UNIT III: TEXTILES TECHNOLOGY

TOPIC A: FIBERS AND FABRICS

OBJECTIVE: Students will be able to identify fabrics by fibers, type of construction, name, and appropriateness for project.

CONCEPT: Choosing the correct fabric for the project is a critical, basic decision in sewing.

COMPETENCIES:

1. Explore the history and origins of fibers used in fabric construction.

2. Review the characteristics of the basic fibers.

3. Study the characteristics of a larger variety of fibers. (Compared to Dynamics of Clothing I.)

4. Review basic types of fabric construction.

5. Study a larger variety of weaving and knitting patterns and the appropriate uses of the end products. (Compared to Dynamics of Clothing I.)

6. Study various types and purposes of fabric finishes and their effects on the end product.

7. Identify and name a large number of fabrics.

8. Use standard terms related to textile technology.
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12. From Filament to Fabric

13. Weaving Patterns

14. Non-wovens

15. Fabric Exploration

16. Fabric Construction Samples

17. Adding Color to the Fabric

18. Fabric Finishes and Applied Designs

SUPPLIES NEEDED

Overhead transparencies from Dynamics of Clothing I curriculum, pp. I-III-19 to I-III-21
Bulletin board (I-III-76 through I-III-81)

13.1: Large tubular piece
2 crepe paper rolls 2" wide
or 2" wide strips of ribbon
- 2 different colors
Masking tape

13.2: Paper student looms

13.3: Copies of student activity guide (II-III-86)
Colored pencils or markers

Fabric samples

#1: Corduroy swatches
Velvet/terry cloth swatches
Copies of student activity guide (II-III-92)

#2: Acrylic and wool swatches
Polyester/cotton blend swatches
Fine sand paper or emery board
Copies of student activity guide (II-III-93)

#3: Acrylic knit swatches
Polyester knit swatches
Wool knit swatches
Brush with nylon bristles
Copies of student activity guide (II-III-94)

Copies of student activity guide (II-II-95)

Bowl of dye
Fibers, yarns, and fabrics to dye

Fabric samples of various finishes and applied design techniques
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<td>Bingo buttons or beans or chips</td>
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ACTIVITIES/OPTIONS

Note: There are many options listed in this unit—more than a teacher could ever do. To help you plan for this unit, it is suggested that you choose one or two activities from each group and spend one class period per group. For example:
   One day = Textile History
   One day = Fibers
   One day = Fabric Construction
   One day = Fabric Finishes
   One day = Fabric Identification
   One day = Summary and Review
   One day = Evaluation

TEXTILE HISTORY ACTIVITIES

Option 1: Textile History
Using the teacher background information, TEXTILE HISTORY, summarize the information and present it to the students. Combine with Option 2 for maximum interest.

Option 2: Textile History Timeline
Using the information provided in TEXTILE HISTORY TIMELINE as a guide, begin a Textile History Timeline on one wall of the classroom (on fabric, of course), noting some of the most significant events. (Use wide bias tape for the timeline.) Start the timeline with only a few icons and keep adding to it as more icons are found and more material is covered. Give each student one of the significant dates and have them find or develop an icon or symbol for that date. The instructor may need to provide enlarged cards with dates and significant events printed on them.

Option 3: Textile Fiber Product Identification Act
Review the information pertaining to the TFPIA and explain the significance of this act on the industry and to the consumer. Introduce the fiber classifications used in this act, using the overhead transparency as a guide.

Note: During the following sections of this unit, many new textile vocabulary terms will be introduced. A list of the terms deemed to be most important has been compiled and can be found on page II-III-113. The teacher will need to incorporate the learning of these terms throughout this unit.
ACTIVITIES/OPTIONS

FIBER ACTIVITIES

Note: Option 4, 5, or 6 can be used as a means of presenting the background material regarding fibers.

Option 4: Clothing Fibers Video
Show the students the video, Clothing Fibers, from Learning Seed. Use the accompanying activity guides from The Learning Seed as desired.

