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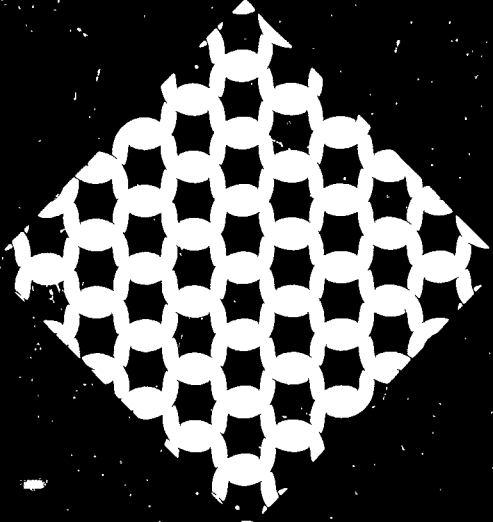
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ABSTRACT

This learning activity packet is designed to help students to acquire a competency: how to use knowledge of textile design to gain expertise in preparation for a career in the fashion industry. The unit consists of the competency, four objectives, suggested learning activities, transparency masters, and a pretest/posttest with answer keys. Activities begin with a group presentation of material covered in the unit to the students in a group and continue with exercises on identifying fabric swatches, weaving, charting garment care labels, and making yarn. An outline and teaching suggestions are provided. (KC)

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# Textiles

Developed by the  
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Competency: How to use the knowledge of textiles to gain expertise in the fashion business.

- OBJECTIVES:
- A Understand the importance of textile knowledge to those in the business of fashion.
  - B Understand the fibers commonly used in apparel and their characteristics.
  - C Understand the yarn types.
  - D Understand how fabrics are made.

I. GROUP LEARNING ACTIVITIES FOR OBJECTIVES A, B, C, D

The lesson should begin with a group presentation of all the key topics covered in this LAP. The transparencies are provided to help you with the presentation. Other activities are suggested to help the students better understand textiles. A diverse scrap basket of textiles made available to the students throughout this LAP will be helpful visuals.

	Transparency Number	Message
A	1	The textile industry is so complex and diversified that it requires a variety of talents, abilities, levels of skill, and educational preparation...artists for design, workers for production, scientists for research, and personnel for marketing and management. The textile industry is located throughout the United States with the biggest concentration being in the East and Southeast.
B	2	A fiber is the smallest unit of textile fabric. Fibers are either natural or synthetic. Natural fibers include wool, cotton, linen, and silk. Synthetic fibers include polyester, nylon, acrylic, and olefins.
	3	Our government regulates that manufacturers attach labels to garments to identify certain information. The required information is illustrated in this transparency.
		*Generic names of the fibers in the fabric in the order of proportion. Companies can also add their trade names if desired.
		*Percentage of each fiber in the fabric.

\*Garment manufacturer's name, address, or registered identification number.

The county of origin of imported fibers.

