**INTRODUCTION**

Embroidery is done for making a fabric beautiful with colourful designs with the help of needle and threads. It may be used to embellish almost everything, from the smallest handkerchief to big home furnishing like even curtains or bedcovers. Different types of garments including that of children, furnishings, such as bed sheets, pillow covers, table cloth, wall hangings, etc. are embroidered to give a rich look. It is an art to express the creativity using different types of techniques, like beadwork, metal thread work, appliqué work, decorative thread work, cutwork, patchwork, zardozi work, etc. Embroidery is also known as ‘a painting with needle’.

Embroidery can also be done with other materials, such as pearls, beads, quills, sequins, shells, precious and semi-precious stones, seeds, etc. The art of embroidery is practised on different kinds of pliable materials, like cotton, linen, silk, wool and leather, which can be pierced with the sharp needle. Gold, silver, silk, cotton wool and many synthetic threads have been used to produce fine and rich looking embroidered products.

Hand embroidery is done by holding the fabric in hand with or without a circular frame, which holds the fabric in a stretched form, or the fabric stretched on a horizontal frame known as *adda*. Some embroidery
designs are stitched on the top part of the garment while some others are stitched throughout the garments or items. The design location in embroidery plays an important role to give it an attractive and appealing look. Selection of colours of the thread or material used for embroidery plays an important role in the overall look of the finished product. We shall learn in detail about the colour selection and combinations in Class X. However, it is considered that hints for colour combination can be taken from the nature.

In this Unit, the students will learn a brief history of hand embroidery; the terms related to it; types of designs, which can be used for embroidery; practise drawing of all types of design; select them to be transferred on fabric which needs to be embroidered and selection of the tracing method.

All these are the fundamentals of hand embroidery that are important to start the process of embroidery.

**SESSION 1: HISTORY AND EMBROIDERY TERMINOLOGY**

Embroidery is being used from centuries, there are traces of embroidery work from ancient times from all over the world, more so from the eastern countries. These design inspirations include natural, floral, geometric, abstract, nursery designs, tribal, mythological, architectural designs, etc.

Actually, the designs or motifs used for embroidery reflect the culture, tradition and the way of life of people. Embroidery usually takes the inspiration from surroundings, nature and environment where it is practised. It can be observed that the embroidery of Kashmir, India shows its flora in the form of leaves of chinari (maple leaf) and flowers of saffron, etc., the embroidery of the southern region of India shows a rich heritage of gateways and arches of temples, mythological animals and lotus flowers, etc. The colours, fabric, theme and style of embroidery reflect its uniqueness in terms of region, occasion, type of wearers, etc. These days, embroidery is commonly seen on people’s garments—on hats, coats, blankets, denim, etc. It is commonly used to decorate furnishings, such as bed
sheets, table cloths, pillow covers, table runners, table mats, curtains, kitchen aprons, etc.

It is an art of self-expression, done with patience and hard work. Embroidery enhances the beauty and style of the object even in the articles of everyday use. The common hand embroidery stitches are chain stitch, buttonhole or blanket stitch, running stitch, satin stitch, stem stitch, French knot, bullion stitch, cross stitch, etc. All types of fabrics such as cotton, silk, linen, crepe, chiffon, georgette, satin, velvet, canvas, etc., are used for embroidery. Embroidery can be done on cut fabric pieces as well as on ready garments or ready furnishing items.

**History**

It is the rich, worldwide tradition of embroidery which makes it such a fascinating craft. People have been decorating fabrics with ‘stitches’ for centuries which reiterates that embroidery is perhaps one of the most ancient needle crafts. Many of the embroidery designs have their roots in styles popular over the last few centuries. The ancient civilisations and their history, sculptures, paintings and vases depict thread work embroidery and its use on clothing. Mostly, embroidered clothing, religious crafts and household textiles have been a mark of luxury and status in many cultures including ancient Persia, India, China, Japan, and Europe. In many different cultures, traditional folk methods of embroidery were passed from generation to generation. Some themes and designs have remained the same for centuries. Many embroidery tools like needles have been found in excavations*. Floral, animal, geometric and natural designs are the common designs used for embroidery. Every embroidery type has a historic background and style through the years of its development. The origin of embroidery can be dated back to 30,000 B.C. Archaeologists, have been finding evidences of embroidery like fossil remains of heavily hand stitched and decorated clothing, boots and hats.