Option 5: In the Beginning...Raw Fibers
Using the background information provided in the packet at the end of this topic along with the overhead transparencies on pages II-III-47 through II-III-56, introduce the different categories of fibers and their properties to the students. A corresponding student activity guide is provided.

Option 6: Fibers Research Project
Break the class into small groups (2 or 3) and give each group the name of a fiber and have them research that fiber and prepare a report to give to the rest of the class. The packet provided at the end of this topic could serve as one resource for the students. A student activity guide is provided to guide the students in their research.

As the students present their reports, the other students can fill in the fiber charts if the teacher so desires. The teacher will need to provide enough natural fibers charts and manufactured fibers charts to cover the number of research reports given.

Option 7: Fiber Burn Tests
Using the teacher background information provided in Option 6 as a guide, conduct burn tests on a wide variety of fibers as well as some blended fibers. The teacher will need to have small swatches of the fabrics, petri dishes, and matches or cigarette lighter. The students can record the results on their student activity guides from Option 6. Be sure to have a fire extinguisher handy, just in case.

While doing these burn tests, it is a good time to include the acetone (fingernail polish remover) test on a piece of acetate and/or acetate blend fabric.

Option 8: Fibers Under the Microscope
Use microscopes from the science department to study the textures and composition of different fibers. A student activity guide is provided for the students to record their findings.
ACTIVITIES/OPTIONS

There is a set of 24 slides available that support this activity specifically. They are titled, Technology and Fabric Properties, and come with detailed teacher information. They are produced by EDTEX of Australia, Ltd., and can be purchased through Schoolboards, Etc.

Option 9: Feisty Fibers
Have the students complete the crossword puzzle, FEISTY FIBERS, as a review on the fibers materials.

Option 10: Fibers for Fun
This is a little exercise for use as a filler when there are just a few minutes of class left. It's a fun activity that, again, is a review for the students.

FABRIC CONSTRUCTION ACTIVITIES

Option 11: Making Nylon Filament
Demonstrate making nylon fabric to the students (or have an AP chemistry student do the demonstration). Instructions for making the nylon are included in the resource section.

Option 12: From Filament to Fabric
Begin by reviewing the three (3) basic types of fabric construction from Dynamics of Clothing I, Unit III, Topic A. Then introduce more specific varieties of each of these three types of construction, using the teacher background information provided. The teacher may wish to use overhead transparencies, posters, or some other means of illustration as the material is introduced. Patterns for a bulletin board depicting the steps from filament to fabric are provided.

Option 13: Weaving Patterns
The sooner the teacher can get the students involved in reproducing the various weaving patterns, the better the concepts will be received. There are several fun ways of doing this, and the teacher will have to choose what is best for his/her situation.

1. Make a human loom with the students as the harnesses and the heddles, using two colors of 2-inch crepe paper strips or wide ribbon for the warp and the filling (weft). The details for this fun activity are in the resource section of this topic.

2. Use the paper student looms from the Fashion Strategies teaching aids. These are basically 11-inch by 17-inch pieces of heavy paper that have been laminated and cut into 1-inch strips except for the top 1 1/2 inches
ACTIVITIES/OPTIONS

(the top being the 11-inch side). Again, the looms are out of two colors of paper, and each student or group of students is given one piece of each color to make the different weaves. These sets are available from Schoolboards, Etc.

3. Have the students color various weaves on grids with colored pencils or markers.

Option 14: **Non-wovens**
Introduce the students to a variety of types of knit and felt fabrics using the background information provided. The teacher may wish to use overhead transparencies, posters, samples, or other means of identification as the material is introduced.

There is kit of non-woven fabric samples available that support this activity specifically. They are titled, Non-Woven Textiles, and come with detailed teacher information. They are produced by EDTEX of Australia, Ltd., and can be purchased through Schoolboards, Etc.

There is also a set of 24 slides produced by EDTEX of Australia, Ltd., that depict how geotextiles are used in road building, hi-tech sports equipment, defense equipment, and protective clothing production. Again, the slides come with accompanying teacher information.

