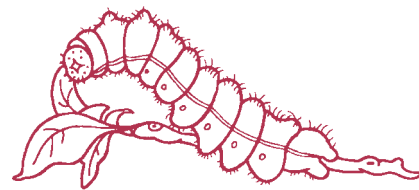
Human beings have worn fur since the beginning of time. From prehistoric hunters to American Indians, people used the wild animals around them for food and for warm, long-lasting clothing. Early New World explorers used beaver pelts and other fur skins as currency to buy supplies. The demand for fur skins led traders to move westward in search of fresh supplies of furbearing animals. The fur trade became a driving force behind the settlement of the Great Lakes region and the vast territories to the west.

Shortly after the Civil War, people began raising furbearing animals on farms. The majority of furs sold in the U.S. today are raised on farms. Farm-raised furbearers eat by-products from other farming operations, including meat and poultry parts, cheese, fish and eggs that are not suitable for human consumption.

After harvesting, pelts (skin with fur intact) are slipped over narrow boards to dry for shipment to auction facilities, where they are purchased by buyers from throughout the world. The pelts are then prepared for manufacturing by "tawning," a process that makes the skins soft, supple and easy to handle. Other parts of the animal are used for mink oil and animal feed; nothing is wasted.

SILK

The oldest written record of the use of silk dates back to about 2,000 B.C. in India. But it was China that began the cultivation of silk. When regular trade routes were established between China and its neighbors to the west, silk became more popular. Once the science of sericulture, or raising silkworms to produce silk, was known, silk spread rapidly to Turkey, Greece, North Africa, and Spain. Crusaders brought silk back to Europe and the silk culture flourished in Italy and France. For a time, King James I encouraged silk raising in the American colonies. But sericulture remains a small industry in the U.S. partly because of high labor costs. China is the largest exporter of raw silk fiber and silk goods.



Raising silkworms takes much labor. During the month from the hatching of eggs to the cocoon stage, the larvae (caterpillars) must be fed ever-increasing amounts of hand-picked mulberry leaves. Dirty leaves must first be washed and dried. The caterpillars must be protected from damp weather or sudden cold that can make them sick. Next, cocoons are floated in very hot water to soften them and allow the silk fibers to be pulled off, or “reeled.” Usually, twelve pounds of cocoons produce one pound of reeled silk, and an equal amount of unreelable spinning silk.

While most silk is cultivated as described above, some wild silk is found each year, mostly in the tropical and sub-tropical regions of Asia. Wild silk is coarser than cultivated silk, and is not white but colored. The color of the silk depends on the diet of the wild caterpillars that produce it. Some species of caterpillars in the U.S. yield wild silk.

EXTENDED ACTIVITIES:

- 1. Weave, knit, crochet.** These crafts are easy, fun, and give first hand experience in how fabric is created. Most libraries have sewing or craft books that describe the basics. Even better, invite a person who knits, crochets, or weaves to come to the group and share his or her craft. Weavers’ guilds, craft and fabric shops, home economics teachers, home extension agents, senior citizen communities all may be able to help. Provide materials for students to try these skills themselves.
- 2. Leatherwork.** Braid leather shoe laces together to fashion neck straps to hold keys or whistles. Invite a leather craftsperson or shoe repair person to demonstrate how she or he works with leather. Invite students to bring leather items to school for a collective display. Look closely at the construction of each item, and try to identify the steps the manufacturer went through to create the leather item.
- 3. Down to fun.** For a quick and easy supply of feathers, buy inexpensive feather dusters and cut off the feathers. Dip the quill ends in ink to make calligraphy pens. Use the feather ends as “paint brushes” to add details to artwork. Glue the feathers themselves to drawings and paintings to add fluff!
- 4. Take care!** Provide items of clothing of various fabrics with care labels intact. Working in small groups, students examine a selection of garments. Reading the care labels, they identify the fabric and the care required, then tell why they think the fabric is a good or poor choice for that item.

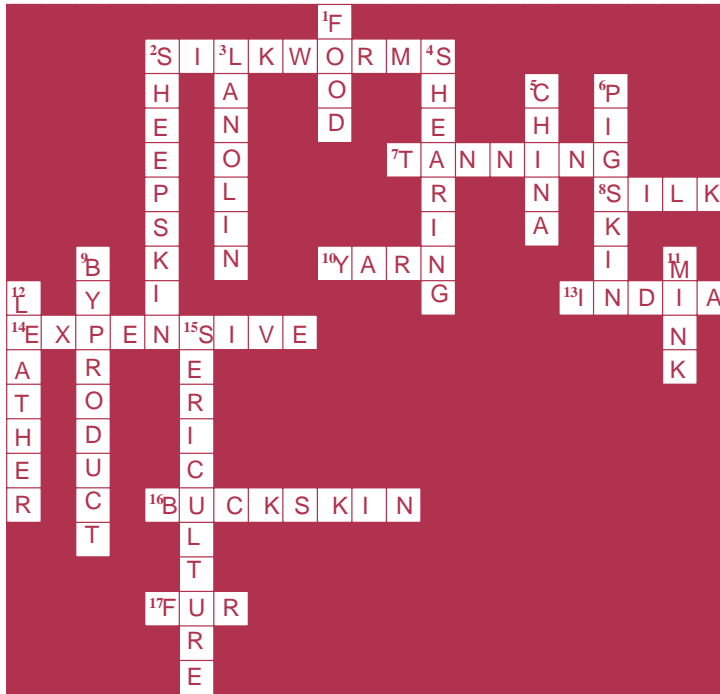
ANSWERS

FUR 'N FIBER TIMES

What's the Solution: (First column); down, fur, wool. (Second column); silk, leather

Say What? Ducks and geese

Thanks Animals!



SOMETHING TO QUACK ABOUT:

Great Stuff: comforter, vest, pillow, sleeping bag

FROM SHEEP TO SHIRT ...

1. Wool is sorted by type and quality before it goes to the mill.
2. When it gets to the mill, wool is cleaned to remove dirt and grease.
3. Clean wool is carded (combed on rollers with wire teeth) to remove tangles and leftover dirt.
4. Long, soft, carded wool strands are spun into yarn.
5. Wool yarn is woven on looms or knitted into fabric.
6. Wool fabric is made into clothing or household goods.
7. Finished wool goods are shipped to stores for us to buy.

TUFF STUFF