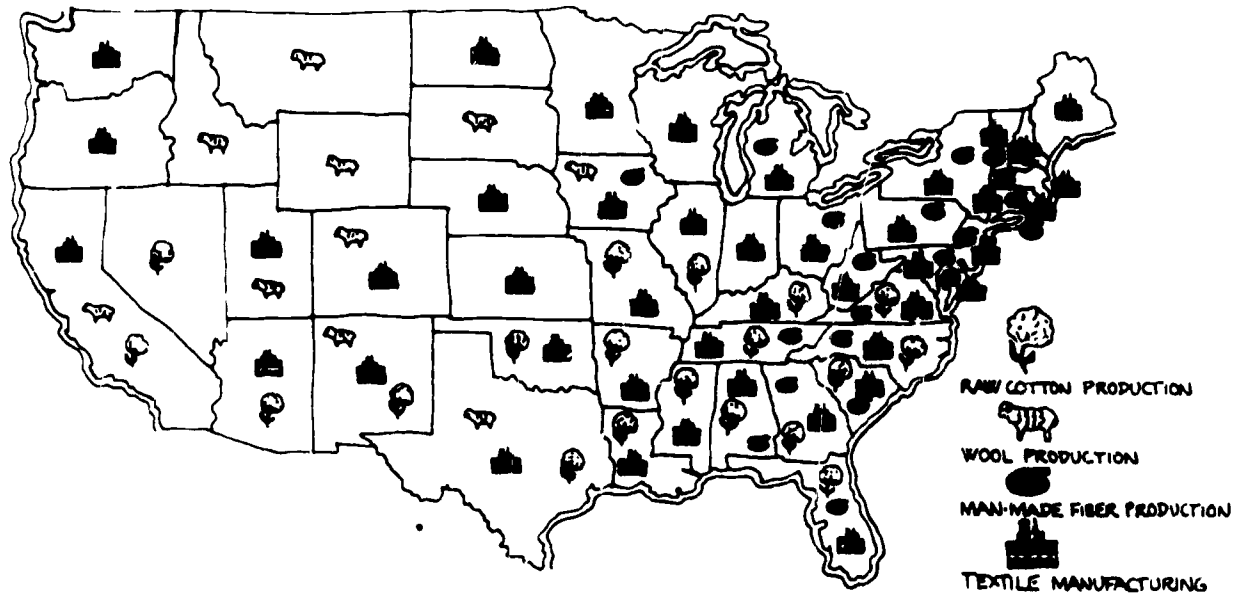
C 4 The wear, appearance, and texture of a fabric depend on the yarns that were used. A yarn is a continuous thread formed by twisting or spinning strands of fibers together. Here are some examples of yarn types.

Yarns may be woven, knitted, felted, bonded, or laminated. Weaving and knitting are the two most popular methods.

D 5 Textile fabrics are made up of a combination of the four items shown here.

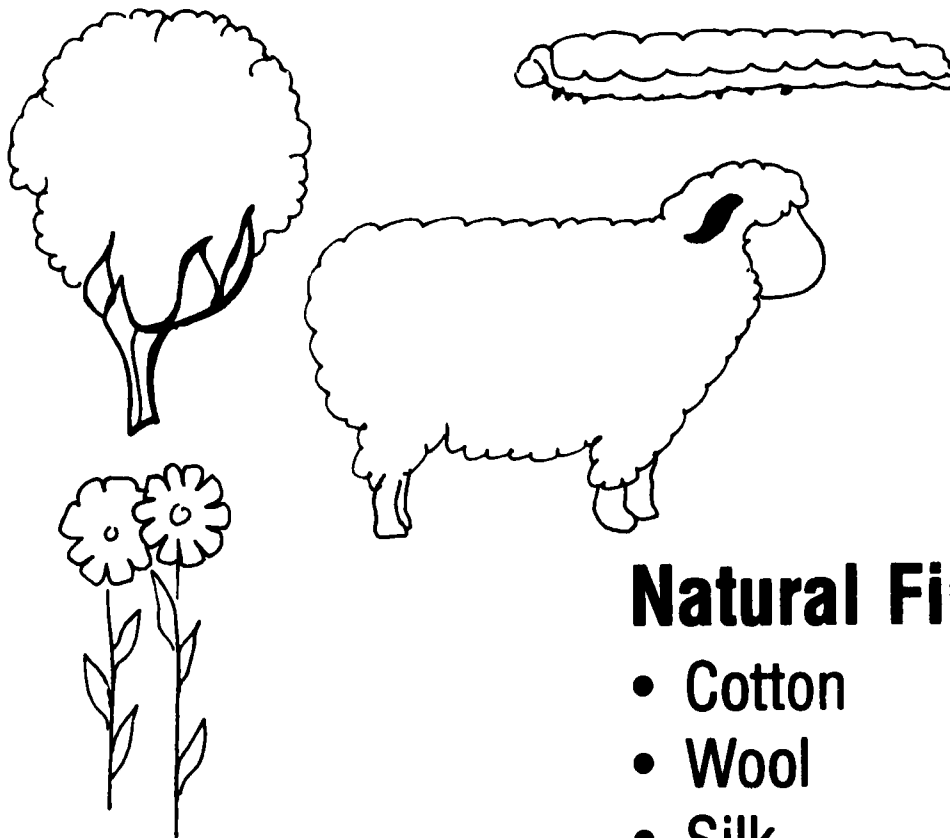
6 Weaving is the interlacing of yarns at right angles on a machine called a LOOM. Woven fabrics are usually firm, strong, and keep their shape. Notice how the yarns interlace in these three basic types of weave.

