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FREE EBOOK

ENGLISH, CAREERS AND VOCATIONAL SKILLS

Sewing Machine Basics and Hand Stitches

Thread, operate and care for a sewing machine, and learn essential stitches

INSIDE THIS BOOK

- Getting to know your sewing machine
- Needles, threads and the bobbin
- Threading the machine
- Tension and your first stitches
- ...and 6 more chapters, practice questions and a glossary

Beginner

Dress design and tailoring students

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+91 97116 99511

Sewing Machine Basics and Hand Stitches

A beginner's guide to the sewing machine and the hand stitches every tailor uses. Learn the parts of the machine, how to wind the bobbin, thread it and set the tension, sew straight and zigzag seams, finish raw edges, sew on buttons, oil and clean the machine, and fix skipped stitches, broken thread and puckering, with practice exercises for each skill.

WHO IT IS FOR	Dress design and tailoring students
LEVEL	Beginner
SUBJECT AREA	English, careers and vocational skills
WHAT IS INSIDE	10 chapters, practice questions with answers, and a glossary

HOW TO USE IT

Read one chapter at a time and try the examples as you go: on a computer, at your workbench or in your notebook. The boxes give tips, safety points and short activities. When you finish, test yourself with the practice questions and check your answers at the end. Words you may not know are explained in the glossary.



Gurukul Technicals Institute

A-10, Chief Commissioner Colony, opposite Rana Pratap Bagh, Delhi 110007
Phone 011 2721 1512 · Mobile and WhatsApp +91 97116 99511
engineergurukul@yahoo.co.in · engineergurukul.com

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Getting to know your sewing machine

A sewing machine makes a **lock stitch**. One thread comes from the top, through the needle. A second thread comes from below, from a small reel called the **bobbin**. The two threads link together inside the fabric, so the stitch looks the same on both sides.

Three kinds of machine

Type	How it is driven	Good to know
Hand machine	You turn a handle fixed to the wheel	One hand is busy turning, so guiding the cloth takes practice
Treadle machine	You rock a foot plate under the table	Both hands are free; no electricity needed
Electric machine	A motor, controlled by a foot pedal	Fast and easy; press the pedal gently to control speed

Many basic machines sew only a straight stitch. Others also sew a zigzag stitch and fancy stitches. The parts below are found on almost every machine, though their shape and position vary.

The main parts

Part	What it does
Spool pin	Holds the reel of thread on top
Thread guides	Small hooks that lead the thread along the right path
Tension discs and dial	Two discs that squeeze the thread; the dial sets how tightly
Take-up lever	Moves up and down, pulling up thread to tighten each stitch

Part	What it does
Needle bar and clamp	Hold the needle; a small screw locks it in place
Presser foot	Holds the fabric flat while you sew
Presser foot lifter	A lever behind the needle that raises and lowers the foot
Feed dogs	Small toothed bars under the foot that move the fabric forward
Needle plate	The metal plate under the foot, often marked with seam guide lines
Bobbin and bobbin case	Hold the lower thread under the needle plate
Hand wheel	The wheel at the right end; turning it moves the needle by hand
Stop-motion knob	The knob in the middle of the hand wheel; loosening it stops the needle moving while the bobbin is wound
Bobbin winder	Winds thread onto an empty bobbin
Stitch length control	Sets how long each stitch is
Reverse lever	Makes the machine sew backwards

REMEMBER

Always turn the hand wheel **towards you**. Turning it the other way can jam the thread under the needle plate.

Safety at the machine

- Keep your fingers at least 2 cm from the needle. Guide the fabric with your hands flat on either side of the foot.
- Tie back long hair, and keep a dupatta or loose sleeve away from the needle and the wheel.

- Never sew over pins. Pull each pin out just before it reaches the foot.
- On an electric machine, take your foot off the pedal before you touch the needle area, and switch off and unplug it before changing the needle, oiling or cleaning.
- Keep pins in a pincushion and put broken needles in a closed tin, never loose in the dustbin.

Setting up your sewing place

- Sit on a firm chair, facing the needle, with your back straight. The table should be at about the height of your elbows when your arms hang down.
- Put a lamp or a window on your left, so your sewing hand does not shade the needle.
- Keep scissors, pins, a tape and a seam ripper (a small hooked tool for unpicking stitches) within reach, but not on the machine bed.
- On an electric machine, rest your whole foot on the pedal and press gently. Speed comes later; control comes first.

