

Textile

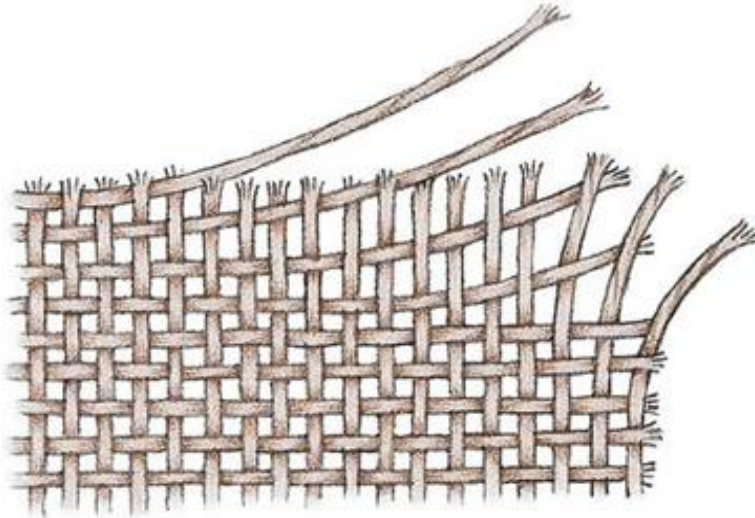
CHAPTER TWELVE

KNIT FABRICS



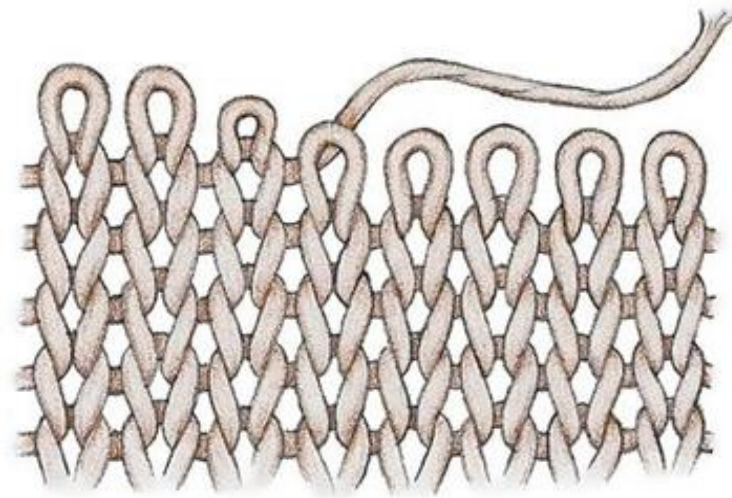
Woven/ Knit Comparison

A woven is made with
interlacing yarns.