# Geographic Distribution of Textile Production



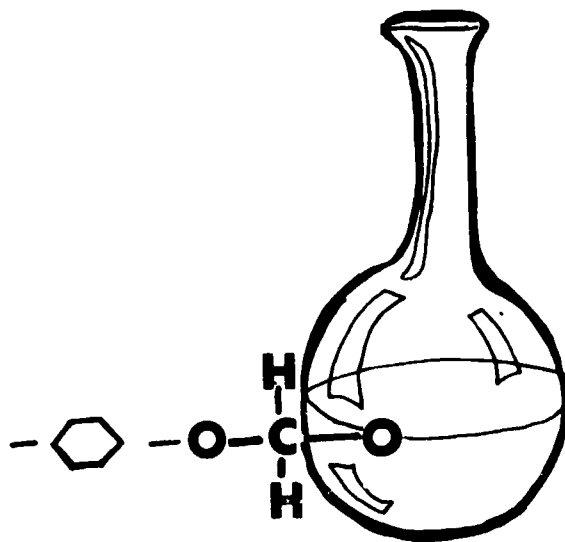
COURTESY OF AMERICAN TEXTILE MANUFACTURERS INSTITUTE





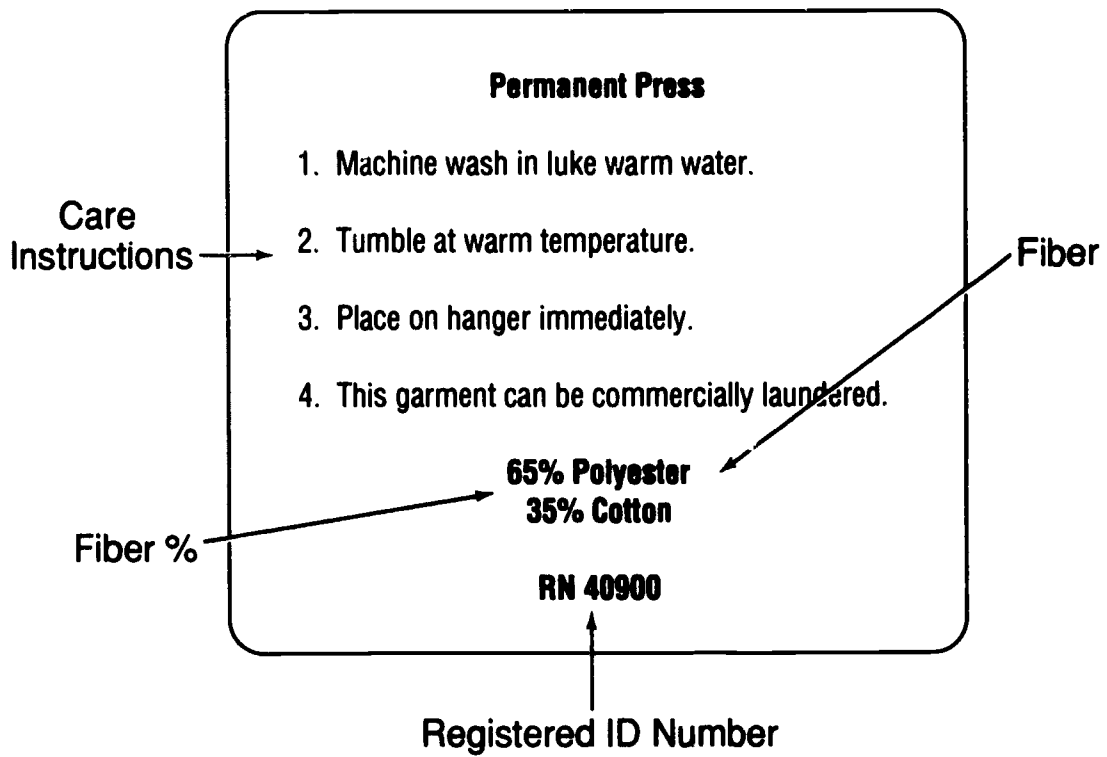
## Natural Fibers

- Cotton
- Wool
- Silk
- Linen



## Manmade Fibers

- Polyester
- Acrylic
- Olefin
- Nylon

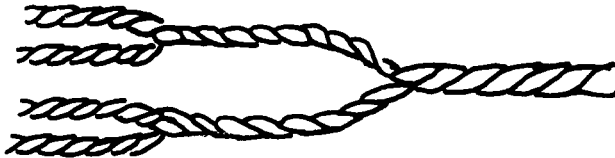




Single Yarn



Two-Ply Yarn



Cord

### Novelty Yarns



Spiral or Corkscrew



Knot or Spot



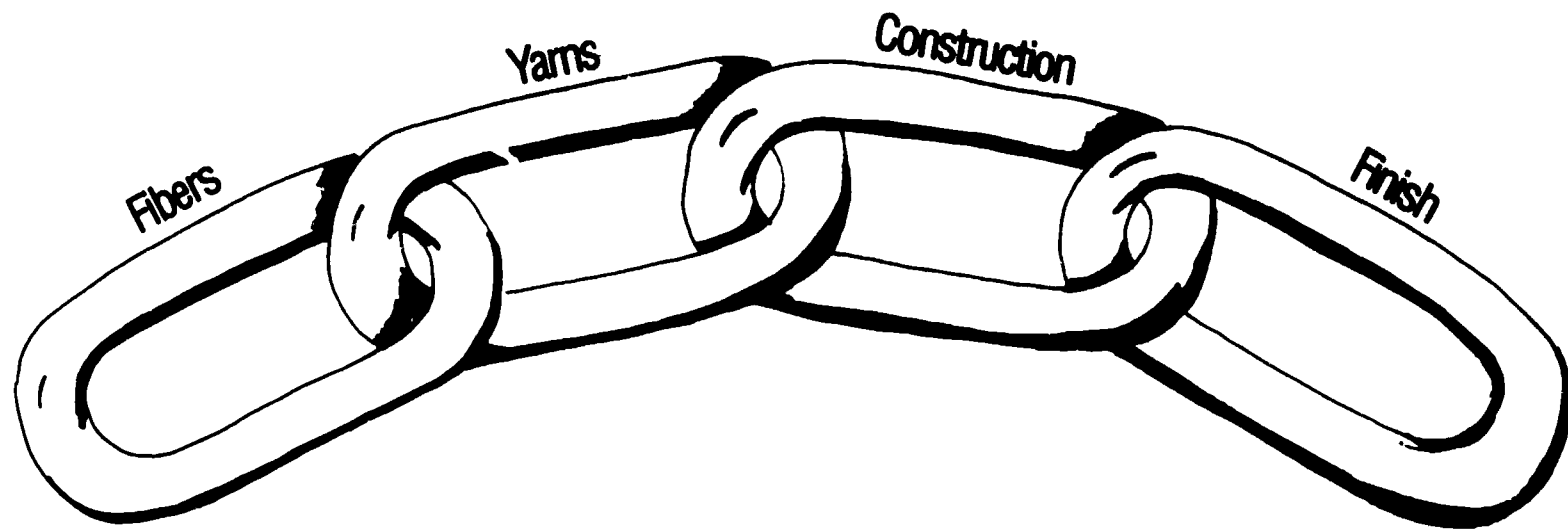
Slub



Loop

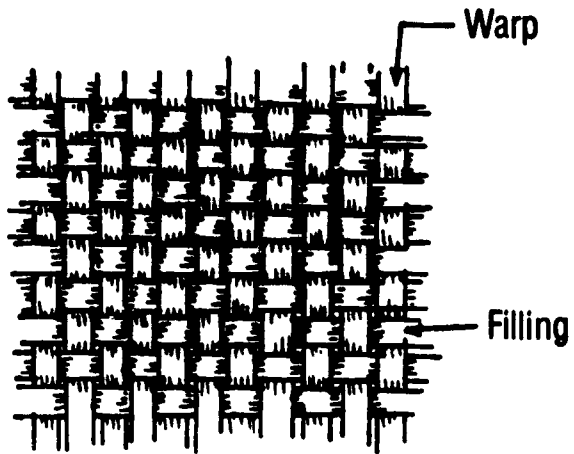


Spike or Snarl

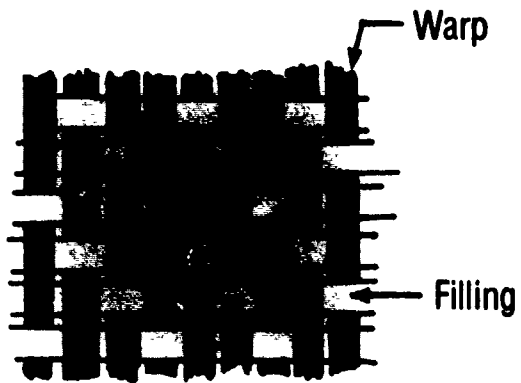


