UK COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF KENTUCKY — COLLEGE OF AGRICULTURE

Sewing with Knit Fabric

Knits are an important part of every wardrobe because they are comfortable to wear and easy to care for. Because of their elasticity, knit garments do not require a lot of fitting and they shed wrinkles well. Most knits do not ravel, making them quick and easy to sew. Knits are versatile and can be seen in everything from the most casual wear to the dressiest of clothing attire. They come in a variety of fabrics that vary in texture, elasticity, fiber content, weight, and design.

Made from interlocking looped stitches, knit fabrics do not have lengthwise and crosswise yarns like woven fabrics. Instead, the interlocking loops of yarn create lengthwise ribs called **wales** and crosswise lines called **courses**. In single knits, the wales are visible from the right side of the fabric and the courses are visible on the fabric's wrong side.
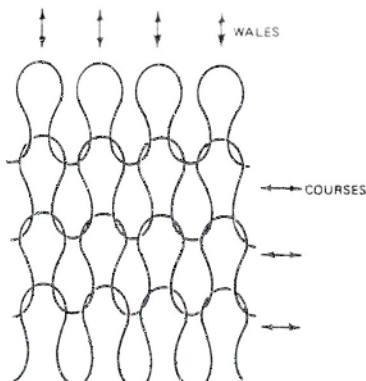
A single yarn or set of yarns is looped together.

Knit fabrics are either weft or warp constructed. The type of fiber used as well as the method of construction affects the amount of stretch in each. **Weft knits** include single knits, double knits, and rib knits and are created by inter-looping the crosswise or filling yarns. Knitting can be done flat or in the round, creating a tube which is often cut to form a flat fabric. **Single knits** are created by knitting

machines with a single bed of needles. Fabrics such as jersey look different on the reverse side and their edges tend to curl. **Double knit** fabrics are constructed on machines with two beds of needles, back to back. Double knits generally look the same front to back, are more stable than single knits, and the cut edge doesn't curl. Interlock knits are made from fine lightweight yarns, while other double knits are heavier in weight. Velour, terry knit, and sweatshirt fleece are double knit but tend to curl because they have a single knit base and look different from front to back.
Rib knits are created by alternating knit and purl stitches in various combinations. They may look the same or different front to back, edges don't curl, and they may stretch 100 percent in the crosswise direction. Rib knits are generally used for band trims around necklines, armholes, and hemlines but can also be used for form fitting garments.
Warp knits are created by inter-looping the warp yarns. They are knitted flat rather than in a tube. **Tricot** and **raschel** knits are the most common types of warp knits but look completely different because of the types of yarns used in knitting. Raschel knit is a novelty knit with textured yarns, recognized by its lacy construction. Whereas tricot knit is a lightweight knit with lengthwise ribs on its face.

Knit fabrics are typically classified by their amount of stretch.
- **Firm, stable knits** have very little stretch and are handled much like woven fabrics. These may include double knit, sweatshirt knit, boiled wool, and raschel knit.
- **Moderate stretch knits** are those that stretch about 25 percent in the crosswise direction. Moderate stretch knits allow enough stretch for comfort but are not intended to conform to body

contours. These may include lightweight single knits such as jersey and warp knits such as tricot. Interlock knits are lightweight and drapable, slightly heavier than jersey knit, and don't curl at the edge, making them easier to handle than jersey knit. However, runs may form on the crosswise edge. Fleece is a double-napped knit that has a moderate amount of stretch.

- **Two–way stretch knits** may have up to 50 and 75 percent stretch in the lengthwise direction and up to 50 to 75 percent in the crosswise direction. Typically used for leotards, swimsuits, and bodysuits; they can also be used for other form fitting garments.
- **Super stretch knits** stretch 100 percent or more in both directions. Spandex and latex add the extra elasticity to these knits. Super stretch knits are used for performance enhancing sportswear and ski wear.

CHOOSING PATTERNS

Patterns designed for knits generally have fewer pieces and less shaping details, making them quick to sew. Look for the words "For Stretch Knits Only," and always check the pattern envelope for suggested fabrics. Patterns designed for stretch knits have less ease built in than patterns for stable knit and woven fabrics. Facings are often replaced by ribbing, binding, or turned and stitched necklines. Zippers are a more suitable closure than buttons and buttonholes. If these features are not included, choose a pattern that does or one that can be adapted for them.

Most patterns designed for knits will include a stretch gauge printed on the back of the pattern envelope. Follow the guidelines for recommended stretch. If the pattern does not have a stretch gauge, it was likely designed for stable knit or woven fabric.