On comparing the art of hand embroidery practised in the early centuries to the present work of embroidery, it

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* As per newspaper reports (2016), a bone needle has been found in Siberia in the Denisovan Cave—a site in the Altai mountains.
is observed that the embroidery form has seen only a few change of materials or techniques which can be inferred as advancement in the craft. In earlier times, pure gold and silver threads were made by wrapping an extremely fine strip of gold or silver spirally round a silk thread. These pure threads were laid on the fabric and stitched on very fine stitches. Fine metal strips threaded in a needle, like a normal thread were also used. These days, a wide range of colours, for example red, blue, green, yellow are available in all tints and shades, artificially made bright gold, dull gold, bright silver, antique silver and copper colour threads are used.

Coloured stones, pearl and beads have been used to adorn the embroideries since early times. At times, a single colour thread is used while changing the direction of the stitches, such as vertical, horizontal and diagonal, to create an impression of several shades of the same colour by the use of light on the embroidered part.

The selection of designs mainly depends on the type of fabric, size of the product, repetition of design, etc. The area where the trace is needed is first marked, different tracing methods are used to transfer the design. These methods are also discussed in this unit, like using carbon paper, light source, heat transfer method, stencils; and prick and pounce method.

**Embroidery terms**

Some common embroidery terms are given below:

**A**

*Aari*

It is a type of needle with a hook at its tip to do the embroidery. This needle is used while working on *adda*. Because of its name *aari*, the embroidery done by it is called *aari* work.

*Adda*

A wooden adjustable frame with four wooden bars used to stretch the fabric for embroidery is called *adda*. The fabric is attached to the *adda* for doing embroidery.
Appliqué
It is a fabric cut-out attached to the surface of a larger piece of fabric. There are various ways in which an appliqué or cut-out can be attached to the fabric surface. Embroidery stitches such as buttonhole, satin, couching, running and machine stitching can be used to attach the appliqués. This adds colour and texture to the fabric surface.

Backing
This term is used for the material used to give support to the fabric being embroidered. Woven or non-woven materials are used to provide support and stability to the fabric being embroidered. As the name suggests, backing is put on the back side of the fabric. It is occasionally referred to as a stabiliser in the hand embroidery. It can be large enough to be lined with the item being embroidered. Various weights and types of materials are available in the market that can be either in rolls or in pre-cut sheets. Backings can also be cutaway, tearaway, or size and/or shape-specific.

Blanket Stitch
It is an ornamental stitch mainly used to finish an unhemmed blanket or any thick fabric. The stitch can be visible from both sides.

Chain stitch
It is a very common stitch of hand embroidery. It is made by making loop stitches. Chain stitch is used mostly to embroider straight lines and big curves. It is a stitch that looks like a chain link created with one thread from the bottom side of the fabric. It is done on a manual or computerised machine with a hook that performs like a needle.
Notes

Combing
It is the act of smoothening and making uniform the sliver of a yarn (Sliver refers to a piece of loose, untwisted textile fibre).

Couched
It is a method of embroidering in which a thread laid upon the fabric’s surface is caught down at intervals, by stitches taken with another thread through the material.

Counted thread embroidery
It is an embroidery in which the fabric threads are counted by the embroiderer before inserting the needle into the fabric.

D

Design
In embroidery, the term design is used for a motif(s), which is decorated with the different stitches of embroidery.

Design catalogue
A collection of different types of designs, which may be used for various types of embroidery. Many times, a design catalogue also gives details of colour combination, types of stitches and threads for the designs.

E

Embroidery
It is an art, using thread and needle to adorn fabric/garment. In embroidery, different types of stitches are made on fabrics and other flexible material. Embroidery is mainly done by hand or machines.

Embroidery machines
These machines are specialised for different types of embroidery. They are manually or motor operated. These
days, embroidery is done on computerised embroidery machines also.

**Even weave fabric**

It is a fabric that has the same number of threads, vertically as well as horizontally. Such fabrics are described by the number of threads or blocks per inch, usually known as the count. This count will determine the finished size of the design.