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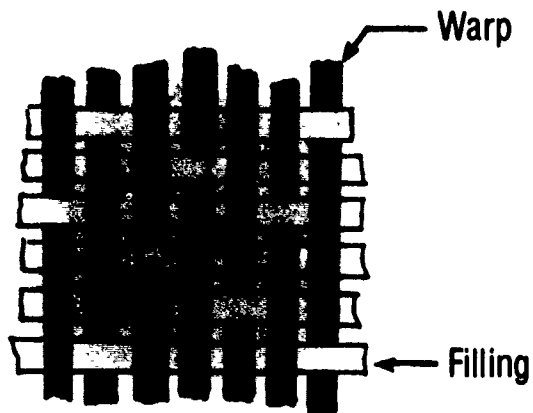
Plain Weave



Twill Weave



Satin Weave



6

13

16

TM 6

## II. ADDITIONAL GROUP LEARNING ACTIVITIES

- A. Have students examine fabric swatches from a scrap basket you have supplied. Give them a list of fabric types, fibers, yarns, finishes to identify. If desired, have them cut fabric squared, attach to a 5" x 7" file card and identify the features.
- B. Supply students with strips of two colors of paper cut in 1/2" strips. See if they can weave the strips into the 3 basic weaves: plain, twill, and satin.
- C. Take turns examining the care labels found in the clothes that the students have worn. Have the students make a chart of the information with headings of CLOTHING ITEM, FIBER CONTENT, CARE SPECIFICATIONS. Discuss the findings.
- D. Using the fibers in a cotton ball (do not use synthetic cosmetic puffs), make a two-ply yarn. Begin by pulling out four cotton fibers and twist them together to make a single yarn. Repeat. Now make a 2 ply yarn, a 4 ply yarn, and a cord. This exercise will help students understand how a yarn is formed and how the increase of plys increases the strength.

## POST TEST

Directions: Identify the best answer for the following questions. Record your responses on a separate sheet of paper.