woven material

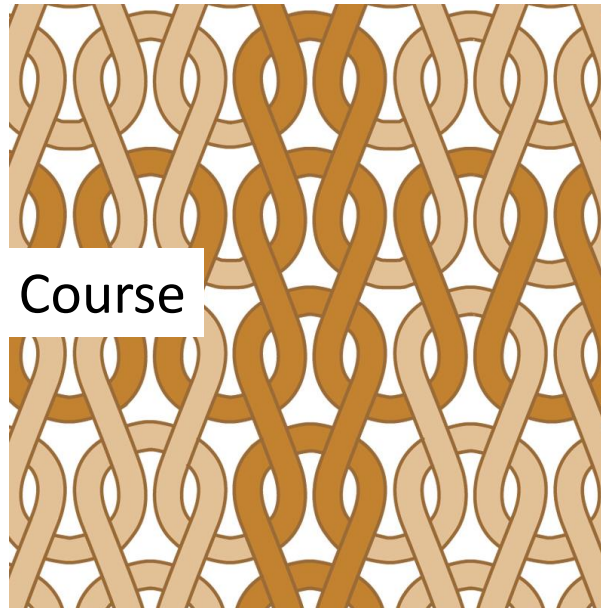
A knit is made with
interlooping yarns



knit material

Woven/ Knit Comparison

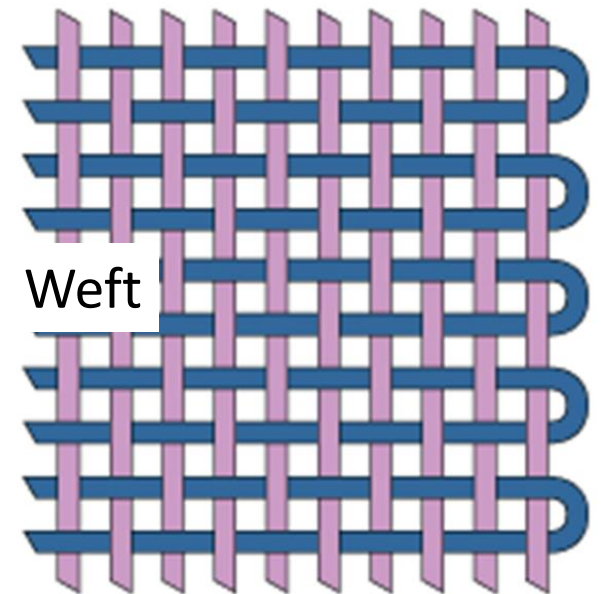
Wale



Wale: The vertical column of loops

Course: The rows of loops across the length of the fabric

Warp



Weft

Woven/ Knit Comparison

| Knits | Wovens |
|---|---|
| Series of interloopings | Series of interlacings; yarns at right angles |
| One or more yarns | At Least 2 sets of yarns |
| Unravels at top or bottom | Unravels at all 4 sides |
| Wales and Courses | Warp and Weft |
| Better resilience, recovers from wrinkling | Better shape retention |
| Better drape | More body |
| More elastic | More stable |
| More porous/breathable | More wind-resistant/insulating |
| Prone to snagging and runs | Prone to seam slippage |
| Possible to make one garment without cutting and sewing | Garments have to be cut and sewn |

Woven/ Knit Comparison



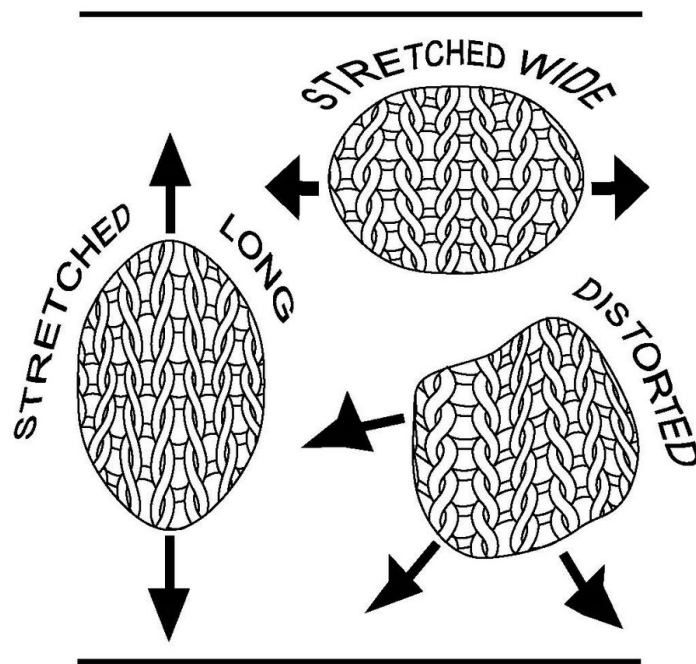
Woven/ Knit Comparison

Differences Between Knits and Wovens- Runs & Seam Slippage



Left: Runs in a knit tight
Above: Slippage in a
seam of woven material

Woven/ Knit Comparison



- All knits can stretch, even without spandex
- All because of the loops!
 - However, remember stretch and recovery are different!

| | | | | | | | | | |
|--|----|----|----|----|----|----|----|----|----|
| | 1" | 2" | 3" | 4" | 5" | 6" | 7" | 8" | 9" |
|--|----|----|----|----|----|----|----|----|----|

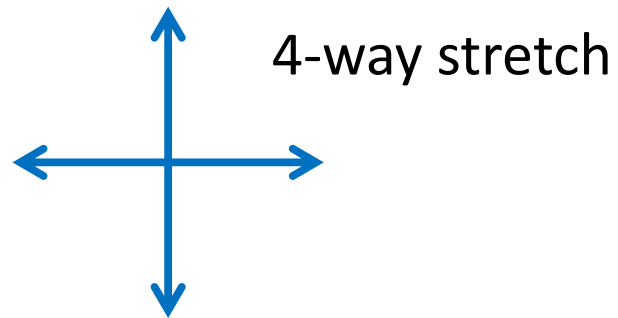
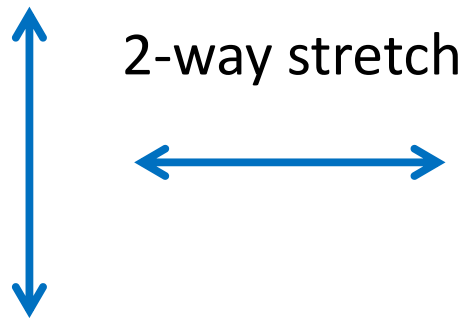
Standard Stretch Chart

| | |
|---|---|
| <p>Fabric with 20% stretch across the grain such as Single knit, double knit, Interlock</p> <p>4" of knit fabric should stretch to at least here</p> | → |
| <p>Fabric with 25% stretch across the grain such as Nylon tricot, Nylon sheer, Interlock Velour</p> <p>4" of knit fabric should stretch to at least here</p> | → |
| <p>Fabric with 35% stretch across the grain such as Sweater fabric, Velour, Terry, Interlock</p> <p>4" of knit fabric should stretch to at least here</p> | → |
| <p>Fabric with 40% stretch across the grain such as Swimsuit fabric, fabric with Spandex or Lycra</p> <p>4" of knit fabric should stretch to at least here</p> | → |
| <p>Fabric with 50% stretch across the grain such as Swimsuit fabric, fabric with Spandex or Lycra</p> <p>4" of knit fabric should stretch to at least here</p> | → |
| <p>Fabric with 120% stretch across the grain such as Swimsuit fabric, fabric with Spandex or Lycra</p> <p>4" of knit fabric should stretch to at least here</p> | → |