**F**

**Filling stitches**

Long and short, satin, close herring bone, fishbone are considered as filling stitches in embroidery. Filling stitches cover large areas and they generally have a flat look.

**Finishing**

This process is performed after embroidery work is completed. This includes trimming loose threads, removing stains, cutting or tearing away excess backing, pressing or steaming to remove wrinkles, etc.

**Frame**

It is a device which holds the fabric to be embroidered. It provides firmness and tightness to the fabric during the process of embroidery. This grips the fabric tightly between an inner and outer ring. Embroidery frames of different sizes and material (plastic, metal, or wood) are available in the market. Wooden frames are very popular for embroidery.

**Framing**

It refers to fixing of a fabric, tightly in an embroidery frame.

**Fusing paper**

It is a base which is coated on one side with a thermoplastic adhesive resin which can be bonded with fabric or other material by the controlled application of heat and pressure.
Gapping
In embroidery, the term gapping is used for the spaces (fabrics) between the stitches in design. It is seen through the embroidery design either in the middle of the design or on its edges.

Gota
It is a narrow ribbon or strip, woven with gold or silver thread used for decorating the fabrics. These days synthetic threads are also used in gota.

GSM
It is a metric measurement meaning grams per square metre—it is how much 1 square metre of fabric weighs. The higher the GSM number, the denser the fabric will be.

Heavy weight fabric
It is a fabric that is approximately above 350 GSM (grams per square metre).

Hoop
Embroidery frames are also called hoops.

Hooping
It is also known as ‘framing’. In this method, the fabric is fixed in a hoop.

Lacing
It is a cord or string for holding or drawing together, as when passed through holes in opposite edges.

Lettering
When embroidery is done for making beautiful letters or expressions of words, it is often called ‘keyboard lettering’.
Lightweight fabric
It is a fabric that is approximately between 30–150 GSM (grams per square metre).

Locking stitch
It refers to a series of three to four very short stitches done on the back to lock the stitch. It is used to prevent the stitching from unravelling after the embroidery is completed.

M

Marking
It is done on the instruction sheet to help the embroiderer initiate embroidery work on the given design. It is mainly done to instruct the embroiderer regarding the materials and stitches.

Medium weight fabric
It is a fabric that is approximately between 150–350 GSM (grams per square metre).

Monogram
A design composed of one or more letters, often intertwined, used as an identified mark of an individual or institution. Monograms are very attractively developed by embroidery.

N

Nap
It is a layer of fibre ends raised from the ground weave of the fabric. In nap, a fuzzy, fur-like feel is created when fibre ends extend from the basic fabric structure to the fabric surface. The fabric can be napped on either one or both sides.

Needle
It is the stitch forming device that carries the thread through the fabric. Needles vary in thickness, length,
size of eye, sharpness and shape of point. Needles of different numbers are available in the market; the higher the number, the finer the needle.

**P**

**Pencil rub**

It is a low-cost method to transfer the design. Place a piece of tracing paper on a projected or embossed sample design and then lightly rub with pencil. The design will appear on the tracing paper. The term pencil rub is used for this process.

**Pile**

A surface effect on a fabric formed by upright yarns, cut or loops of yarn that stand up from the body of the fabric.

**Pinking shears**

It is useful in finishing raw edges of fabric or to produce a decorative edge. Pinking shears produce a notched cutting line (zigzag) which gives a neat look to the edges to prevent ravelling (i.e., a bit of fibre that has become separated from the woven fabric).

**Puckering**

It results when the fabric is being gathered by the stitches. It is caused due to incorrect density of stitches, blunt point needle, loose hooping, insufficient backing, and incorrect thread tensions.

**R**

**Repeat**

It occurs when a line, shape, space, etc., is used more than once in fabrics or materials at different intervals. In fabrics, motifs or designs are repeated in many different ways producing different end results.
Ruche
It is a strip of fabric which has been pleated.

Running stitch
It is made up of short even stitches. It is mostly worked in straight lines for seams, or in curves for linear motifs and lettering.

S

Satin stitch
This is a stitch in which every stitch is closely worked parallel to another. Satin stitches are popular for filling motifs and fancy monograms. It can be laid down at any angle and with varying stitch lengths.