SAFETY

An electric machine runs on mains power. Only an adult should check the cable and plug, and nobody should open the motor or the pedal. If you see a damaged wire, stop and tell your teacher.

CHAPTER 2

Needles, threads and the bobbin

The right needle and thread make sewing smooth. The wrong ones cause many of the problems beginners meet.

Machine needles

A machine needle has a **shank** (the thick top that goes into the clamp), a long **groove** down one side, and the **eye** near the point. Domestic machines usually take needles with one flat side on the shank. Industrial machines often use a different, round-shank type. Buy the type your machine needs.

Needle sizes are often marked with two numbers, such as 80/12. A bigger number means a thicker needle.

Needle size	Suits
70/10	Fine fabrics: voile, lawn, georgette
80/12	Medium cotton: poplin, cambric, most dress fabric
90/14	Medium-heavy fabric: casement, linen
100/16	Heavy fabric: denim, canvas

There are also needle types. A **universal** needle suits most woven fabric. A **ballpoint** needle has a rounded tip that slips between the loops of knitted fabric such as T-shirt jersey. A **denim** or jeans needle has a strong, sharp point for thick layers.

TIP

Change the needle after every big project, or straight away if it hits a pin. A blunt or bent needle causes skipped stitches, broken thread and pulled fabric.

Threads

- **Polyester thread** is strong, a little stretchy and suits most sewing.
- **Cotton thread** is good for pure cotton fabric but has little stretch.
- **Silk thread** is fine and smooth, for silk fabric and hand tacking.
- **Embroidery and buttonhole threads** are thicker or shinier, for decoration.

Match the thread colour to the fabric, or choose one shade darker, because thread looks lighter once it is sewn. Use the same thread in the needle and the bobbin for ordinary sewing.

Winding the bobbin

1. Put the reel on the spool pin. Lead the thread through the bobbin winder's thread guide, as shown on your machine.
2. Wind the end of the thread a few times round the empty bobbin by hand.
3. Fit the bobbin on the winder spindle and push the winder against the wheel (or into its winding position).
4. Loosen the stop-motion knob so the needle does not move.
5. Run the machine at an even speed. Many winders stop by themselves when the bobbin is full. If yours does not, stop before the thread reaches the rim.
6. Cut the thread, take the bobbin off and **tighten the stop-motion knob again**.

An evenly wound bobbin feels firm, like a tight reel from a shop. A loose, lumpy bobbin gives uneven stitches.

EXAMPLE

Farida in Hyderabad wound her bobbin with the thread outside the winder guide. It came out soft and lumpy, and her stitches looped underneath. She rewound it through the guide, and the problem disappeared.

CHAPTER 3

Threading the machine

Threading takes a few minutes to learn and becomes automatic with practice. Every machine has its own path, often shown by numbers or arrows printed on it, so use those and your manual alongside the steps below.

Threading the upper thread

1. Turn the hand wheel towards you until the take-up lever is at its **highest** point.
2. **Raise the presser foot.** This opens the tension discs so the thread can slip between them.
3. Put the reel on the spool pin and lead the thread through the first thread guide.
4. Take it down and **between the tension discs**, then up through the check spring if your machine has one.
5. Pass it through the **eye of the take-up lever**.
6. Bring it down through the remaining guides to the needle bar guide.
7. Thread the needle. The thread always enters the eye from the side of the needle's **long groove**. Pull 10 to 15 cm through.

Fitting the bobbin

There are two common arrangements. In a **drop-in** bobbin, you lay the bobbin in a holder under a cover in the needle plate. In a **front-loading** bobbin, you put the bobbin into a separate bobbin case, which clicks into the machine behind a door below the needle. In both, the thread must unwind in the direction your manual shows and pass under the small tension spring.

Bringing up the bobbin thread

1. Hold the end of the upper thread loosely in your left hand.
2. Turn the hand wheel towards you one full turn, so the needle goes down and comes back up.
3. Pull the upper thread gently. A loop of bobbin thread comes up through the hole in the needle plate.
4. Pull the loop out, and lay both threads back under the presser foot, about 10 cm long.

REMEMBER

Raise the foot to thread; lower the foot to sew. If you thread with the foot down, the thread misses the tension discs and makes a tangle under the fabric.

