

Skills for Living

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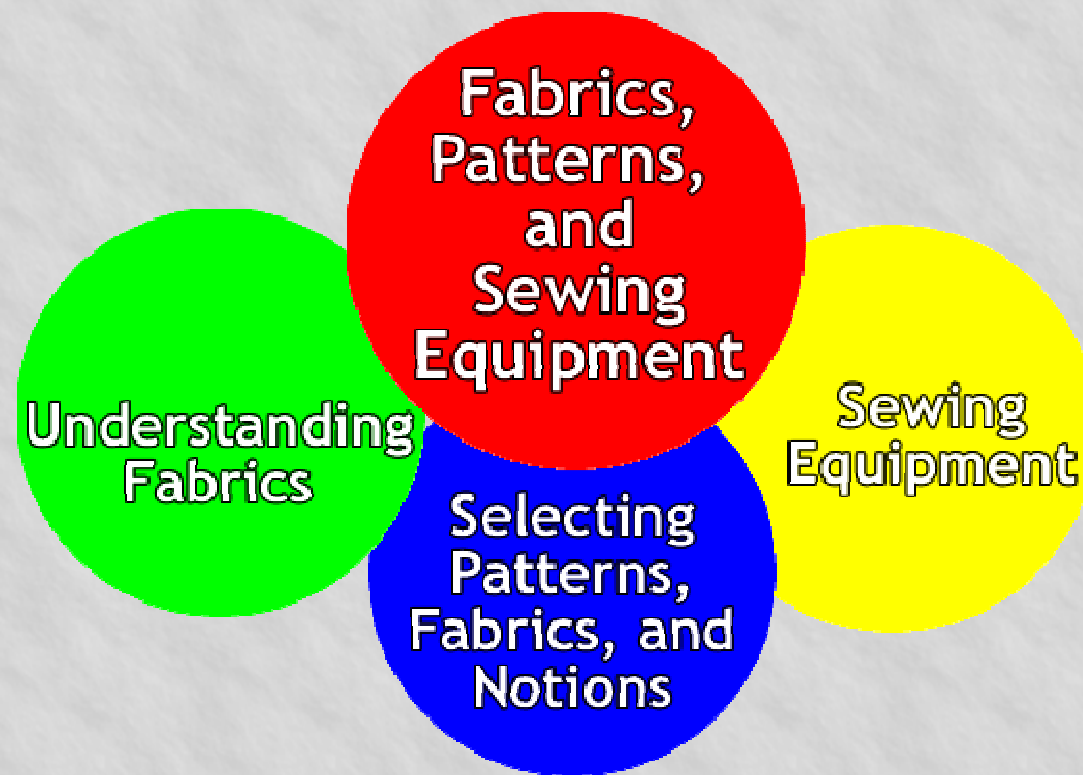
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Chapter 21 Fabrics, Patterns, and Sewing Equipment

- In this chapter, you will learn



Topic 21-1

Understanding Fabrics

- In this topic, you will learn how to select fabrics
 - ❖ **Fibers**
 - ❖ **Yarns**
 - ❖ **Fabric construction**
 - ❖ **Fabric finishes**

Understanding Fabrics

Objectives for Topic 21-1

After studying this topic, you will be able to

- explain how fibers, yarns, and fabrics are produced and manufactured
- distinguish various fabric finishes

Topic 21-1 Terms

- ❖ fiber
- ❖ yarn
- ❖ fabric
- ❖ natural fibers
- ❖ manufactured fibers
- ❖ microfibers
- ❖ spun yarns
- ❖ filament yarns
- ❖ weaving
- ❖ knitting
- ❖ nonwoven fabrics

Fibers

- *Fiber* is the basic unit of all fabrics
- *Yarn* is a continuous strand made of combined fibers
- *Fabrics* are textile products made by weaving or knitting yarns together



Natural Fibers

- *Natural fibers* are those that exist in nature
 - ❖ Cotton comes from the seedpod of a cotton plant
 - ❖ Linen is obtained from the woody stalk of the flax plant
 - ❖ Wool comes from the fleece of sheep
 - ❖ Silk is excreted from the silkworm
 - ❖ Ramie is obtained from the stalks of China grass

Manufactured Fibers

- *Manufactured fibers* are produced through chemical and technical means from natural cellulose or crude oil products
- Some manufactured fibers are
 - ❖ rayon
 - ❖ acetate
 - ❖ acrylic
 - ❖ nylon
 - ❖ polyester

Manufactured Fibers

- A *microfiber* is an extremely thin filament of a manufactured fiber
 - ❖ It has all the characteristics of its original manufactured fiber, plus a luxurious look and feel
 - ❖ Microfiber is available in
 - acrylic
 - rayon
 - nylon
 - polyester

Did You Know...