Scale
In embroidery, the term scale is used to enlarge or minimise the size of the design without changing the elements of design.

Snagging
It refers to a break, pull, or tear in the fabric.

SPI
Abbreviation for Stitch/Stitches Per Inch. It refers to the number of stitches in 1”. Mostly, this term is used for machine stitching, but the term is used in embroidery also.

Stitch density
It refers to the number of stitches used to give proper coverage of the design without creating a thick, hard area in the embroidery that may be uncomfortable to the consumer. This term is mainly used for machine stitching but is used for embroidery also.
**Notes**

**Strand**
It is a filament or fibre that is plaited, twisted, or laid parallel to make a unit for further twisting or plaiting into thread, yarn or rope.

**Surface Embroidery**
It is a form of embroidery in which the design is worked using decorative stitches and laid threads on the fabric rather than through the fabric.

**T**

**Tacking**
It refers to fastening pieces of fabric together, mostly temporarily, with stitches.

**Thread**
It is a slender, strong strand, especially designed for sewing or other needle work. Most threads are made by plying and twisting yarns.

**Thread clippers**
Small spring loaded scissors designed to operate with just the thumb and forefinger. These thread clippers are mainly used to cut the threads.

**Tilla**
It is a simple, flat metal wire, used for embroidery.

**Trimmings**
Decorating a garment/article using decorative and functional accessories or details is referred to as trimming. The trim is added to a garment to make it look embellished and attractive. Beautiful trims can be prepared through embroidery.

**Twill weave**
It is a type of textile weave with a pattern of diagonal parallel ribs. It can be identified by looking at the presence of diagonal lines that run along the width of the fabric.
Warp
It is the lengthwise yarns used in the weaving operation. This forms the basic structure of the fabric. Warp yarns generally have more twist than weft yarns because they are subjected to more strain in the weaving process and therefore require more strength.

Warp-faced
A textile that has predominantly vertical yarns (warp yarns) on its face.

Weft
The crosswise yarn that interlaces with warp in weaving is known as weft or filling yarn. Weft yarns are carried over and under the warp. Filling yarns, generally have less twist than warp yarns because they are subjected to less strain in the weaving process and therefore require less strength.

Wrapped stitches
It is a series of a single or several loops of thread or yarn around the hand sewing needle, to create ornate embroidery on the surface of the fabric.

Zardozi
The term is used for silver and gold metal embroidery.

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**Practical Exercise**

**Activity 1:**
Prepare a chart of any 10 embroidery terms.

**Material Required**
1. Chart sheet
2. Colourful pens/ sketch pens
3. Ruler
4. Pencil
5. Eraser

**Procedure**
1. Cut the chart sheet in A3 size.
2. Write any 10 embroidery terms on the chart.
3. Decorate the sheet.
4. Attach the sheet on the drawing board of your classroom.

**Check Your Progress**

**A. Fill in the blanks**
1. The full form of SPI is ___________ ___________ ___________.
2. Backing is used for ___________ and ___________ to the fabric being embroidered.
3. When fabric is seen through the embroidery design, it is called ___________.
4. When fabric is gathered by stitches, it is called ___________.
5. Embroidery is an art described as _____________________.
6. ___________ is also called as framing.
7. ___________ is the stitch forming device.

**B. Write short answers to the following**
1. What do you understand by embroidery? Write the names of five embroidery stitches that you know.
2. What can be said as regards the progress made in the field of embroidery from the ancient times to modern times?
3. Explain the following embroidery terms—
   (a) Backing
   (b) Frame
   (c) Puckering

**Session 2: Designs and Tracing Methods**
Design relates more to imagination, intuition, innovation and creativity. What inspires a person or designer to be creative and imaginative? Most of
the inspiration comes from learning and experiences of life and nature. A design is therefore the outcome of all the inspirations. A design for embroidery is drawn using lines and shapes. The selection of an embroidery design decides how the final output of the embroidery work would look. The appropriate selection of stitches, fabric, colour and thread type are crucial for a particular design.

**Types of design**
The inspiration for design has mostly been nature—flowers, leaves, trees, animals, paisley, human figure, birds. The national ecology of India seeps into most embroidery patterns. Infact most regions have their respective unique patterns and colour schemes.