Option 15: **Fabric Exploration**
Set up three (3) or six (6) experiment stations around the room, depending on the number of students in the class. (If you have six (6), there are two (2) of each station.) Have the students work in pairs and complete each experiment, following the instruction on the student activity guide, FABRIC EXPLORATION #1, #2, and #3. The experiments are described in detail in the resource section of this topic.

Option 16: **Fabric Construction Samples**
Have the students collect samples of various types of woven, knitted, and felt fabrics. A student activity guide on which the students can attach their samples is provided. The teacher may choose to do this in some other manner, such as using 3-inch by 5-inch cards.

Sets of student samples can be purchased from a number of suppliers if the teacher would prefer this option. (See Resources for this unit.) If the teacher is making his/her own set of samples, it is suggested that he/she use all white fabrics so the students are not distracted by the colors.

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ACTIVITIES/OPTIONS

FABRIC FINISH ACTIVITIES

Option 17: Adding Color to the Fabric
Introduce the students to the methods of dyeing commonly used in the textile industry using the background information provided. The teacher may wish to use posters, samples, or other means of illustration as the material is introduced. The teacher could demonstrate the different methods of dyeing by having a small bowl of dye, some real fibers (cotton, wool, flax, etc.), yarns (threads) from these fibers (fabric can be unraveled), small swatches of white fabrics from these fibers, and a small item made from the fabrics of each fiber. Adding a couple of white blended yarns/fabrics to the demonstration would enhance the integrity of the learning experience.

Option 18: Fabric Finishes and Applied Designs
Using the teacher background information provided, introduce the students to the commonly used fabric finishes and techniques of applying designs. This information is from the textbook, Clothing, by Jeanette Weber, chapters 9 and 17, published by Glencoe. It is recommended that the teacher review this material in total before presenting it to the students. The teacher will need to have some samples of fabrics with the various finishes and design processes ready to show the students.

Option 19: Fabric Finishes Tic-Tac-Toe II
Students play FABRIC FINISHES TIC-TAC-TOE II as a means of learning and/or reviewing the various types of fabric finishes, dyeing, and applied design techniques. Two students can play at a time, so the teacher will need to have enough sets for the class. The teacher background information sheets in options 17 and 18 can be used as the teacher/student keys.

Directions for printing the games: Use four sets of three colors each: one for the performance finishes, one for the texture finishes, one for the dyeing techniques, and one for the applied design techniques. There must be two copies of the clue parts for each game set—one for each student.

FABRIC IDENTIFICATION ACTIVITIES

Option 20: Fabric Scavenger Hunt
As an introduction to fabric identification, give each student or group of students a list of fabrics and have a scavenger hunt to see which group can find the most fabrics the quickest. This will help the students to realize the importance of recognizing a lot of types of fabrics for most effective choices and use.
ACTIVITIES/OPTIONS

Option 21:  Fabric Identification
Make a set of 50 or more fabric samples, numbering and labeling each of them. Hang the fabric pieces around the room or on a bulletin board for the students to study. Leave them up for a period of time—preferably throughout this unit. When the students are ready to be tested, remove the names (not the numbers) and use the student activity guides for testing.

Each teacher can make his/her own list of fabrics and update it regularly as popular fabrics come and go. The list provided in this curriculum can be used as a point of reference or as is.

In the Fashion Strategies curriculum developed by the Utah State Office of Education, there are pages provided for the collection of fabric samples. See pages IX 44 through IX 48.

There are kits of fabric samples available which includes information about each fabric and/or samples for the students. They are listed in the Resources for this unit.

