

### When to Preshrink Fabric

Many fabrics require **preshrinking** before cutting out a pattern. If this step is not taken, the finished garment will shrink when it is washed. This will result in a garment that is too small.

You may wish to prewash a fabric even if it won't shrink. Prewashing helps remove fabric finishes that could later make the needle sticky and cause the machine to skip stitches. This is especially true for knit fabrics.

Use the following guidelines to help you decide when preshrinking is necessary.

- Preshrink fabric unless the label states that less than one percent shrinkage will occur.
- Fabric labeled *wash and wear*, *crease-resistant*, or *stabilized finish* usually does not need to be preshrunk.
- Fabric made of 100 percent synthetic fibers usually needs no preshrinking. Fabric containing a high percentage of rayon is an exception to this rule, as rayon tends to shrink.
- If fabric has a high percentage of cotton, it should be washed several times. Cotton tends to have residual shrinkage.
- Preshrink all washable knits, as they often shrink due to relaxation of the knit.
- Wool knits can shrink even when they are dry-cleaned. Be sure to steam press or dry-clean them before cutting out a pattern.
- If in doubt about whether or not to preshrink a fabric, test it. Cut two small, identical squares. Wash one square and steam press it dry. Place the two squares together and compare size for shrinkage.

### How to Preshrink Machine Washable Fabrics

Preshrink fabric by using the same method that will be used to launder the finished garment. If the fabric was knitted in a tube, preshrink the fabric before cutting open the tube. If the fabric will ravel, machine stitch along the raw edges using a zigzag stitch before preshrinking. (Machine stitching is discussed in Lesson 11, "Operating the Sewing Machine.") Be sure not to machine dry any fabric that is labeled *drip-dry*, *line dry*, or *dry flat*.

## Lesson

# 4

## Fabric Preparation

### Objectives

This lesson will help you to

- identify grainlines in various types of fabrics.
- state generalizations about cutting out pattern pieces on grain.
- determine whether fabric is on grain.
- identify when grainlines can be straightened.
- determine when fabric should be preshrunk.

### Words to Know

grain  
warp yarn  
lengthwise grain  
selvage

crosswise grain  
weft  
filling yarn  
bias

rib  
course  
raw edge  
preshrinking

### Gathering Information

Fabric must be prepared before cutting out pattern pieces. This preparation may involve two procedures. First, the fabric may need to be straightened. Second, the fabric may need to be preshrunk. If the fabric requires these procedures and they are not done, your finished garment will not fit properly.

#### What Is Grain?

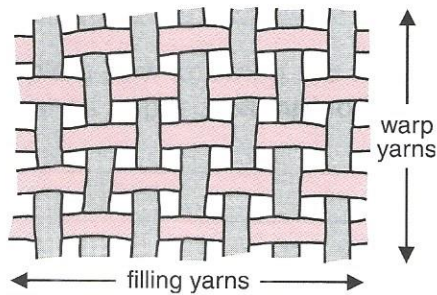
All woven and knitted fabrics and some nonwoven fabrics have direction, or **grain**. The grain is determined by the position of the yarns and fibers in the fabric.

In woven fabrics, the grain must be made straight. Then pattern pieces must be cut out in the same direction as the grain if the garment is to hang properly.

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Woven fabrics are constructed by interlacing yarns at right angles to each other. There are three grain directions.