The amount of ease built into the pattern design is based on the number of inches or the percentage stretch the specific knit will stretch. If the fabric has more stretch than recommended, the garment may fit looser. If less stretch, then the garment will fit tighter.

Please refer to the stretch gauge chart on page 8. To use the gauge, avoid stretching along the cut edge by folding the fabric back about 4 inches. Most gauges use a 4-inch measurement to check the degree of stretch. Place the folded 4-inch section against the 4-inch section on the gauge and gently stretch towards the right end to see if the fabric has adequate stretch for the pattern. If the folded edge starts to curl, you have stretched the fabric too much. This guide tells you the minimum amount of stretch needed for the pattern. If the knit stretches a little beyond the mark, it is still suitable for the pattern. Generally, stable knits stretch ½ inch or less (10 percent), moderate-stretch knits stretch 1 to 1 ¼ inches (25 to 35 percent), super stretch and two-way stretch knits will stretch 2 or more inches in both directions (50 to100 percent).

Check for fabric recovery after stretching. When the fabric is released, it should spring back to its original size. If the fabric remains distorted, it will likely stretch out of shape with handling and wear and should be avoided.

Swimsuits and leotards require knits with two-way stretch. Often, two-way stretch nylon spandex has a greater amount of stretch in the lengthwise direction while cotton spandex has greater stretch in the crosswise direction. Use the stretch gauge for the direction indicated on the pattern envelope. There may be separate gauges for lengthwise stretch and crosswise stretch. As with all knits, the greatest amount of stretch should go around the body.

If lining fabric is required for the pattern, be sure that it also meets the recommended stretch guidelines.

PREPARING THE FABRIC

Washable knits tend to shrink more often and to a greater degree than woven fabrics. Always purchase extra yardage to allow for shrinkage. For best results, wash and dry the fabric as you would the finished garment. Washing also helps to relax the fabric and removes fabric sizing. Excess sizing can cause skipped machine stitches. Preshrink trim, interfacing, lining, and other notions that will be used in the garment. Generally, rib knit should not be prewashed if being used as a trim. Washing softens it and makes it difficult to cut accurately.

Blocking Knits

Mark "grainline" by marking along a course near each cut end of the fabric. Cut the edges of the fabric so they are straight with the course. Fold the fabric so the lengthwise edges and the cut crosswise edges are even. If the fabric is a tubular knit or doesn't have an open edge, the fabric can be cut along a lengthwise wale or rib-line. Do not use the fold as a guide for cutting because it may not be straight.
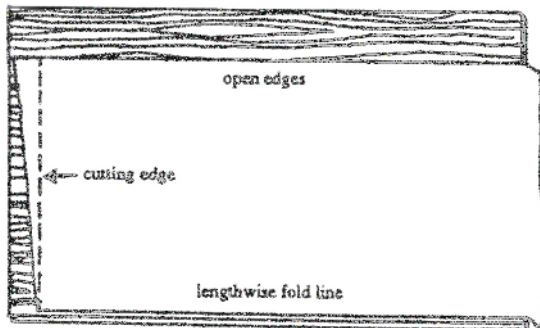
Fold knit fabric to check for straightness, and to straighten if necessary.

Lay the fabric on a blocking board or on a similar padded surface with the lengthwise and crosswise edges pinned to the surface at right angles to each other. If the fabric has wrinkles or is stretched to create the rectangular shape, it is not completely straight of grain and should be blocked. Hold a steam iron about ½ inch above the fabric to steam fabric in place. Let the fabric rest until completely cool and dry so it will retain its shape. If the blocking surface is smaller than the amount of fabric, block the fabric in sections from one end to the other.

Layout, Cutting, and Marking

Determine if the knit has a right and wrong side. Jersey and tricot knits have lengthwise ribs on the right side and crosswise loops on the wrong side. Most knits will curl to the right side when stretched along the crosswise cut edge. If the right side is undetectable, designate one side to be the wrong side by marking with chalk or tape.

Fold the knit fabric with right sides together, making sure that the wales and courses are perpendicular to each other. It may be necessary to fold small sections at a time or cut pieces out separately to ensure that all pattern pieces are cut "on grain." If the lengthwise fold or crease remains after prewashing and steaming, it is likely to be permanent. Fold knit in such a way as to avoid the crease when cutting. Do not let knit fabric hang over the edge of the cutting table. The weight of the fabric will cause it to be distorted. Roll extra fabric up along one end to prevent fabric overhang.

Lay out all pattern pieces going the same direction by following the "with nap" layout. Use fabric weights or use ballpoint or sharp, fine pins along seam allowances to secure pattern pieces for cutting. Be careful not to stretch fabric

while cutting. A rotary cutter and mat make cutting out knits easy and eliminates movement and distortion.