SUMMARY ACTIVITY

Option 22:  Fibers and Fabrics Bingo
Have students play Fibers and Fabrics Bingo as a unit review. A bingo sheet is provided for duplication, along with a list of the terms learned in this unit. Have the students fill in their bingo cards and then play. (This is similar to the Textiles Bingo from the Fashion Strategies curriculum but different.)
RESOURCES

Fabric Samples: Teacher and/or Student
Pineapple Appeal, MicroFiber Fabrics, P. O. Box 197, Owatonna, MN 55060, 1-800-321-3041, Catalog No. 332.
Exploring Woven and Knitted Textiles-Student Samples, Catalog No. EDTEX 7, P.O. Box 9106, Ogden, UT 84409, 1-800-93BOARD.

Videos
Clothing Fibers, The Learning Seed, 330 Telser Road, Lake Zurich, IL 60047, 1-800-634-4941, Catalog No. 142, 24 minutes.

Understanding Fabrics, The Learning Seed, 330 Telser Road, Lake Zurich, IL 60047, 1-800-634-4941, Catalog No. 166, 24 minutes. Has software program to go with it.

Books

Scientific Supplies
Nylon Rope Kit, Science Kit and Boreal Laboratories, 1-800-828-7777, Catalog No. 66193.
RESOURCES

Textiles Teaching Aids
The following items are available through Schoolboards, Etc., P.O. Box 9106, Ogden, UT 84409, 1-800-93BOARD:

- Human Loom Set, $50
- 12 Sets of Individual Student Looms (paper), $30
- Fibers and Fabrics Bingo Sets (30 cards and buttons), $45
- Fabric Finishes Tic-Tac-Toe II Sets, 12 Sets (3 each), $90
- Exploring Woven and Knitted Textiles Kit, Catalog No. EDTEX 4, $74.95
- Exploring Woven and Knitted Textiles-Student Samples, Catalog No. EDTEX 7, $26.95
- Technology and Fabric Properties Slide Set, Catalog No. EDTEX 6, $84.95
- Non-Woven Textiles Kit, Catalog No. EDTEX 5, $59.95
- Industrial and Non-Apparel Textiles Kit, Catalog No. EDTEX 1, $89.95
- Medical Textiles Kit, Catalog No. EDTEX 2, $84.95
- Design and Technology Slide Set, Catalog No. EDTEX 3, $69.95
- From Filament to Fabric Bulletin Board Pieces, $7.50
- Bingo Buttons (set of 750), $25
- Set of 15 Fabric Construction Samples and 10 Fiber (Fabric) Samples (labeled), $50
- Fabric Identification Cards (set of 100), $6.50
ASSESSMENT/EVALUATION QUESTIONS

1. Explore the history and origins of fibers used in fabric construction.

   1. The first fabrics used in this country were mainly from:
      A. Africa
      B.* England
      C. France
      D. Native Americans

   2. The biggest hindrance to using cotton for fabrics in the early days was:
      - There was no way of removing the seeds from the cotton boll.

   3. Synthetic fibers are:
      A.* Produced in a laboratory
      B. Made by spinning natural fibers
      C. Both of the above answers are correct

   4. The first synthetic fiber was called:
      A. Polyester
      B. Vinyl
      C.* Nylon
      D. Acrylic

   5. Silkworms were first cultivated in:
      A. The United States
      B. Spain
      C. The English Territories
      D.* The Orient

   6. William Lee invented a machine to knit hosiery in the late:
      A. 1300s
      B.* 1500s
      C. 1800s

   7. Who invented the cotton gin?
      A. Samuel Slater
      B. Edmund Cartwright
      C.* Eli Whitney
      D. Hilaire Chardonnet

   8. The person who is credited for developing the first manufactured fiber is:
      A. Samuel Slater, polyester
      B. Edmund Cartwright, silk
      C. Eli Whitney, cotton
      D.* Hilaire Chardonnet, rayon
ASSESSMENT/EVALUATION QUESTIONS

2. Review the characteristics of the basic fibers.

3. Study the characteristics of a larger variety of fibers.

MATCHING

A  1. Threadlike strands that may be made into fabric or spun into yarns.

E  2. To make from raw materials through planned manufacturing processes.

C  3. Continuous strand composed of intertwined fibers.

B  4. General name not registered by any one manufacturer.