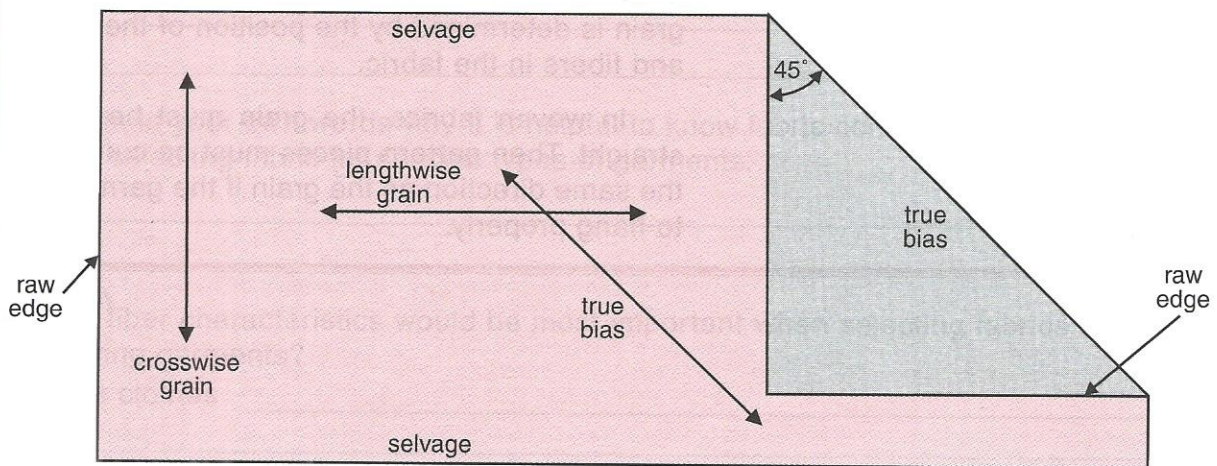
**Lengthwise grain.** The lengthwise yarns, called *warp yarns*, form the *lengthwise grain* in woven fabric. This grain runs parallel to the selvage edges of the fabric. The *selvage* edges are the finished edges of the fabric as it comes off a loom.



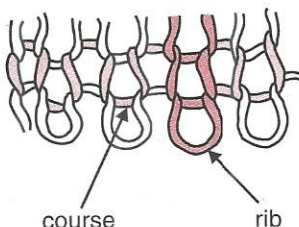
The lengthwise yarns are stronger than the crosswise yarns. They are used to pull the fabric through the loom. Therefore, the lengthwise grain is generally placed on the body in a vertical direction. This direction receives the greatest strain from sitting, bending, and moving.

**Crosswise grain.** The *crosswise grain* is perpendicular to the lengthwise grain. It is formed by the crosswise yarns, which are also called *weft* or *filling yarns*. The crosswise grain tends to be weaker than the lengthwise grain. Therefore, it is usually placed going around the body.

**Bias.** The *bias* runs diagonally across the fabric. True bias forms a 45 degree angle with the lengthwise and crosswise yarns of the fabric. The bias has a great deal of give. On woven fabrics, the bias may be used when a pattern piece requires stretch.



## Grain in Knit Fabric



Knit fabrics are made with a series of interlocking loops. These loops give knits their built-in ability to stretch. They open out when subjected to stress and return to their original position when released. Grain in knit fabrics relates to the direction of the loops rather than to the direction of the yarns themselves.

**Lengthwise grain.** The lengthwise grain can be identified by *ribs* that run the length of a knit fabric. The lengthwise grain usually has less stretch than the crosswise grain.

**Crosswise grain.** The crosswise grain of knit fabrics is perpendicular to the ribs. It is identified by *courses* that run across the fabric.

The direction of greatest stretch, most often the crosswise direction, is usually placed around the body. The direction of the greatest stability, most often the lengthwise direction, is usually placed up and down the body.

**Bias.** Knit fabrics, like woven fabrics, have diagonal, or bias, stretch. The amount of stretch depends on the tightness of the knit and, therefore, varies from fabric to fabric. The bias stretch in knits tends to be unstable so pattern pieces are seldom cut in this direction.

## Grain in Nonwoven Fabric

Nonwoven fabrics are produced by bonding, knotting, or interlocking fibers together by chemical or mechanical means.

There are three common types of nonwoven fabrics.

- Stable nonwovens have equal stability in all directions.
- Stretch nonwovens have stability in the lengthwise direction and stretch in the crosswise direction.
- All bias nonwovens have equal stretch in all directions.

The direction of greatest stability is generally placed vertically on the body.