Putting in a new needle

Switch off an electric machine first. Raise the needle to its highest point, loosen the clamp screw and pull the old needle down. Push the new needle up **as far as it will go**, with the flat side of the shank facing the way your manual shows, and tighten the screw firmly. A needle that is not pushed fully up is a common cause of skipped stitches.

TRY THIS

Thread your machine, then unthread it completely and do it again. Repeat five times. By the fifth time you should not need to look at the steps.

CHAPTER 4

Tension and your first stitches

Before sewing anything you plan to keep, practise on two layers of plain cotton scrap.

Preparing the fabric

- **Wash cotton before you cut it.** Many cotton fabrics shrink a little in the first wash. If you sew first and wash later, the garment may come out smaller and the seams may wrinkle. Dry it, then iron it flat.
- **Find the right side.** The **right side** is the outer face that will show, usually the brighter or printed side. The other face is the **wrong side**.
- **Find the selvedge.** The **selvedge** is the firm, finished edge along each side of the fabric as it comes off the roll. It does not fray.

Starting and stopping

1. Raise the needle to its highest point and lift the foot.
2. Put the fabric under the foot, with the edge along a seam guide line on the needle plate.
3. Turn the hand wheel to lower the needle into the fabric, then lower the foot.
4. Hold both thread ends lightly behind the foot for the first few stitches.
5. Sew slowly. Let the feed dogs pull the fabric; your hands only guide it. **Never pull or push the fabric.**
6. To stop, raise the needle to its highest point, lift the foot, draw the fabric back and cut the threads, leaving 10 cm.

To lock a seam, sew three or four stitches forward, then three or four in reverse, then carry on. Do the same at the end. This is called **backstitching**. On a machine without reverse, tie the two thread ends together instead.

Stitch length

Stitch length is shown in millimetres on many machines, or as stitches per inch on others. About 2.5 mm suits most seams. Use a shorter stitch, about 2 mm, on fine fabric, and a long stitch, 4 mm or more, for temporary stitching that you will pull out later.

Getting the tension right

Tension is how tightly the threads are held as they feed. Look closely at a line of stitches on both sides of your scrap.

What you see	What it means	What to do
Both sides look the same; threads lock between the layers	Balanced tension	Nothing
Bobbin thread pulled up and showing on top	Upper tension too tight	Turn the dial to a lower number

What you see	What it means	What to do
Loops of upper thread on the underside	Upper tension too loose, or upper thread missed the discs	Re-thread with the foot up; then turn the dial higher

Change the dial one number at a time and test again. Most problems are solved with the upper dial alone. The bobbin case has a tiny screw for bobbin tension, but leave it alone unless your teacher shows you how: a quarter turn makes a big difference.

Zigzag stitch

On a machine that has it, the **stitch width** control moves the needle from side to side. Zigzag is used to neaten raw edges, to sew stretchy fabric, and for satin-stitch decoration with a very short length. Set the width before you start, with the needle raised, or the needle can hit the needle plate and break.

EXAMPLE

Simran from Amritsar sewed her first sample and found loops on the underside. She checked her threading and found that the thread had missed the tension discs. After rethreading with the presser foot raised, the stitches came out balanced.

CHAPTER 5

Seams and seam allowance

A **seam** joins two pieces of fabric with a line of stitching. The **seam allowance** is the strip of fabric between the stitching line and the cut edge.

How wide should it be?

Many patterns use a seam allowance of 1 to 1.5 cm. Tailors often leave more, 2 to 2.5 cm, at the side seams of kurtis and blouses, so the garment can be let out later. Whatever you choose, keep it the same along the whole seam, and mark it on your pattern. The guide lines on the needle plate help: keep the fabric edge on the line for your allowance.

Sewing a plain seam

1. Put the two pieces **right sides together**, so the outer, printed faces touch.
2. Match the edges and pin across the seam line, about every 8 cm.
3. Sew along the seam line, backstitching at the start and end. Remove pins as you reach them.
4. Press the seam flat as it was sewn, then press the allowances open (or both to one side).

REMEMBER

Press each seam before you cross it with another. Pressing as you go is what makes home sewing look like shop sewing. An adult should help younger students with the iron.