L  5. The numbers of yarns twisted together is called the _____.

F  6. Name given to a fiber by the company that makes it.

I  7. The ability of a fiber to hold water.

J  8. Fibers that may be damaged by high temperatures while washing, drying, or ironing.

K  9. The ability of a fiber to return to its original size and shape after it has been twisted and crumpled.

D  10. Strength is another fiber __________________ that affects garment care.

G  11. The ability of a fabric to maintain its exact shade of color throughout the life of the garment.

H  12. Twisting or stretching may damage these fibers.

TERMS TO USE IN MATCHING

A-FIBERS      B-GENERIC NAME     C-YARN
D-CHARACTERISTIC E-SYNTHESIZE     F-TRADEMARK NAME
G-COLORFASTNESS H-DELICATE       I-ABSORBENCY
J-HEAT SENSITIVE K-RESILIENCY     L-PLY
13. Which is the best fiber for clothes worn often and washed often:
   A.* Cotton
   B. Wool
   C. Silk
   D. Ramie

14. Which fiber is NOT produced by a plant?
   A.* Silk
   B. Flax
   C. Cotton
   D. Ramie

15. What happens to manufactured fibers when they are burned?
   A. Become ash
   B.* Melt and form a bead

16. A fabric made of more than one fiber is called a:
   A. Ply
   B. Bead
   C.* Blend
   D. Finish

17. The 5 natural fibers are:
   A.* Wool, linen, silk, ramie, cotton
   B. Wool, linen, rayon, ramie, cotton
   C. Nylon, acrylic, rayon, polyester, cotton

18. Name three natural fibers that wrinkle easily:
   A. Wool, silk, cotton
   B.* Cotton, ramie, linen
   C. Nylon, ramie, rayon
   D. Polyester, wool, cotton

19. What is "pilling"?
   - Fiber balls form on areas of wear

20. Which fiber and fabric is made from flax?
   A. Cotton
   B. Wool
   C.* Linen
   D. Silk
21. Natural fibers can be washed in hot water without damaging the fabric.
   A. True
   B.* False

22. Which two natural fibers cause your skin to itch?
   A.* Wool and ramie
   B. Silk and cotton
   C. Wool and cotton
   D. Ramie and silk

23. What could you soak clothes in to prevent their colors from running?
   - A vinegar, salt, and cold water solution

24. Would you make a girdle out of acrylic? Why?
   - NO! It would not give support

25. Would you make underwear out of wool? Why?
   - NO! It would be itchy, hard to wash, and slow to dry

26. A fiber is a:
   A. Thread
   B. Man-made item
   C.* Hair-like substance
   D. Natural substance

27. A yarn is:
   A.* Twisted threads
   B. Another word for thread
   C. Natural fibers
   D. Virgin wool

28. What is a blend?
   A.* A mixture of several fibers
   B. A way of weaving fabric
   C. A combination of threads
   D. A synthetic fiber

29. What are staple fibers?
   A. Synthetic fibers
   B. Natural fibers
   C. Long fibers
   D.* Short fibers
ASSESSMENT/EVALUATION QUESTIONS

30. What are filament fibers?
   A. Short fibers
   B. Crinkled fibers
   C. Hollow fibers
   D.* Long fibers

31. Why are fibers blended in fabric?
   A. To make it more available to the general public
   B. To use up odds and ends of fibers
   C. All fabrics are blended
   D.* To obtain the good qualities of each fiber

32. All of the following are natural fibers except:
   A. Linen
   B. Silk
   C.* Polyester
   D. Wool

33. What was the first man-made fiber?
   A. Polyester
   B. Nylon
   C.* Rayon
   D. Spandex

34. What are two protein fibers?
   A. Wool, cotton
   B. Spandex, linen
   C.* Silk, wool
   D. Cotton, acetate

35. What fiber is synthetic, very stretchy, lightweight, and durable?
   A. Polyester
   B.* Spandex
   C. Rayon
   D. Linen