There are a variety of marking methods. Try pins, water-soluble marking pens, tailor's tacks, or hard milled soap slivers. Test marking pens on scrap fabric to be sure the ink can be removed before using on fashion pieces. Mark the wrong side of each garment piece with tape.

NOTIONS FOR KNITS

As with any project, using the appropriate notions will help in achieving the best results.

- **Pins:** Use ballpoint pins on knit fabric. The rounded points on these pins separate the yarns instead of piercing them, creating holes in the fabric.
- **Needles:** Universal sewing machine needles stitch well on most knit fabrics. Ballpoint needles like ballpoint pins have a rounded tip

Ballpoint Needle

Regular Needle

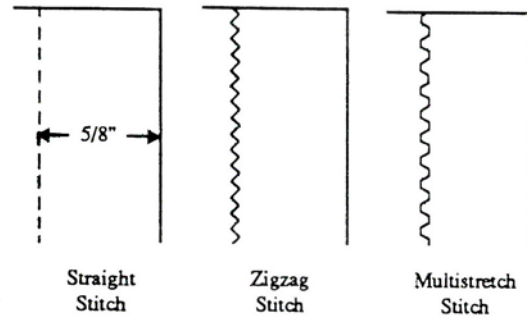Use a ballpoint needle with knits.

that eliminates snagging, and stretch needles work well to prevent skipped stitches. If skipped stitches are a problem, use a larger needle or try a needle lubricant. All these needles come in a variety of sizes from 60 to 90. Needle size will depend on fabric weight. The finer the fabric, the smaller the needle and thread should be.

Stretch twin needles come in various widths and are great for topstitching hems.

- **Thread:** For lightweight knit use extra fine polyester or polyester/ cotton thread; for medium weight knits use an all-purpose polyester or polyester/cotton thread. Mercerized cotton thread does not have as much stretch as synthetic thread. Using a textured nylon thread in the bobbin to sew a plain seam makes it more elastic. Textured nylon thread gives a nice soft edge to serged seams and can also be used in the bobbin when working with a twin needle. Be sure to wind bobbin slowly to prevent thread from stretching, which can cause puckered seams in the finished garment.
- **Elastic:** Elastics differ in their stretch and recovery characteristics. Braided elastic narrows when stretched and can lose stretch and recovery if it is pierced when stitched. Knitted and woven elastics retain their original width when stretched. Non-roll elastic is appropriate for pull-on pants and skirts. Transparent elastic works well when topstitched and can stretch up to four times in length. It can also be used to stabilize seams when not stretched. Elastic used in swim-wear should be chlorine resistant.
- **Interfacing:** The choice of interfacing is determined by the purpose and the relationship to the general characteristics of the fashion fabric. More than one type of interfacing may be needed within the same garment. Select interfacings such as a fusible tricot or a stretch non-woven to stabilize areas such as

necklines, collars, cuffs, plackets, and buttonholes. Consider the weight, stretch, and care requirements of the knit as well as the desired finish. Since fleece does not tolerate heat well, a sew-in interfacing is recommended. To determine its compatibility, always test a swatch of fabric with the chosen interfacing before using in the garment.

SEWING TECHNIQUES

Seams and seam finishes for knits must stretch with the knits or broken stitches will occur. Check the pattern for recommended seam allowance. Some patterns designed for knits will have ¼-inch seam allowances, eliminating the need for trimming but also eliminating any margin for adjusting size. Select a seam with enough stretch for the fabric.

Sergers are great for sewing knits. A three- or four-thread serger stitch will give a quick, durable, professional finish to seams while maintaining stretch. Adjusting the differential feed on the serger prevents seams from stretching too much and becoming wavy. Sergers and cover stitch machines allow you to duplicate techniques found in ready-to-wear, such as the flat lock or double-sided flat seam.

The conventional sewing machine is also quite capable of producing seams on knit fabric. Use a plain seam for stable and moderate-stretch knits. For lighter weight knits and some medium-weight knits, use a double-stitched seam using a straight stitch, zigzag, or a twin needle. Stitch on the seam line and $\frac{1}{8}$ inch away. For greater elasticity in

seams, stitch length can be shortened slightly.

Straight Stitch — Zigzag Stitch — Multistretch Stitch

Since knit fabric doesn't ravel, seam finishes are optional. However, if the cut edges curl, serge the seam or sew two rows of stitching ¼ inch apart and trim close to the second stitching line. A wide zigzag stitch or one of the utility or overlock stitches found on most machines will also work to finish the edges. For best results with the overlock stitch, trim seam to ¼ if needed, and use the proper overlock foot for the machine to guide the raw edges along as the stitches are formed over the edge of the fabric. Reducing the foot pressure slightly on soft loose knits will help prevent seams from stretching and being wavy.