Stretch

Stretch of a fabric can vary by:

- Degree of stretch (see Table 12.2)
- Direction of stretch

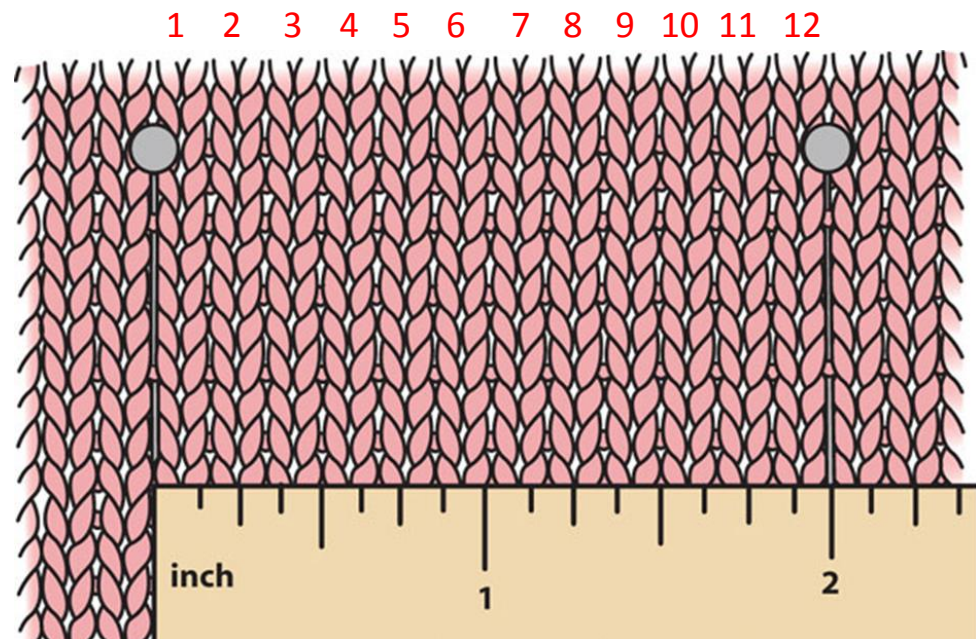


Fabric Gauge

Fabric Gauge = the number of wales per inch

Higher the number, smaller the wales, finer the fabric.

Lower the number, larger the wales, chunkier fabric.



Measurement

GSM: Grams per Square Meter

Higher the GSM, thicker the fabric

Measurement can be used for both woven and knit



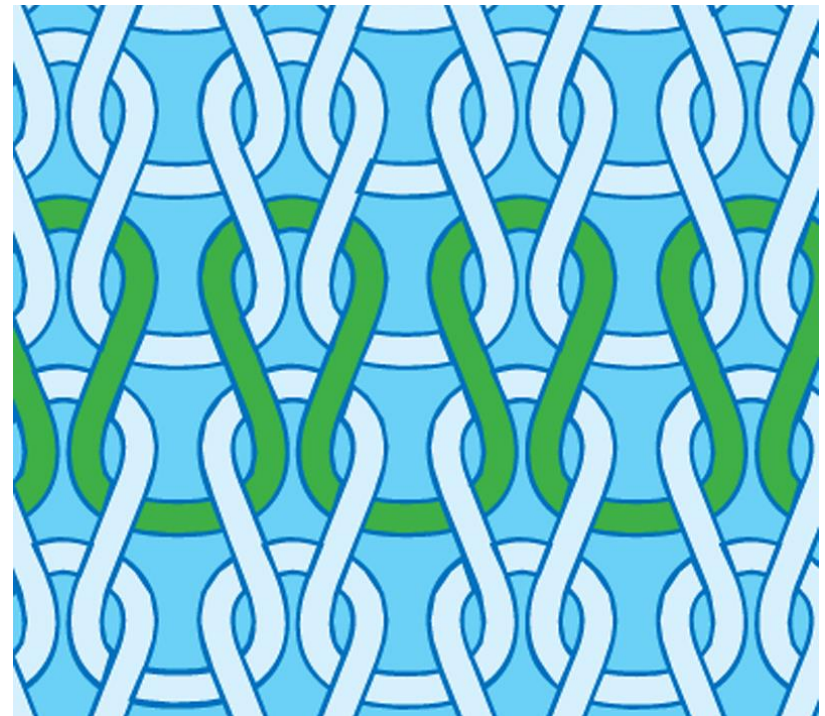
Knit Construction: Weft Knits

Weft Knits or filling knits are made in the weft or horizontal direction.

Hand knitting is weft knitting

Weft knitting allows an entire garment to be made from a single yarn.