Corners and curves

- **Corners:** stop with the needle down in the fabric at the corner. Lift the foot, turn the fabric, lower the foot and carry on. This is called **pivoting**. Trim the corner of the allowance at a slant before turning it right side out.
- **Outward curves**, like the edge of a round collar: cut small V-shaped notches in the allowance so it lies flat when turned.
- **Inward curves**, like a neckline: make small straight cuts (clips) into the allowance.

Never cut through the stitching. Stop 2 to 3 mm short of it.

Gathering

To gather a skirt or a sleeve top, set the longest stitch and sew two rows inside the allowance, without backstitching. Pull the two bobbin threads together, slide the fabric along until it fits, and knot the ends.

TIP

Sew slowly round curves, turning the fabric a little at a time with the needle down. A slow, smooth curve looks far better than a fast, wobbly one.

CHAPTER 6

Finishing raw edges

A **raw edge** is a cut edge of fabric. Left alone, most woven fabrics **fray**: threads come loose and the seam can come apart in the wash. Finishing the edges stops this.

Common finishes

Finish	How to do it	Best for
Pinked edge	Cut the edge with pinking shears, which cut a zigzag	Fabric that frays little, such as felt or firm cotton
Zigzag edge	Sew a zigzag just inside the edge, so one swing goes over it	Most fabrics, on a zigzag machine
Turned and stitched	Fold the raw edge under 3 to 5 mm and straight-stitch along the fold	Light and medium cotton
Hand overcast	Slanting hand stitches over the edge	Small areas, or any fabric without a zigzag machine
Bound edge	Wrap a strip of bias binding round the edge and stitch	Unlined jackets, thick fabric

Tailoring shops often use an **overlock machine**, which trims the edge and wraps it in thread in one go. You can get neat results without one.

Enclosed seams

Some seams hide the raw edges inside themselves.

French seam, for sheer fabric such as georgette and voile, with a 1.5 cm allowance:

1. Put the pieces **wrong sides together** and sew 6 mm from the edge.
2. Trim the allowance to 3 mm and press.
3. Fold the fabric so the **right sides** are together, with the seam exactly on the fold. Press.
4. Sew 9 mm from the fold. The raw edges are now trapped inside.

Flat-felled seam, the strong seam on jeans and shirts: sew a plain seam, trim one allowance to half its width, fold the wider one over it, fold both flat against the garment and stitch close to the fold.

Hems

A **hem** finishes the bottom edge of a garment or a sleeve. For a double-turned hem, fold the edge up 1 cm and press, fold up again by the hem depth and press, then machine stitch close to the inner fold, or slip stitch it by hand for an invisible finish.

DID YOU KNOW

Bias binding is cut at 45° to the threads of the fabric. Cut this way, a strip stretches slightly, so it can bend smoothly round curves such as a neckline or an armhole.

Hand stitches

Tailors still do some work by hand: tacking, hems, buttons and finishing. Use a thread about 45 to 50 cm long. A longer thread tangles and wears thin.

Getting ready

- Cut the thread at a slant, which makes it easier to pass through the eye.
- Tie a small knot at the end. Use the thread single for most work, doubled for buttons.
- Wear a **thimble** on the middle finger of your sewing hand to push the needle.
- To **fasten off**, make two or three tiny stitches on top of each other on the wrong side, then cut the thread.

Tacking (basting)

Long, temporary running stitches, about 1 cm long, that hold pieces together for fitting or before machine sewing. Use a contrasting colour and do not knot the end too tightly, so the tacking pulls out easily.

Running stitch

Weave the needle in and out of the fabric several times, taking small, even stitches of 2 to 3 mm, then pull the thread through. It is quick but not strong, and is used for gathering, mending and light seams.

Back stitch

The strongest hand stitch. It looks like machine stitching on the front.

1. Bring the needle up one stitch length ahead of the start.
2. Take it down at the start, going backwards.
3. Bring it up one stitch length ahead of where the thread came out.

4. Go back down into the end of the previous stitch. Repeat.

Hemming stitch

A slanting stitch that holds a folded hem. In one slanting movement, pick up one or two threads of the garment just above the fold and bring the needle out through the edge of the fold, about 5 mm along. Only tiny dots should show on the right side.