### OBJECTIVE A

1. The textile industry attracts which of the following as employees:
  - a. Minorities
  - b. Young people
  - c. Women
  - d. All of the above
  
2. A knowledge of textiles is important to those in the fashion business because:
  - a. Fashion business employees need to be challenged
  - b. Fashion business employees are traditionally ignorant of textiles
  - c. Textiles are found in virtually all apparel and accessories
  - d. Textiles are scientific

### OBJECTIVE B

3. Which of the following are all natural fibers?
  - a. Silk, Cotton, Acrylic, Wool
  - b. Polyester, Wool, Satin, Cotton
  - c. Linen, Wool, Silk, Cotton
  - d. Rayon, Silk, Acrylic, Wool
  
4. Which of the following is not a protein fiber?
  - a. Angora
  - b. Linen
  - c. Wool
  - d. Silk
  
5. To be suitable for common use, fibers must be:
  - a. Expensive
  - b. Exotic
  - c. Easily available
  - d. Natural
  
6. Flax is:
  - a. Cellulosic fiber used for linen
  - b. Cellulosic fiber used for ramie
  - c. Non-cellulosic fiber used for linen
  - d. A protein fiber used for ramie

7. The common trade name DACRON relates to which generic fiber?
- a. Orlon
  - b. Acetate
  - c. Wool
  - d. Polyester
8. Which fiber was removed from the consumer market during World War II?
- a. Rayon
  - b. Polyester
  - c. Cotton
  - d. Nylon
9. Acetate is most like which of the following fibers?
- a. Linen
  - b. Polyester
  - c. Rayon
  - d. Acrylic
10. What is the simplest, most basic component of a fabric?
- a. Yarn
  - b. Finish
  - c. Fiber
  - d. Price

#### OBJECTIVE C

11. Yarns are classified by which of the following?
- a. Size
  - b. Twist
  - c. Number of parts
  - d. All of the above
12. What is meant of a 2-ply yarn?
- a. Two or more fibers twisted together
  - b. Two cords twisted together
  - c. Two single yarns twisted together
  - d. None of the above

#### OBJECTIVE D

13. Which of the following is NOT a basic weave?
- a. Plain
  - b. Leno
  - c. Twill
  - d. Satin



14. The self-edge of a fabric that forms on both sides of a piece good is called a:
- Grain
  - Diagonal
  - Ravel
  - Selvage
15. Which of the following is NOT fabric example of a twill weave?
- Taffeta
  - Herringbone
  - Denim
  - Gabardine
16. Woven fabrics are made on a:
- Knitting machine
  - Needle
  - Stretcher
  - Loom
17. Which of the following fiber can be used in knits?
- Cotton
  - Wool
  - Polyester
  - All of the above
18. True felt is made from:
- Acrylic
  - Wool
  - Silk
  - Cotton
19. A fabric with warp stripes which are made by changing the direction of the twill line is referred to as:
- Linen
  - Herringbone
  - Sateen
  - Gingham
20. A fabric containing metallic threads is referred to as:
- Eleganté
  - Gauche
  - Lame
  - Silk

## PRETEST KEY

1. To know how the textile will "perform" in the finished garment, to know how it should be cared for, to know if the targeted customer will desire it.
2. Easy to care for, wash and wear, colorful. Polyester and poly/cotton blends.
3. Angora, Sheep, Camel, Cashmere, Alpaca, Llama, Vicuna
4. Nylon. Used for war effort
5. Cotton, Linen, Flax, Ramie, Jute, Rayon, Acetate, Triacetate
6. Cotton
7. A filament or a twist of staples to form a continuous strand.
8. Four single yarns that have been twisted together.
9. Knits
10. Gingham, Herringbone, Taffeta, Broadcloth, Batiste, Gauze, Satin, Denim, Gabardine, Pique, Ticking, Etc.
11. Twill
12. Knits
13. Wool
14. Industry, upholstery, medical, carpet, draperies, sheets, diapers, etc.
15. Plain weave: Gingham, Taffeta, Broadcloth  
Twill weave: Herringbone, Gabardine, Denim, Drill  
Non-wovens: Felt, Interfacing, Batting  
Napped Fabrics: Velvet, Corduroy, Flannel

## POST TEST KEY

1. d
2. c
3. c
4. b
5. c
6. a
7. d
8. d
9. c
10. c
11. d
12. c
13. b
14. d
15. a
16. d
17. d
18. b
19. b
20. c