- According to legend, silk was discovered almost 5,000 years ago by the Chinese Princess Xiling Shi when a cocoon fell into her teacup

Source: Silk Association of Great Britain



Yarns

- *Spun yarns* are made by spinning staple fibers together
 - ❖ *Staple fibers* are short fibers
- *Filament yarns* are made from filament fibers
 - ❖ *Filaments* are continuous strands of fibers

Yarns

- Many yarns on today's market are either blends or combinations
 - ❖ *Blended yarns* are different staple fibers spun together
 - ❖ *Combination yarns* are two different yarns twisted together

Fabric Construction

- Weaving
- Knitting
- Felting
- Fusing
- Braiding
- Knotting
- Quilting



Weaving

- ***Weaving*** is the process of interlacing two sets of yarns to produce a fabric
- There are three basic weaves
 - ❖ plain weave
 - muslin, gingham, linen
 - ❖ twill weave
 - denim, gabardine
 - ❖ satin weave
 - sateen

Knitting



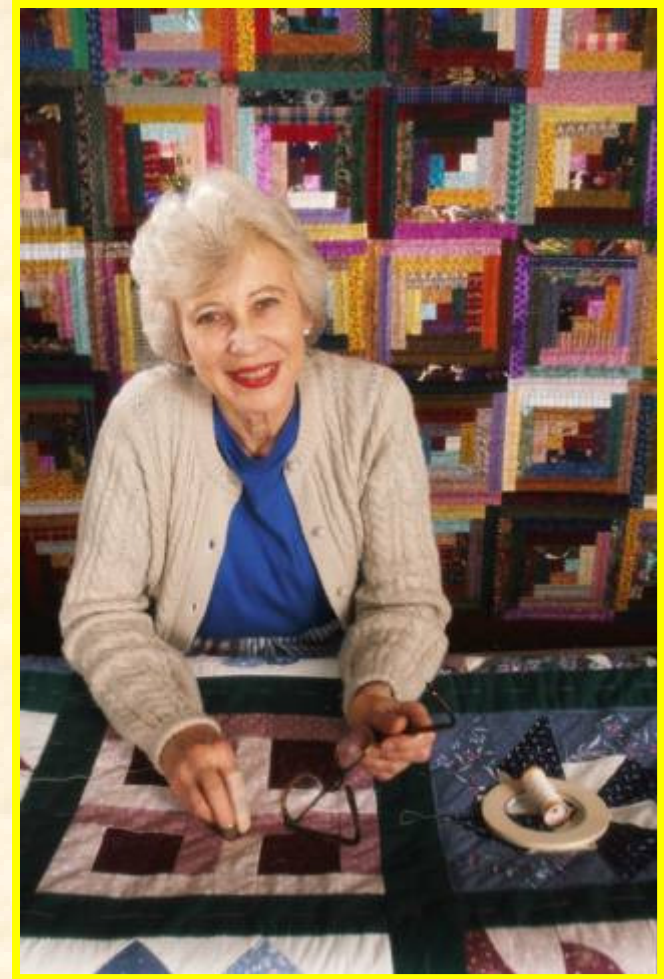
- *Knitting* is the process of looping yarns together to form fabrics
- Knit fabrics
 - ❖ stretch to move and fit with the body
 - ❖ resist wrinkles
 - ❖ may run or snag if threads are broken or pulled

Other Fabric Constructions

- ***Nonwoven fabrics*** are made by pressing, bonding, or interlocking fibers together directly without using yarns
- ***Felt*** results when heat, moisture, agitation, and pressure are applied to wool fibers
- ***Braiding*** is the process of interlacing three or more yarns lengthwise and diagonally

Other Fabric Constructions

- *Laces* and *nets* are produced through knotting, twisting, or looping yarns
- *Quilting* is the process of stitching a layer of insulating material between two layers of fabric



Fabric Finishes

- Common fabric finishes include

- ❖ antistatic
- ❖ bleaching
- ❖ brushing
- ❖ calendaring
- ❖ permanent press
- ❖ flame-retardant
- ❖ mercerization
- ❖ preshrunk
- ❖ stain resistance
- ❖ sizing
- ❖ soil release
- ❖ water repellence

Summary for Topic 21-1

- You need some knowledge about fabrics to be able to appropriately select the fabric for your project, including
 - ❖ content
 - ❖ construction
 - ❖ finishes