1/4" Trim — Seam Finishes

eredge Stitch — Serged Seam — 2 rows, Straight Stitch — 2 rows, Zigzag Stitch — 1 row, Straight 1 row, Zigzag — Ov
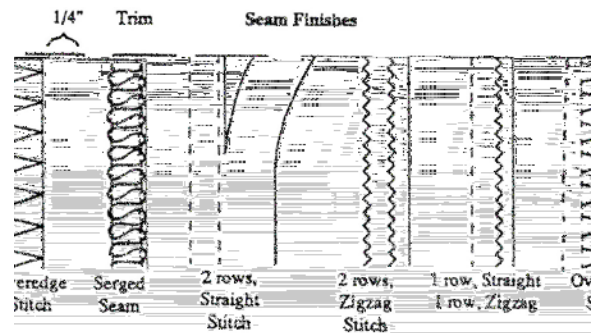
Areas to Stabilize
Seams that get a lot of stress and may stretch out of shape, such as shoulder, neckline, and waistline, need to be taped for stability. Narrow twill tape,

woven selvage, woven seam tape, or transparent elastic can be used. Stay-Tape™ is a lightweight nylon tape that doesn't add bulk and is washable and dry cleanable. Sew the seam, catching the tape in the seam. On lightweight knit, press the seam allowance to one side and topstitch close to the seam line through all layers.


Taping

1/4" or 5/8" Seam Allowance

1/4" Tape
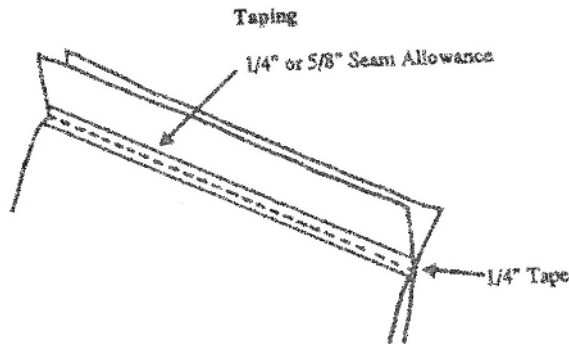
Zipper plackets should also be stabilized by applying a strip of lightweight fusible interfacing or hand stitching a piece of seam tape within the seam allowance area only. Stitch the zipper by beginning at the bottom of the zipper stop and stitch up one side. Start at the bottom again and stitch up the other side.
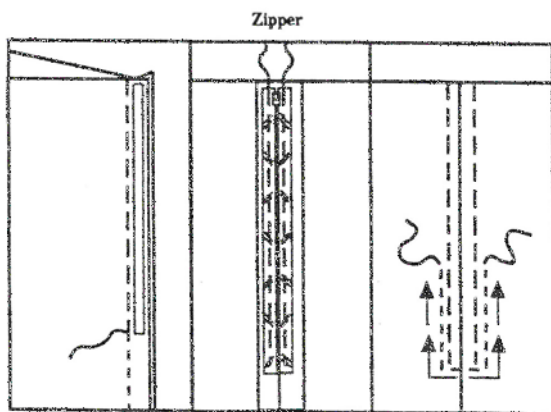
Zipper

Reinforce zipper with lightweight fusible interfacing.

For buttonholes, the lengthwise grain of interfacing should follow the direction of the buttonhole. A corded buttonhole will also give more stability to buttonholes on knit fabric. Some machines even

have special stretch buttonhole stitches. If the fabric has a lot of crosswise stretch it may be necessary to make vertical buttonholes to get a smoother, neater looking buttonhole.

Vertical Buttonhole
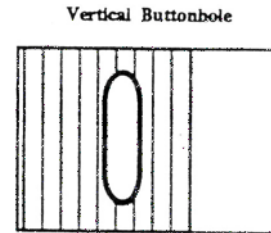
Use vertical buttonholes that run parallel to ribbing.