Slip stitch

An almost invisible stitch for hems, linings and closing gaps. Slide the needle along **inside the fold** for about 5 mm, bring it out, pick up one thread of the garment directly opposite, and slide back into the fold. Pull gently so the fabric does not pucker.

Overcasting

A quick way to stop a raw edge fraying by hand. Take slanting stitches over the edge, about 5 mm deep and 5 mm apart, always passing the needle through from the same side. Do not pull tight, or the edge will curl.

Blanket stitch

An edge stitch for blankets, felt and decoration. Working along the edge, push the needle in from the front about 5 mm from the edge and bring the point out beyond the edge, with the thread **under the needle point**. Pull up, so the thread lies along the edge. Repeat at equal spaces.

Buttonhole stitch

- 1.** Mark the buttonhole. Its length is the button's width plus its thickness.
- 2.** Sew small running stitches in a narrow rectangle round the mark, then cut the slit carefully along the centre.
- 3.** Push the needle down through the slit and up just outside the running stitches.

4. Loop the thread from the eye of the needle under the needle point, and pull the needle up and away. A small knot settles on the cut edge.
5. Work the stitches close together along one side, fan them round the end near the garment edge, work along the other side, and finish the far end with a few straight bar stitches.

Sewing on a button

1. Use doubled thread and make a small stitch on the right side where the button goes.
2. Lay a pin or a matchstick across the top of the button.
3. Sew through the holes and over the pin five or six times.
4. Remove the pin, pull the button up, and wind the thread several times round the stitches under the button. This **thread shank** leaves room for the buttonhole layer.
5. Take the needle to the wrong side and fasten off.

A **shank button** has a loop on its back. Sew through the loop; it needs no thread shank.

TRY THIS

Make a hand-stitch sampler: a 20 cm by 30 cm strip of cotton with a 10 cm line of each stitch, a 5 cm hem, one buttonhole and two buttons. Label each with a slip of paper and keep it in your file.

CHAPTER 8

Oiling and cleaning

A machine that is cleaned and oiled regularly runs lightly and quietly, and lasts for many years.

Cleaning

Lint is the fluff that comes off thread and fabric. It packs into the feed dogs and the bobbin area and makes the machine stiff and noisy.

1. Switch off and unplug an electric machine. Remove the needle, the presser foot and the bobbin.
2. Unscrew and lift off the needle plate.
3. Brush out the lint from the feed dogs and the bobbin area with a small, stiff brush. Use tweezers for knots of thread.
4. On a front-loading machine, take out the bobbin case and wipe the area it sits in with a soft cloth.
5. Put everything back.

Do not blow into the machine: your breath is damp, and moisture leads to rust.

Oiling

- Use only **sewing machine oil**, a light, clear oil. Never use cooking oil, coconut oil, hair oil or engine oil: they thicken and gum up the parts.
- Your manual shows the oiling points. On many machines they are small holes on top, and places where metal parts rub against each other underneath and behind the face plate.
- Put **one drop** in each point. More is not better.
- Run the machine for a minute, then sew a few lines on scrap fabric to soak up any extra oil before you sew a garment.

How often? Follow your manual. As a rough guide, a machine used every day needs cleaning and a few drops of oil every week or so; one used now and then needs it before each long sewing session.

SAFETY

Keep the oil can closed and out of reach of small children. Wipe up any oil on the floor straight away.

Daily care

- When you finish, leave a scrap of fabric under the lowered presser foot. It protects the foot and catches any drip of oil.
- Cover the machine to keep out dust.
- Keep it in a dry place. In the monsoon, wipe the metal parts with a dry cloth.

EXAMPLE

Lakshmi's machine in Chennai had become stiff and noisy. She brushed out a thick pad of lint from under the needle plate, put one drop of oil in each oiling point and ran it on scrap. It ran smoothly again.

CHAPTER 9

Common problems and how to fix them

Most problems have simple causes. Work through the checks in order: rethread first, change the needle second, adjust tension last.