36. What fiber is natural, strong, and made by worms?
   A. Linen
   B. Polyester
   C. Cotton
   D.* Silk
ASSESSMENT/EVALUATION QUESTIONS

37. What fiber is synthetic, washes easily, resists wrinkling but retains oily stains?
   A. Nylon
   B. Rayon
   C. Acetate
   D.* Polyester

38. What fiber is natural, absorbent, wrinkles easily, and shrinks in hot water?
   A.* Cotton
   B. Linen
   C. Wool
   D. Rayon

39. What fiber is synthetic, made from wood pulp, and was the first man-made fiber?
   A. Nylon
   B. Polyester
   C. Acrylic
   D.* Rayon

40. What fiber is natural and very warm?
   A.* Wool
   B. Silk
   C. Rayon
   D. Linen

41. What natural fiber is made from a flax plant?
   A. Wool
   B. Silk
   C. Rayon
   D.* Linen

42. Which synthetic fiber is soft, warm, lightweight, and usually used in sweaters?
   A. Acetate
   B.* Acrylic
   C. Rayon
   D. Polyester

43. Which synthetic fiber does not shrink but lacks strength?
   A. Polyester
   B. Nylon
   C.* Acetate
   D. Spandex
ASSESSMENT/EVALUATION QUESTIONS

44. Which synthetic fiber is very strong but tends to build up static electricity?
   A. * Nylon
   B. Rayon
   C. Spandex

45. What are two fibers that burn and char, have an afterglow, form a soft, gray ash, and smell like burning paper?
   A. * Cotton, rayon
   B. Wool, nylon
   C. Polyester, cotton
   D. Flame retardant, wool

4. Review basic types of fabric construction.

5. Study a larger variety of weaving and knitting patterns and the appropriate uses of the end products.

   1. What is the warp of a fabric?
      A. Crosswise threads
      B. * Lengthwise threads
      C. The grain of the fabric
      D. Synthetic fillers

   2. What is the filling of a fabric?
      A. * Crosswise grain
      B. A combination of threads
      C. Something to fill in the holes on an open weave
      D. Lengthwise grain

   3. Which one of these fabrics is NOT a pile fabric?
      A. Corduroy
      B. Velvet
      C. Terrycloth
      D. * Nylon

   4. What basic type of weave has a diagonal design on the surface?
      A. Satin
      B. Plain
      C. * Twill
      D. Pile

   5. Why do "jeans" wear so well for so long?
      - Twill weave is very durable as is cotton. Both are found in jeans.
ASSESSMENT/EVALUATION QUESTIONS

6. Which of the following is a way that fabric is made?
   A. Mercerized
   B.* Woven
   C. Sized
   D. Sanforized

7. When a fabric is woven, which thread is the strongest?
   A.* Warp
   B. Filling
   C. Natural fibers
   D. Synthetic fibers

8. What is another word for grain?
   A. Fibers
   B. Synthetic
   C.* Threads
   D. Warp

9. Identify this weave:
   A. Satin weave
   B. Plain weave
   C.* Twill weave
   D. Diagonal weave

10. Identify this weave:
    A.* Satin weave
    B. Smooth weave
    C. Plain weave
    D. Twill weave

11. Identify this weave:
    A. Regular weave
    B.* Plain weave
    C. Satin weave
    D. Twill weave

12. Cloth made by interlacing yarns at right angles to each other is:
    A.* Woven
    B. Knit
    C. Non-woven

13. Cloth made by interloping one or more yarns is:
    A. Woven
    B.* Knit
    C. Non-woven
ASSESSMENT/EVALUATION QUESTIONS

14. A fabric characteristic that runs both lengthwise and crosswise in every woven fabric is called the ____________.
   - Grainline

6. Study various types and purposes of fabric finishes and their effects on the end product.

   1. When a fabric is finished so that little or no ironing is needed, the fabric has been:
      A. Mercerized
      B. Calendered
      C.* Coated with a durable press finish
      D. Heat set

