

# Clothesline Sleuth

## Objective

Students will read about and discuss the different kinds of fabrics and their sources. Students will research the different fabrics. Students will trace the raw materials used in fabrics to their geographic sources.

## Procedures

1. String a cotton cord across the top of a blackboard to resemble a clothesline.
  - Bring a variety of clothing articles to class made from a variety of fabrics, both natural and synthetic.
  - Use clothespins to hang all the clothes on the clothesline.
  - Read background, and lead a discussion of the origins of fabrics.
  - Divide students into groups of four or five.
  - Assign one article of clothing from the clothesline to each group.
  - Students will study the garment label and determine what the garment is made from.
  - Students will use online search engines and library resources to gather information about the material from which the garment is made. —Students will answer the following questions as they research the garment:
    - What raw materials were used to make this material? Is this a natural or synthetic material?
    - Is this a material that is grown in Oklahoma?
    - If not in Oklahoma, where is this material produced?
    - What process is used to produce this material?
  - Each group will divide the questions among group members.
  - Group members will prepare written reports on their assigned questions.
  - Each group will combine reports of members to present a group report to the class.
  - As each group makes its report, one group member will hang the article of clothing back on the clothesline.
  - Hang your clothesline, with garments, in the hallway, along with information about each garment's origins.
2. Hand out student worksheets.
  - Students will read the information on the Reading page.
  - Students will match the definitions to vocabulary words on the vocabulary page.
  - Students will look in the dictionary for words they were unable to identify.
  - Students will use dictionaries, encyclopedias and the Reading Page to answer the comprehension questions.
3. Students will look for the countries of origin on the labels of the clothes they are wearing.
  - Students will locate the countries on a world map.
  - Students will list the countries on the chalkboard.
  - Students will place a tally mark next to each country listed for every item of clothing that comes from that country.

## Oklahoma Academic Standards

### GRADE 3

Speaking and Listening:  
R.1,2,3; W.1,2. Reading  
Foundations: 1. Vocabulary:  
R.1,3,5. Research:  
R.1,2,3,4; W.1,2,3

### GRADE 4

Speaking and Listening:  
R.1,2,3; W.1,2. Reading  
Foundations: 1. Vocabulary:  
R.1,3,5. Research: R.1,2,3;  
W.1,2,3

### GRADE 5

Speaking and Listening:  
R.1,2,3; W.1,2. Vocabulary:  
R.1,3,5. Research: R.1,2,3;  
W.1,2,3,4

# Clothesline Sleuth

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Read the information below, and use it to match the vocabulary words to their correct definitions on Student Worksheet B. Then answer the questions on Student Worksheet C.

Your jeans, shirts, socks and sweaters are all made from textiles. Some textiles are made from the natural fibers of plants and animals. Cotton is made from fibers gathered from the seed pod or boll of the cotton plant. Wool fabric is made from the wool of sheep and llamas. Mohair is made from the long hair of goats. Silk comes from the long threads the silkworm produces when it weaves its cocoon. Other textiles are made from synthetic fibers. Synthetic fibers are produced from chemicals, usually petrochemicals.



Up until the 20th Century all textiles were made from natural fibers. Since natural fibers decompose over time, very little evidence has survived to show what kinds of clothing people wore many thousands of years ago. The earliest known textiles were linen. Linen is made from the fibers of the flax plant. In Switzerland archaeologists dug up bundles of flax fibers and yarns and pieces of woven linen fabric. They think these objects are about 7,000 years old. In Mesopotamia they found wool fabrics that were about 4,000 years old. Cotton was first used for clothing in India, Egypt, China, Mexico and Peru. Silk has been used in China for over 4,000 years.

Late in the 19th Century scientists started trying to imitate silkworms by inventing a fiber that was similar to silk. In 1884, the French inventor Hilaire de Chardonnet invented rayon, the first synthetic fiber. Rayon is made from wood pulp that has been chemically treated. Nylon was the first fiber made completely from chemicals. In the production of nylon and other synthetic fibers, certain products of oil refining are combined into a syrupy substance and forced through the tiny holes of a plate called a spinneret.

Today, textiles are made from both natural and synthetic fibers. Sometimes natural and synthetic fibers are blended together. The most commonly-used plant fiber is cotton. Cotton is a major Oklahoma crop grown on farms in the southern part of the state. The short, fluffy fibers of the cotton boll must be separated from the seed before they can be used. This was difficult until Eli Whitney invented the cotton gin in 1793. The cotton gin made it easier and faster to clean cotton after it had been picked. After that, people all over the United States and Europe began wearing clothes made from cotton.

Before the invention of the cotton gin, most people wore clothes made from wool or linen. The cotton gin made cotton production more economical than wool or linen production.

Name \_\_\_\_\_

# Clothesline Sleuth

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Read the information on Student Worksheet A. Then match the words with the definitions by writing the correct number in the space provided.