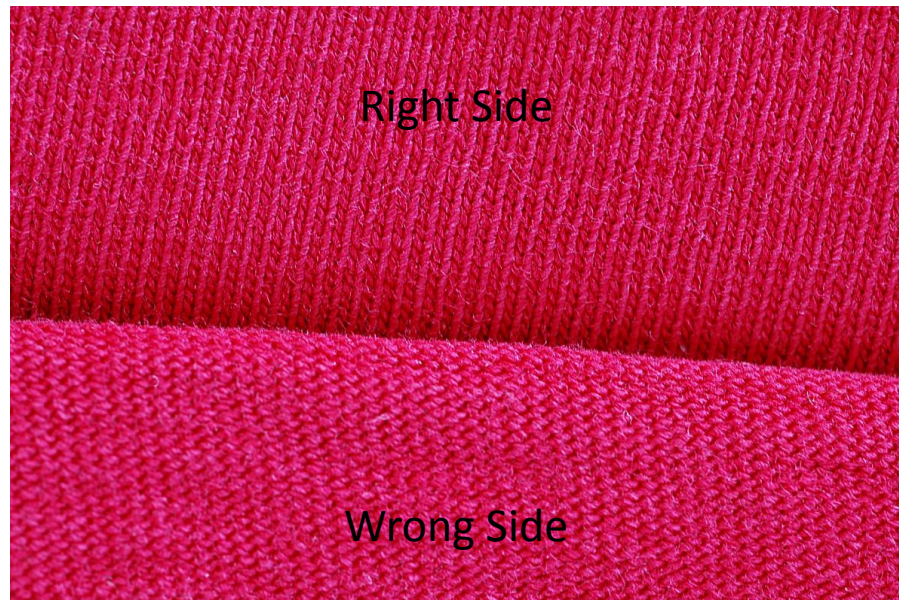
Used most commonly in the production of sweaters, sportswear, and hosiery markets.



Basic Weft Knit Fabrics

Jersey is a fabric made with only knit stitches. The face of the fabric has wales and is smoother than the back which is made of courses.

Made with only knit stitches



Jersey Uses

Sheets
Sweaters
T-Shirts
Underwear
Dresses
Hosiery



Knit Construction: Warp Knits

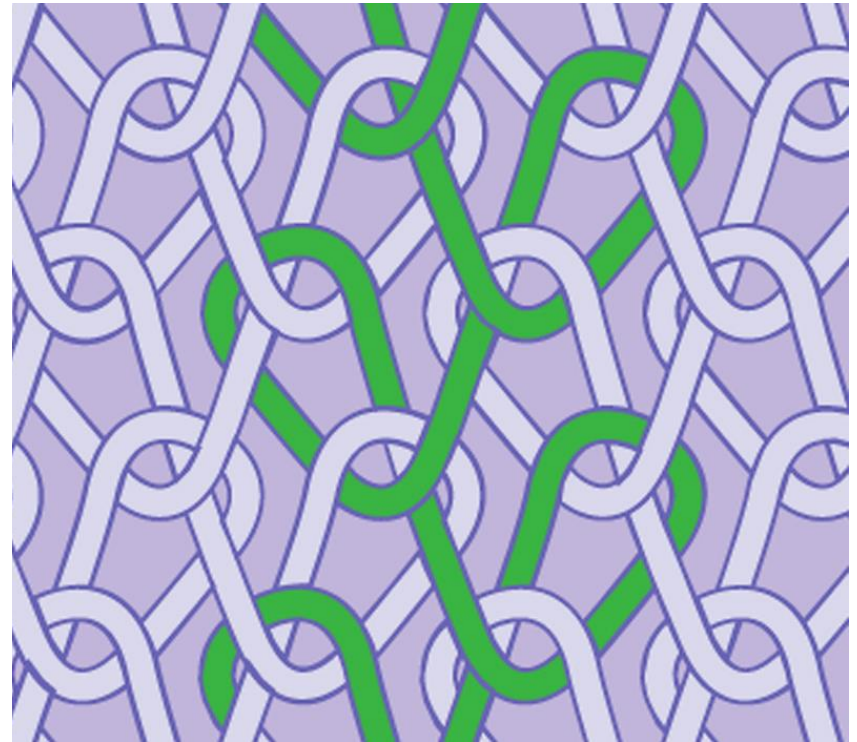
Warp knitting is constructed in the warp or vertical direction.

Each wale requires its own yarn.