   2. Fabric finishes may wash out of clothes after several washings.
      A.* True
      B. False

   3. When a fabric is put between two rollers to add a glaze or design, it has been:
      A.* Calendered
      B. Sanforized
      C. Heat set
      D. Sized

   4. When an alkali solution is put on cotton to give it added luster and strength, the fabric has been:
      A.* Mercerized
      B. Calendered
      C. Sanforized
      D. Tentered

   5. When a fabric is set into shapes—like pleats—using heat, it has been:
      A. Calendered
      B. Mercerized
      C.* Heat set
      D. Tentered

   6. What is the finish called when starch is applied to a fabric giving it more body?
      A. Tentering
      B. Heat setting
      C. Napping
      D.* Sizing
ASSESSMENT/EVALUATION QUESTIONS

7. What is the process called that preshrinks cloth so that it won't shrink more than 1 percent?
   A.* Sanforizing
   B. Sizing
   C. Napping
   D. Calendering

8. When a cloth is passed over rollers with wire teeth to pull out the fiber ends to make the cloth fuzzy, the fabric has been:
   A. Sized
   B. Mercerized
   C. Calendered
   D.* Napped

9. When masses of natural fibers are placed in the dye bath, this is:
   A. Tie and dye
   B. Yarn dyeing
   C.* Stock dyeing
   D. Solution dyeing

10. Silk screen is one type of:
    A. Direct printing
    B. Piece dyeing
    C.* Resist printing
    D. None of the above

11. The ability of dye to maintain its exact shade of color throughout the life of a garment is called ________________.
    A. Sanforization
    B.* Colorfastness
    C. Tendering
    D. Mercerizing

12. Treatments or processes applied to fabrics to improve their quality are called __________.
    A. Beginners
    B. Midways
    C.* Finishes

13. A water-repellent finish may close the spaces between yarns in a fabric, making it impossible for perspiration to:
    A. Absorb
    B. Have odor
    C.* Evaporate
ASSESSMENT/EVALUATION QUESTIONS

14. A permanent press garment should be rinsed in _______ water.
   A. Hot
   B. Warm
   C.* Cold

15. Garments that are treated to hold their original shapes, pleats, and creases, are:
   A. Tie-dyed
   B.* Permanent pressed
   C. Heat sensitive
   D. Resilient

7. Identify and name a large number of fabrics.

1. The name of this fabric is:

   (ATTACH SAMPLE)

   A. Gingham
   B. Jacquard
   C. Poplin
   D.* Seersucker

2. The name of this fabric is:

   (ATTACH SAMPLE)

   A.* Gingham
   B. Tricot
   C. Flannel
   D. Corduroy

3. The name of this fabric is:

   (ATTACH SAMPLE)

   A.* Broadcloth
   B. Seersucker
   C. Poplin
   D. Canvas
ASSESSMENT/EVALUATION QUESTIONS

4. The name of this fabric is:
   (ATTACH SAMPLE)
   A. Denim
   B.* Jacquard
   C. Gingham
   D. Corduroy

5. The name of this fabric is:
   (ATTACH SAMPLE)
   A. Tricot
   B. Broadcloth
   C.* Satin
   D. Jacquard

6. The name of this fabric is:
   (ATTACH SAMPLE)
   A. Satin
   B. Jacquard
   C. Broadcloth
   D.* Tricot

7. The name of this fabric is:
   (ATTACH SAMPLE)
   A. Velour
   B. Terry cloth
   C. Oxford cloth
   D.* Flannel

8. The name of this fabric is:
   (ATTACH SAMPLE)
   A.* Corduroy
   B. Oxford cloth
   C. Denim
   D. Flannel
ASSESSMENT/EVALUATION QUESTIONS

9. The name of this fabric is:

(ATTACH SAMPLE)

A. Broadcloth
B. Poplin
C.* Oxford cloth
D. Chintz

10. The name of this fabric is:

(ATTACH SAMPLE)