1. cotton gin \_\_\_\_\_Fibers obtained from plants or animals.
2. petrochemicals \_\_\_\_\_Fibers made from chemicals rather than natural sources.
3. yarn \_\_\_\_\_A plant grown in warm climates for the fibers surrounding their seeds.
4. rayon \_\_\_\_\_A machine that separates the seeds, seed hulls and other small objects from the fibers of cotton.
5. natural fibers \_\_\_\_\_A woven fabric made from the inner bark of the flax plant.
6. cotton \_\_\_\_\_A plant grown for its fiber, used in making linen, and for its seed, used to make linseed oil.
7. textiles \_\_\_\_\_A continuous strand of twisted threads of natural or synthetic materials.
8. spinneret \_\_\_\_\_A synthetic fiber produced from wood pulp that has been chemically treated.
9. archaeologist \_\_\_\_\_The fine, soft, wavy, protective coat of domestic sheep and certain other animals.
10. wool \_\_\_\_\_South American animal related to the camel and raised for its soft, fleecy wool and as a beast of burden.
11. llama \_\_\_\_\_Chemicals made from petroleum products.
12. synthetic fibers \_\_\_\_\_A plate pierced with holes through which plastic material is pushed to produce synthetic fibers.
13. linen \_\_\_\_\_Cloth made by interlacing yarns on a loom.
14. woven \_\_\_\_\_Fabric that is woven or knitted.
15. cotton boll \_\_\_\_\_The rounded seed pod of the cotton plant.
16. flax \_\_\_\_\_Someone who looks for and studies material evidence from past human life and culture.



Name \_\_\_\_\_

# Comprehension Questions

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Read the information on Student Worksheet A to answer the following questions.

1. Cotton was first used to make clothing in what five countries? \_\_\_\_\_  
\_\_\_\_\_ Find these countries on a world map.
2. What invention helped make cotton more important than linen or wool as a material used to make clothing? \_\_\_\_\_
3. Find Switzerland on the world map. Archaeologists have found the first evidence of which fiber in Switzerland? \_\_\_\_\_
4. How many years old do archaeologists think this material is? \_\_\_\_\_
5. Look up Mesopotamia in an encyclopedia. Name the country that is located where Mesopotamia once was located. \_\_\_\_\_
6. Find that country on the world map. Archaeologists found the first evidence of which fiber in Mesopotamia? \_\_\_\_\_
7. Scientists were trying to imitate what when they first began developing synthetic fibers? \_\_\_\_\_
8. A spinneret is a plate filled with holes used for making synthetic fibers. The chemical substance is pushed through the holes to form threads. Spinneret is also the name for a part on the body of some insects. Look in the dictionary to find out what part of the insect's body it is. \_\_\_\_\_
9. What does the insect use it for? \_\_\_\_\_
10. Why do you think scientists decided to give this name to the device used for making synthetic fibers? \_\_\_\_\_
11. Look up the words "alpaca" and "vicuna" in the dictionary or encyclopedia. What do these animals have in common with the sheep and llama? \_\_\_\_\_  
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12. Look on the map to find where each of these animals live. \_\_\_\_\_  
\_\_\_\_\_

Name \_\_\_\_\_

# Comprehension Questions (answers)

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Read the information on Student Worksheet A to answer the following questions.

1. Cotton was first used to make clothing in what five countries? Cotton was first used to make clothing in India, Egypt, China, Mexico and Peru. Find these countries on a world map.
2. What invention helped make cotton more important than linen or wool as a material used to make clothing? The cotton gin helped make cotton more important than linen or wool as a material used to make clothing.
3. Find Switzerland on the world map. Archaeologists have found the first evidence of which fiber in Switzerland? Archaeologists have found the first evidence of linen fibers in Switzerland.
4. How many years old do archaeologists think this material is? Archaeologist believe the linen fibers they found in Switzerland are 7,000 years old.
5. Look up Mesopotamia in an encyclopedia. Name the country that is located where Mesopotamia once was located. Iraq is located in the area once covered by Mesopotamia.
6. Find that country on the world map. Archaeologists found the first evidence of which fiber in Mesopotamia? Archaeologists found the first evidence of wool fiber in Mesopotamia.
7. Scientists were trying to imitate what when they first began developing synthetic fibers? Scientists were trying to imitate the silkworm when they first began developing synthetic fibers.
8. A spinneret is a plate filled with holes used for making synthetic fibers. The chemical substance is pushed through the holes to form threads. Spinneret is also the name for a part on the body of some insects. Look in the dictionary to find out what part of the insect's body it is. Spinneret is the name for the back end of the body of some insects.
9. What does the insect use it for? Some insects secrete silky filaments with the spinneret.
10. Why do you think scientists decided to give this name to the device used for making synthetic fibers? The device used for making synthetic fibers is called a spinneret because scientists used it to imitate the process the silkworm uses to make silk.
11. Look up the words "alpaca" and "vicuna" in the dictionary or encyclopedia. What do these animals have in common with the sheep and llama? The alpaca, vicuna, sheep and llama all have wool covering their bodies.
12. Look on the map to find where each of these animals lives. Sheep live all over the world. Llamas, alpaca and vicu- na are from South America.