Ribbing
Rib knit trim is designed to have great crosswise stretch and recover to its original size and shape after stretching. It is generally sold by the inch in tubular form. Rib knit is folded double with the folded edge used as the outer finished edge for band trims. Some ribbing comes with finished outer edges and is then applied single layer. Select a ribbing similar in weight to the fabric. If pattern pieces are not provided, cut ribbing twice the desired width and long enough to fit around wrists, upper arms,
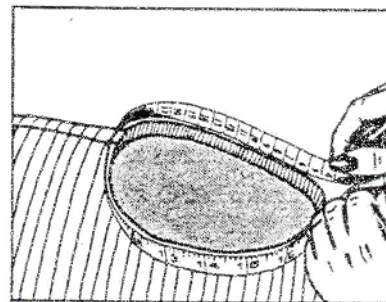
Stand tape measure on end to determine ribbing length.

and ankles. Add ½ inch for seam allowances in both directions. To measure necklines and armholes, stand measuring tape on end along pattern seam line to determine length accurately. Cut ribbing two-thirds the

measured length of garment seams lines plus ½ inch for seam allowances. V-necklines are cut the same measurement as the garment neckline seam measures. Ribbing may be applied flat or in-the-round. In the flat method leave one seam open before applying ribbing. For the in-the-round method, seam ends together, trim seam allowance if necessary to ¼-inch. In both methods, fold ribbing is half lengthwise and press crease, match center and quarter marks to each other, and stretch ribbing to fit as it is sewn in place.

Pressing
Knits do not require a lot of pressing during construction, another reason that makes them quick to sew. When pressing is needed, test on fabric scraps for the correct amount of steam, heat, and pressure. Remember to press and not iron the fabric. To prevent the fabric from being flattened too much, place the fabric on a terry towel and use a press cloth.
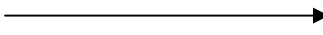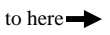
Hems
Allow the garment to hang 24 hours before measuring the hem. Hems can be done by hand or machine, or they can be fused. For very heavy knits, double stitch the hem. If topstitching a hem on textured knits, a zigzag stitch may look straighter than a straight stitch. A cover stitch is also good for hemming knit garments. If a cover stitch machine is not available, using a stretch double or triple needle can duplicate the look of the cover stitch. The two or three rows of topstitching on the right side and a row of zigzag stitching on the bottom side gives the necessary stretch required for knits. Choose a 2.5 mm or 4 mm twin needle and textured nylon thread in the bobbin and lengthen the stitch length slightly. If the knit tends to curl, interface the hem area with a lightweight fusible tricot knit interfacing. A machine blind stitch can be used for an invisible hem on stable knits for a dressier look.
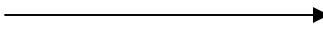
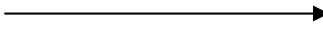| Sewing Checklist				
	Needle size	Machine Setting	Marking Methods	Seams
Single Knits	8/60–11/75	12 / 2mm	Chalk, marking pens, soap sliver	Plain, double sewn, twin needle
Double Knits	8/60–14/90	10–12 / 2–2.5mm	Chalk, marking pens, soap sliver, thread	Plain, double sewn, welt, slot, piped
Interlock Knits	6/60–11/75	12/2mm	Any type except wax	Plain, double sewn, twin needle, stretch
Raschel Knits	12/80–14/90	10–12 / 2–2.5mm	Pins, tailor tacks	Plain, double sewn
Sweatshirt Knits	10/70–14/90	9–12 / 2.5–3mm	Chalk, marking pens, soap sliver	Plain, zigzag, double sewn, twin needle, welt, serged, flatlock, piped
Athletic Mesh Knits	10/70–12/80	10–15 / 1.5–2.5mm	Marking pens, tape	Double sewn, serged, zigzag
Tricot Knits	8/60–12/80	12 / 2mm	Outward notches, chalk, soap sliver	Double sewn, twin needle
Sweater Knits	10/70–14/90	10–12 / 2–2.5mm	Pins, thread	Double sewn, zigzag, serged
Stretch terry/velour	10/70–14/90	10–12 / 2–2.5mm	Chalk, marking pens, soap sliver, pins	Plain, double sewn, welt, piped
Action Knits	10/70–14/90	10 / 2.5mm	Chalk, marking pens, soap sliver, pins	Stretch, twin needle, serged

STRETCH GAUGE

Fabric with 20% stretch such as: jersey knit, double knit, and interlock knit
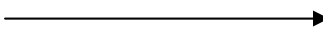
Stretch 4 inches of folded knit fabric from here ⟶	to here ➤

Fabric with 25% stretch such as: nylon tricot, interlock, and velour

Stretch 4 inches of folded knit fabric from here ⟶	to here ⟶

Fabric with 35% stretch such as: sweater knit, velour, and terry knit

Stretch 4 inches of folded knit fabric from here ⟶	to here ⟶

Fabric with 75% stretch such as: swimsuit knit, fabric with spandex or Lycra®

Stretch 4 inches of folded knit fabric from here ⟶	to here ⟶

For more information on sewing knit fabrics, see Claire Shaffer's *Fabric Sewing Guide.*

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March 2006