

Knitting	Weaving
<p>9. In knitted fabrics, a single loop if broken will start a run and spoil the whole fabric.</p> <p>10. Designs can be changed very rapidly therefore, changed fashion demands can be met quickly.</p> <p>11. Knitting is faster than weaving. Plain knitting is up to 5 times faster.</p>	<p>In woven fabrics, yarns are not interconnected. Hence such a problem does not arise.</p> <p>Special looms are to be designed for a new weave therefore, changes cannot be very quick. Weaving is comparatively slow.</p>

Knitted techniques are mainly of two types :

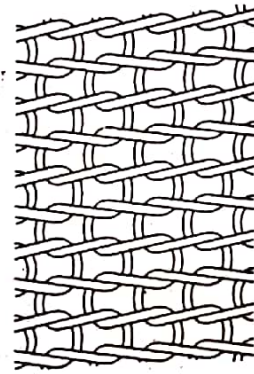
1. West-knitting – in which one continuous yarn forms courses across the fabric.
2. Warp-knitting – in which series of yarns form wales in the length-wise direction of the fabric.
 1. West knitting : West knitting is so called because just one yarn forms continuous rows of loops in the horizontal direction as west in weaving. The hand method of knitting is west knitting. On a knitting machine, the individual yarn is fed to one or more needles at a time. There are three fundamental stitches in west knitting :
 - (i) Plain knit stitch
 - (ii) Purl stitch
 - (iii) Rib stitch

(i) Plain knit stitch

(ii) Purl stitch

(iii) Rib stitch

(i) Plain knit stitch : The plain knit is the basic form of knitting in which a loop is drawn through the front of the previous one. It can be produced in flat-knit or circular form. The flat-knit is also called the jersey stitch. In this, the knitting is done on a flat-bed knitting machine which has a row of hooked needles arranged at an even distance in a linear position on the needle plate. These needles move up turn by turn to accept the yarn from the yarn feed thus forming one row of loops on each passage. Since all the needles of such a machine face one way, all the loops produced also face in one direction and the fabric has a distinct smooth surfaced at the face and interlocking rows of opposing half circles at the back (Fig 4.23). A circular knitting machine is used for making circular or tubular fabrics and is more efficient as compared to flat knitting machine.



Yarn layout

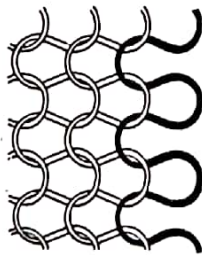


Plain knitted fabric

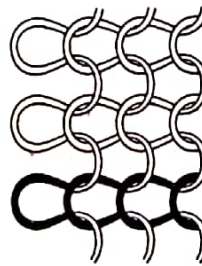
Fig. 4.23 Plain knit stitch

Plain-knit fabrics have great stretch and are comfortable to wear but they may sag at areas of greater pressure and also have the tendency to curl towards back from the sides and towards the face from the top. If a yarn is broken in the plain-knit, the broken loop will drop downwards and a vertical run will

number of such hooks that are evenly spaced, the spacing being proportional to the size of the stitch. The length-wise rows of interlocking loops are called wales and the rows running crosswise are called courses (Fig 4.22). Wales are similar to warp and courses to weft in weaving. The number of wales and courses per square inch of knitted fabric is called the Gauge. It determines the density of the fabric. The higher the number, the finer the fabric. All other factors of yarn and knit type being equal, the fabric that has more wales in it, is more rigid and stable in width and the fabric with more courses in it is more rigid and stable in length.



A. Courses



B. Wales

Fig. 4.22. Courses and Wales

The quality of knitted fabric is affected by quality of the needles also. The thickness, length and the closeness of needles in the knitting machine affects the appearance, texture and durability of the knitted fabric.

Comparison of knitting and weaving techniques

Knitting	Weaving
<p>1. Knitting is done by interlocking the loops.</p> <p>2. A single thread is used to form the loops.</p> <p>3. Knitted fabrics are quite stretchable. They can stretch in any direction to fit the body comfortably and provide more room for movement.</p> <p>4. Knitted fabrics provide warmth because of insulation provided by air entrapped in them, because of construction technique.</p> <p>5. Knitted fabrics are not wind proof unless heavily napped. Thus they are porous and provide breathing comfort during body movements.</p> <p>6. Knitted fabrics are very absorbent, light in weight and wrinkle resistant.</p> <p>7. Knitted fabric tend to shrink unless gone through special shrink-proof processes.</p> <p>8. Some knitted fabrics tend to lose their shape and sag.</p>	<p>Weaving is done by interlacing the yarns.</p> <p>At least two sets of yarns are used – warp and filling.</p> <p>Stretchability is very less that also in diagonal direction (bias).</p> <p>Warmth is due to the inherent property of the fibre e.g. wool. Weave does not provide any warmth.</p> <p>Due to the compactness in construction, woven fabrics are less porous and do not provide much breathing comfort.</p> <p>Absorbency and wrinkle resistance are not due to the weave but due to the fibre characteristics and finish.</p> <p>Woven fabrics do not shrink unless stretched.</p> <p>Woven fabrics retain their shape and do not sag easily.</p>