Quick fault finder

Problem	Common causes	What to try
Skipped stitches	Blunt or bent needle; needle not pushed fully up; wrong needle type	Fit a new needle of the right size and type, pushed fully up; use a ballpoint needle for knits
Upper thread breaks	Wrong threading; tension too tight; poor thread; thread caught on the reel; needle too fine	Rethread; lower the tension; use good thread; turn the reel so the notch does not catch
Bobbin thread breaks	Bobbin wound unevenly; bobbin case threaded wrongly; lint	Rewind evenly; refit following the manual; clean the bobbin area

Problem	Common causes	What to try
Puckering (fabric wrinkles along the seam)	Tension too tight; stitch too long for fine fabric; blunt needle; pulling the fabric	Lower the tension; shorten the stitch; fit a fine new needle; let the feed dogs do the work
Tangle of thread under the fabric	Upper thread missed the tension discs; threads not held at the start	Rethread with the presser foot raised; hold the threads for the first stitches
Needle breaks	Fabric pulled while sewing; sewing over pins; needle too fine for thick fabric	Guide gently; remove pins in time; use a thicker needle
Fabric does not move	Presser foot not lowered; stitch length at zero; feed dogs lowered or clogged	Lower the foot; set the length; clean the feed dogs
Machine stiff or noisy	Lint, dried oil or thread caught in the bobbin area	Clean, remove trapped thread, oil

Sewing fine and tricky fabrics

- **Thin, slippery fabric** puckers easily. Use a fine new needle, a shorter stitch and slightly lower tension. Pin often. Placing a strip of tissue paper under the seam helps; tear it away afterwards.
- **Thick layers**, as at a denim hem: use a thick needle and turn the hand wheel by hand over the bulkiest part.
- **Knitted fabric**: use a ballpoint needle and a narrow zigzag, so the seam can stretch without breaking.

TIP

Keep a "test strip" of the same fabric beside the machine. Sew a few stitches on it after every change of thread, needle or tension, before you sew the real garment.

DID YOU KNOW

At a stitch length of 2.5 mm, one metre of seam has 400 stitches ($1,000 \text{ mm} \div 2.5 \text{ mm}$). Each one is a chance for a blunt needle or poor thread to fail, which is why a fresh needle and good thread matter so much.

CHAPTER 10

Practice exercises

Skill comes from practice. Work through these in order, and do not move on until each one looks neat.

Exercise 1: Paper control (no thread)

Draw lines on plain paper with a ruler and a pen, 1 cm apart. Remove the thread from the machine and sew along them, so the needle punches a line of holes.

1. Straight lines, stopping exactly at the end.
2. Squares, pivoting at each corner with the needle down.
3. Gentle curves, then circles and a spiral.

Hold the paper up to the light. The holes should sit on the line.

Exercise 2: Stitching on fabric

On a doubled piece of cotton, sew straight lines with the fabric edge on the needle plate guides at 1 cm, 1.5 cm and 2 cm. Then sew curves and corners. Try three stitch lengths and, on a zigzag machine, three widths. Label each line in your sample file.

Exercise 3: Seam samples

Make a 15 cm sample of each: a plain seam pressed open, a plain seam with zigzag edges, a turned-and-stitched seam, a French seam and a double-turned hem.

Exercise 4: A first project

Make a **drawstring bag** from a piece of cotton 30 cm by 70 cm.

1. Neaten the two long sides and both short ends.
2. Fold the strip in half, right sides together, so it is 30 cm by 35 cm with the fold at the bottom.
3. Sew both sides with a 1 cm allowance, stopping 5 cm below the top.
4. At the top, fold 1 cm down, then 2.5 cm more, and stitch close to the lower fold to make a channel.
5. Turn right side out, press, and thread a cord through the channel with a safety pin.

EXAMPLE

Rekha in Lucknow bought half a metre of printed cotton for ₹ 90 and a metre of cord for ₹ 15. She made one drawstring bag and had a piece left over for a small pouch.

REMEMBER

Measure twice and cut once. Unpicking a seam takes longer than sewing it.

CHECK YOURSELF

Practice questions

1. Why is the machine stitch called a lock stitch?
2. Name the part that moves the fabric forward under the presser foot.
3. In which direction should you always turn the hand wheel?
4. What does the stop-motion knob do, and when do you loosen it?
5. Which needle size would you choose for denim, and which for voile?
6. Why do you need a ballpoint needle for knitted fabric?