The yarns move vertically in a zigzag pattern

Because of this they will not run or ravel

Warp knits are used in the production of swimwear, athletic wear, lace and lingerie

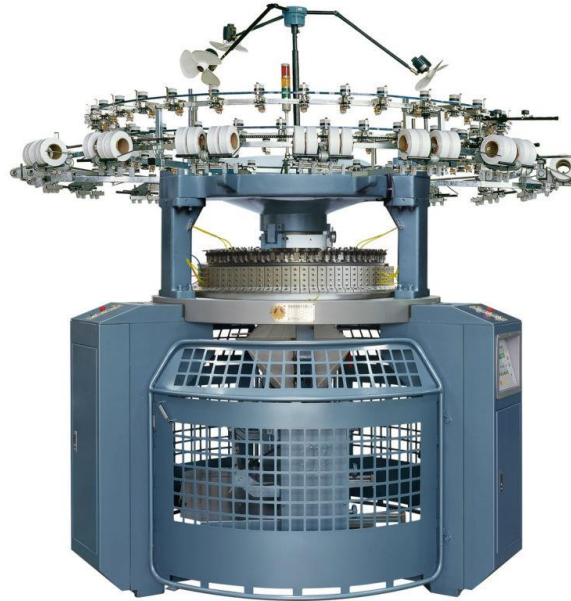


Knitting Machines

Flat Bed Knitting Machine



Circular Knitting Machine



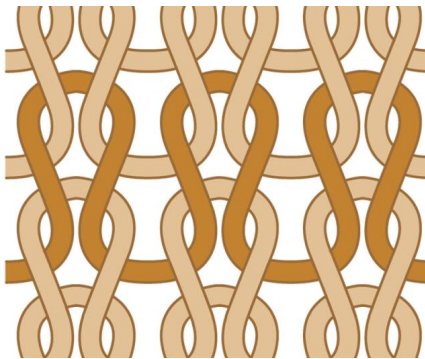
How It's Made: Socks

<https://www.youtube.com/watch?v=8w9avEb211U>

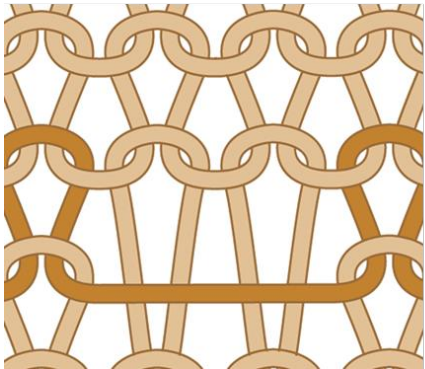


The Four Basic Knit Stitches

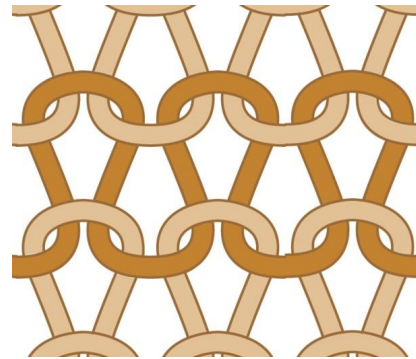
Knit



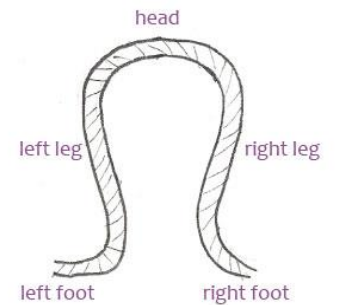
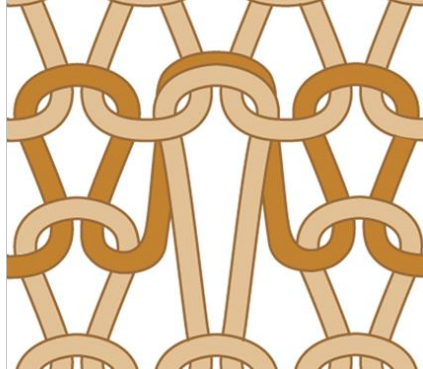
Miss



Purl



Tuck



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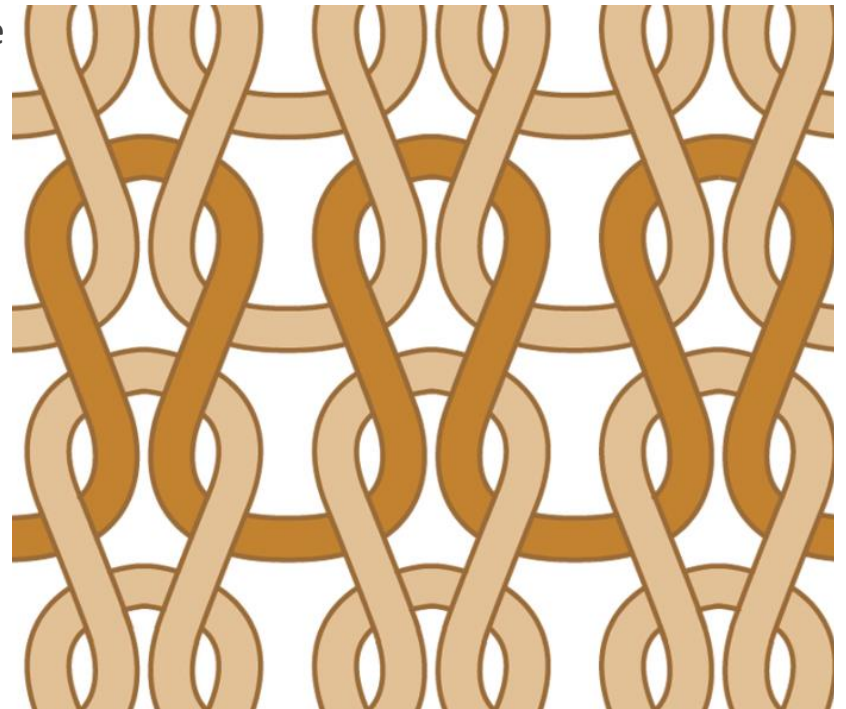
The Four Basic Knit Stitches

Knit Stitch: Have wales on the front and courses on the back.