A. Tricot
B. Satin
C.* Single knit
D. Jacquard

11. The name of this fabric is:

(ATTACH SAMPLE)

A.* Double knit
B. Terry cloth
C. Quilting
D. Tricot

12. The name of this fabric is:

(ATTACH SAMPLE)

A. Flannel
B.* Denim
C. Gingham
D. Flocking

13. The name of this fabric is:

(ATTACH SAMPLE)

A. Velour
B. Felt
C.* Chintz
D. Canvas
ASSESSMENT/EVALUATION QUESTIONS

14. The name of this fabric is:

(ATTACH SAMPLE)

A.* Felt
B. Corduroy
C. Oxford cloth
D. Single knit

8. Use standard terms related to textile technology.

Match the textile term on the left with the correct definition on the right.

1. FIBER ___1___ A fine hairlike substance.
2. FABRIC ___5___ Fibers long enough to be measured in yards.
3. YARN ___4___ Fibers long enough to be measured in inches.
4. STAPLE ___2___ Another term for cloth.
5. FILAMENT ___3___ The result of twisting many fibers together.
6. BLEND ___10___ A family of fibers that share a particular set of characteristics.
7. NATURAL ___11___ The name given to a fiber by a manufacturer.
8. SYNTHETIC ___8___ Fibers made by man from chemicals.
9. SPINNERET ___6___ A combination of fibers to get the best characteristics of each.
10. GENERIC ___7___ Fibers of plant or animal origin.
11. TRADEMARK ___9___ A device through which chemical solutions are forced to make fibers.
12. WARP ___14___ A type of fabric construction which interlaces two or more sets of yarns at right angles.
13. FILLING ___19___ The weave in which each warp yarn passes over four filling yarns.
14. WOVEN ___17___ The weave where each filling yarn passes over and under one warp yarn.
15. KNIT ___16___ A type of fabric made by applying heat, moisture, and agitation.
16. NON-WOVEN ___13___ The crosswise yarns on a loom.
17. PLAIN ___12___ The lengthwise yarns on a loom.
18. TWILL ___18___ A weave with a diagonal rib.
19. SATIN ___15___ Interlocking loops of yarn to make fabric.
ASSESSMENT/EVALUATION QUESTIONS

20. GRAY CLOTH _23_ When the fiber is spun into yarn and then dyed.
21. STOCK DYEING _24_ Cloth is dyed after it is woven.
22. SOLUTION DYEING _22_ Used on synthetic fibers—dye added to solution before spinning.
23. YARN-DYED _20_ Fabric as it comes from the loom, before color is added.
24. PIECE-DYEING _21_ Masses of fibers, such as wool or cotton, are placed in dye bath.

25. DIRECT PRINTING _32_ The design is traced onto a screen and all other areas blocked out before printing.
26. RESIST PRINTING _29_ A watered or wavy pattern created by calendaring two layers of fabric slightly off-grain.
27. EMBOSsing _31_ When a roller press has a plate for each different color.
28. BLOCK PRINT _27_ Using special patterned rolls in the calendar.
29. MOIRÉ _26_ Blocking off certain areas before applying dye.
31. ROLLER PRINT _28_ A design is carved into a block, inked, and printed.
32. SCREEN PRINT _30_ When hot wax is applied to the areas that will not be dyed and the fabric is then dipped into the dye.

33. CALENDERING _39_ The fabric has the ability to absorb moisture.
34. GLAZING _36_ Starch is applied to fabric to give body.
35. NAPPING _33_ When cloth passes between rollers to apply glaze, shine, or design.
36. SIZING _38_ Helps prevent fabrics from clinging and building up static electricity.
37. PERMANENT PRESS _35_ Using rotating wire brushes to create a soft, fuzzy surface.
38. ANTISTATIC _40_ A finish that checks the growth of bacteria and perspiration odors.
39. ABSORBENT _37_ Keeps garments smooth and wrinkle-free.
40. ANTIBACTERIAL _34_ Applying a resin to produce a high polish (glaze) on fabric surface.

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