7. Why must the presser foot be raised while threading the upper thread?
8. From which side does the thread enter the eye of the needle?
9. How do you bring up the bobbin thread?
10. What stitch length suits most seams?
11. The bobbin thread shows on top of the fabric. What is wrong, and how do you fix it?
12. What is seam allowance, and why do tailors leave extra at the side seams?
13. What is pivoting?
14. How do you treat the allowance on an inward curve and on an outward curve?
15. Give three ways to finish a raw edge.
16. Describe the steps of a French seam.
17. What is the difference between running stitch and back stitch?
18. How do you work out the length of a buttonhole?
19. Why do you put a pin on top of a button while sewing it on?
20. Why should you never use coconut oil on a sewing machine?
21. Give two causes of skipped stitches.
22. A tangle of thread forms under the fabric. What is the most likely cause?

ANSWER KEY

Answers

- | | |
|--|-------------------|
| 1. The upper thread and the bobbin thread link, or lock, together inside the fabric. | 2. The feed dogs. |
| | 3. Towards you. |

4. It connects the hand wheel to the needle. You loosen it to wind the bobbin, so the needle does not move.
5. Size 100/16 for denim; size 70/10 for voile.
6. Its rounded tip slips between the loops of knitted fabric instead of cutting them.
7. Raising the foot opens the tension discs, so the thread can slip between them.
8. From the side of the needle's long groove.
9. Hold the upper thread, turn the hand wheel one full turn towards you, and pull the upper thread to draw up a loop of bobbin thread.
10. About 2.5 mm.
11. The upper tension is too tight. Turn the tension dial to a lower number and test again.
12. It is the strip between the stitching and the cut edge. Extra at side seams lets the garment be let out later.
13. Stopping with the needle down, lifting the foot, turning the fabric and lowering the foot to sew a sharp corner.
14. On an inward curve, make small straight clips; on an outward curve, cut small V-shaped notches. Never cut through the stitching.
15. Any three: pinking, zigzag, turned and stitched, hand overcasting, binding.
16. Sew wrong sides together 6 mm from the edge, trim to 3 mm, fold right sides together with the seam on the fold, and sew 9 mm from the fold.
17. Running stitch weaves in and out and is quick but weak; back stitch goes backwards each time, making a strong, continuous line.
18. Add the button's width and its thickness.
19. It makes the stitches loose enough to wind into a thread shank, which leaves room for the buttonhole layer.
20. It thickens and gums up the parts. Use only sewing machine oil.
21. Any two: a blunt or bent needle, a needle not pushed fully up, or the wrong needle type for the fabric.
22. The upper thread has missed the tension discs, usually because the machine was threaded with the presser foot down.

Glossary

Lock stitch

the machine stitch in which upper and lower threads link inside the fabric.

Bobbin

the small reel that holds the lower thread.

Feed dogs

toothed bars under the presser foot that move the fabric along.

Presser foot

the part that holds the fabric flat against the feed dogs while you sew.

Take-up lever

the moving lever that pulls up thread to tighten each stitch.

Tension

how tightly the threads are held as they feed into the stitch.

Hand wheel

the wheel at the right of the machine that moves the needle by hand.

Stop-motion knob

the knob in the hand wheel that disconnects the needle for bobbin winding.

Needle plate

the metal plate under the presser foot, often marked with seam guides.

Seam

a line of stitching that joins two pieces of fabric.

Seam allowance

the fabric between the stitching line and the cut edge.

Backstitching

sewing a few stitches in reverse to lock the start or end of a seam.

Raw edge

a cut edge of fabric that has not been finished.

Fray

when threads come loose from a cut edge.

Pivoting

turning the fabric with the needle down to sew a corner.

French seam

a seam that encloses the raw edges inside a second line of stitching.

Hem

the folded, stitched finish at the bottom edge of a garment.

Tacking

long, temporary hand stitches that hold pieces in place; also called basting.

Puckering

wrinkling of fabric along a line of stitching.

Selvedge

the firm, finished edge along each side of a length of fabric.

Bias

the direction at 45° to the threads of a fabric, where it stretches most.

Thread shank

the wound thread under a button that lifts it off the fabric.

Lint

fluff from thread and fabric that collects inside the machine.



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CONTACT

Head office: A-10, Chief Commissioner Colony, opposite Rana Pratap Bagh, Delhi 110007

Phone: 011 2721 1512 · **Mobile and WhatsApp:** +91 97116 99511

Email: engineergurukul@yahoo.co.in

Website: engineergurukul.com · **Instagram:** [@science_projects_club](https://www.instagram.com/science_projects_club)

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