Wales are vertically oriented

Courses are horizontal

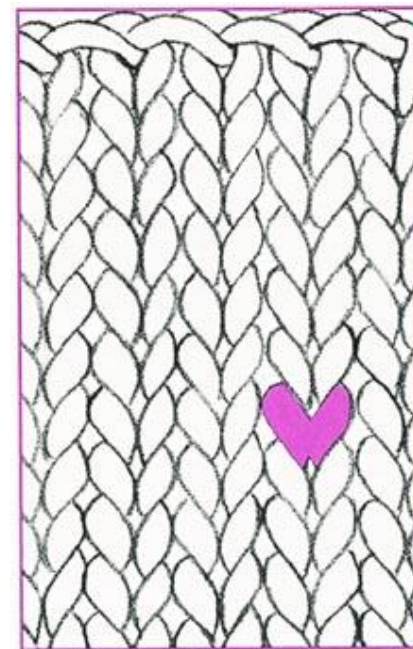
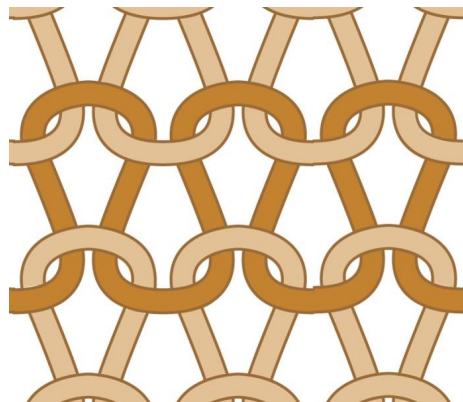
This stitch is the foundation of Jersey knit



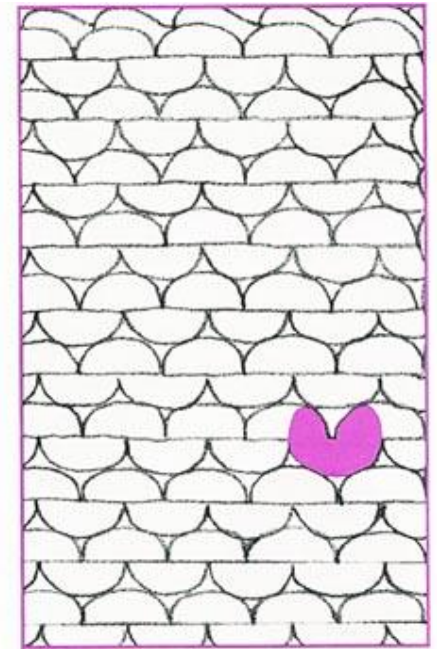
The Four Basic Knit Stitches

Purl Stitch: The opposite of the knit stitch.

They have courses on the front and wales on the back



KNIT SIDE



PURL SIDE

Fabrics Made With Knit and Purl Stitches

Rib knit- made with alternating wales of knit and purl stitches.

Knit stitches pop out from the fabric while purl stitches sink into the fabric.

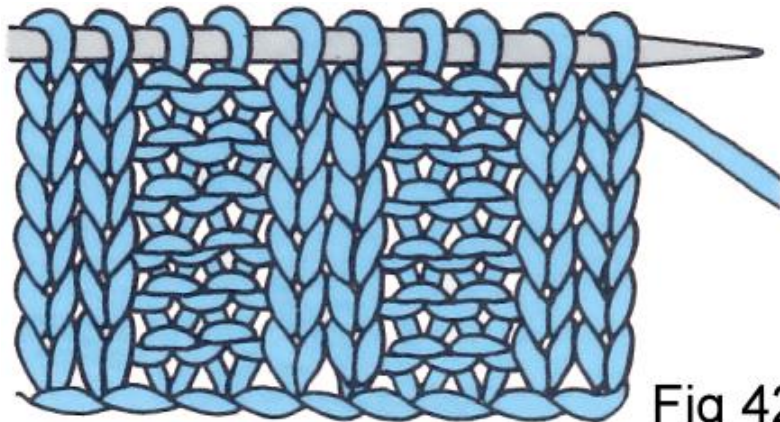


Fig 42



Ribs are reversed on the back

Rib Knit Uses

Collars
Necklines
Cuffs
Knit hats
Socks
Bottom edges of sweaters



Fabrics Made With Knit and Purl Stitches

Purl-knit- made with both knit and purl stitches, but made in a way where courses are visible from both the front and the back.



Uses of Purl Knit

Infant and children's wear

Sweaters

Scarves

Hats



The Four Basic Knit Stitches

Miss Stitch: A skipped stitch in the course, creates a float.

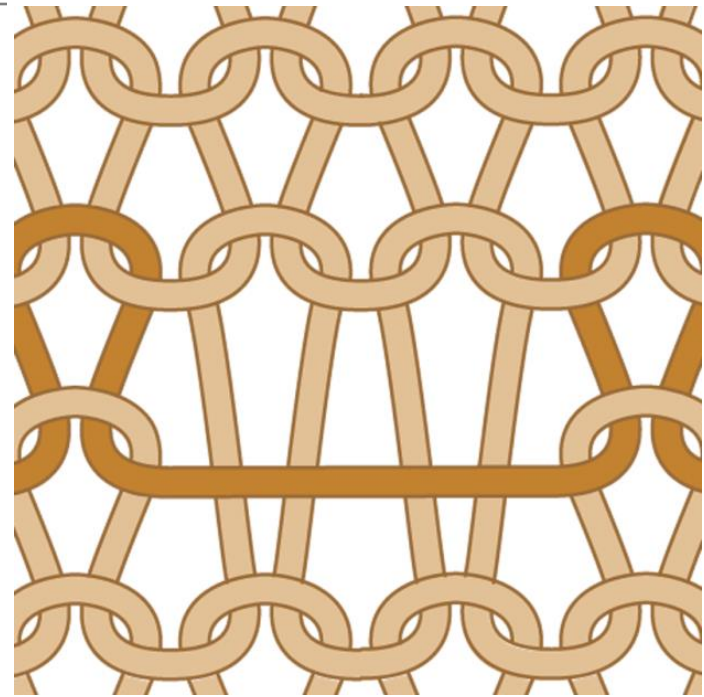
Also known as a float stitch.

Miss stitches are used to create color effects.

Front



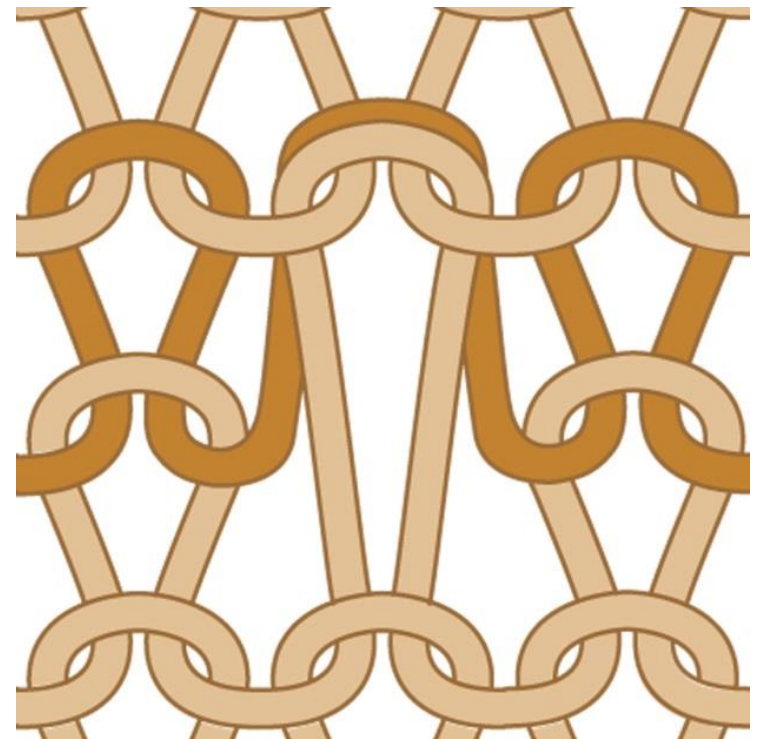
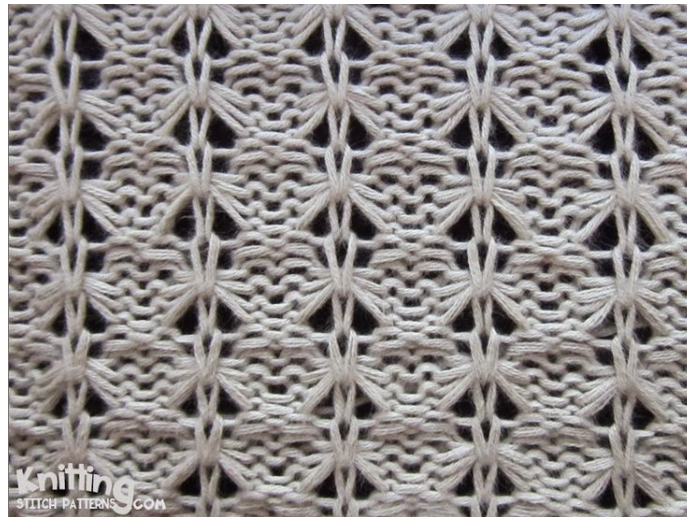
Back



The Four Basic Knit Stitches

Tuck Stitch: a skipped stitch in the wale, creates an elongated loop.

This stitch is used to create lacy, textural design effects.



Textiles

CHAPTER THIRTEEN

SPECIALTY WEFT KNITS



Specialty Weft Knits

Basic weft knits

Jersey knit

Rib Knit

Purl Knit

Specialty weft knits

Interlock

Double Knit

Pile Knit



Interlock

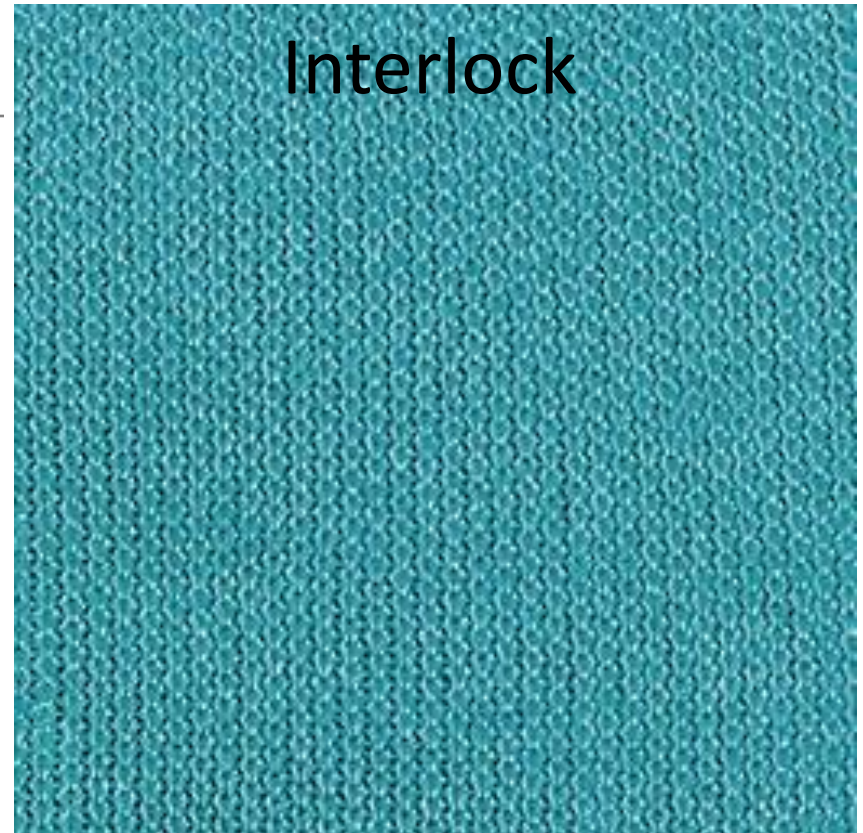
Interlock is a double knit fabric and both faces look identical.

Resembles a rib knit

Smoother than regular rib knits- good for printing

More stable than jersey- ends do not unravel or curl

Good lengthwise (up and down) stretch



Double Knit

Knit fabric with 2 faces simultaneously knitted at the same time.

Both sides are useable, and sides do not have to be identical

Thicker and heavier than single knits

Lengthwise stretch, very little crosswise stretch

Very stable- resistant to running and unraveling



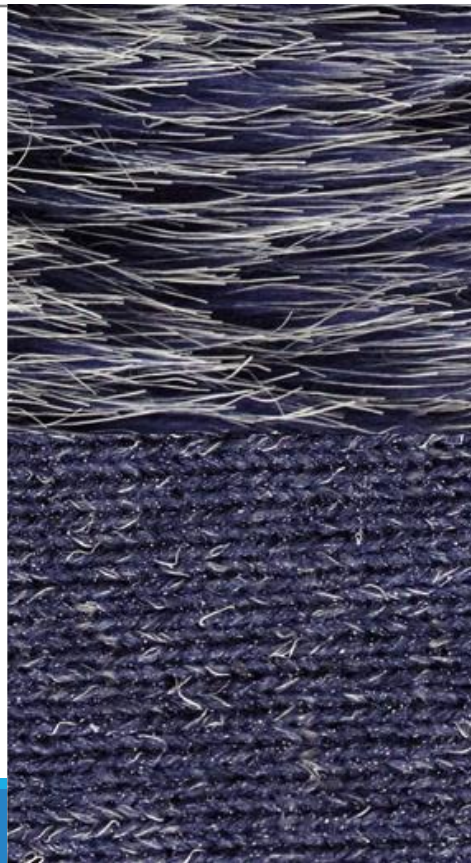
Pile Knits

Very similar to pile weaves except that the ground is knitted, not woven.

An extra set of yarns are used to create loops that form a three dimensional surface on the fabric.

These loops can be preserved, or sheared and napped (brushed) for a more luxurious and softer surface.

More stretchy and pliable than woven piles.



Front

Back

Swatches 140 - 144