Different types of designs are explained in this session.

**(a) Natural designs**
Any design inspired from nature, like birds, trees, even human figures, animals, flowers, scenery, etc., are natural designs. Natural compositions may include floral patterns too.

*Fig. 1.1(a) Natural design embroidered on a fabric*

*Fig. 1.1(b) Natural design*
(b) Floral designs

Natural designs having flowers, leaves, stems and their combination, come under this group.
(c) Geometric designs

These include designs made of geometric shapes, like square, circle, oval, diamond, triangle, rectangle, etc., or any combination of them.

*Fig. 1.3(a) Geometric design embroidered on a fabric*

*Fig. 1.3(b) Geometric design embroidered on a neckline*
(d) Abstract designs

Abstraction indicates a departure from the reality in the depiction of imagery form in art. It is away from what appears in real. It is a kind of modern art design with a combination of embroidery designs and stitches.

(e) Mythological designs

These include scenes or designs from mythological epics, or mythology symbols.

(f) Architectural designs

These include ancient historic monument designs and any architectural designs including palaces, buildings, etc.
(g) Tribal designs

Designs depicting typical characters of any tribe are included in this category, like tribal wall paintings, *Mandana*, *Warli* art designs, etc.

![Fig. 1.6(a, b) Tribal design](image)

(h) Stylised designs

These include the modern styles of design, like asymmetrical designs, or a combination of designs or depiction of designs in different ways by stylising them.

![Fig. 1.7(a) Stylised design on a neckline](image)  ![Fig. 1.7(b) Stylised design on a motif](image)
(i) Nursery designs

Designs mainly for children wear are known as nursery designs. They include designs, like cartoons, toys, teddy, animals, fruits, fairies, etc.

*Note*

All the above designs can be used to develop different patterns, which can be made on different pieces of fabrics, garments or linen. These designs are set on a garment by using various placements like alternate, repeat, drop arrangements, etc.
**Tracing materials and methods**

Various materials and methods are used to transfer the design onto the product or the fabric—
The tracing materials include—
(a) Embroidery design
(b) Tracing paper
(c) Pen or pencil
(d) Carbon paper
(e) Iron
(f) Piece of glass and lightbox
(g) Needle
(h) Chalk powder or Indigo (*neel*)
(i) Kerosene oil
(j) Dress maker pins or beaded pins
(k) Stencils of selected designs
(l) Design transfer sheet or paper

Those who are good at drawing designs can draw directly on the fabric by free hand method with the help of a pencil. On lightweight and fine or thin fabric, designs can be drawn with a pencil, keeping the fabric tight in the embroidery frame. Direct method of tracing can be used very easily on fabrics like georgette, lawn, voile, organdie, etc.

Some common methods of tracing are—

**Method 1: Transferring design with heat**

A common way to transfer images is with heat using design transfer sheet or paper, found in almost any craft or sewing store in the market. A sheet of design, an iron and a pressing cloth is required for tracing the design. Designs can be traced directly if the design is printable on a transfer paper or sheet. To print the design on the fabric, place the fabric face down and tracing sheet on it then heat it with an iron for an appropriate time to transfer the design on the fabric. A transfer paper or sheet of printable design is available in the market with detailed instructions, including time period for heating, on how to transfer the design. The design will transfer to the fabric or garment perhaps in a few seconds.
Method 2: Transferring design using light

In this method, an embroidery pattern is transferred, by using light. It allows tracing each line of the design. Both daylight as well as a lightbox can be used. To use daylight, find a bright window that receives a good amount of sunlight. Now tape the design on to the glass of the window and tape the fabric over it as the sunlight shines through the fabric. Now the design can easily be copied by way of tracing on to the fabric. Or else, a lightbox can also be used. A lightbox is a box with a transparent glass on top and a light source (usually a bulb or small tubelight) attached under it. When using a lightbox, the design is put on the glass top of the lightbox and the fabric is taped over it. The light will expose the design and it can be traced and transferred to the fabric easily with the help of an appropriate light shaded pencil so the design is not smudged.

Method 3: Transferring design using carbon paper

The simplest method of transferring design is by using carbon paper. Carbon papers of different colours (light and dark) are available in the market. They may be selected according to the colour of the fabric on which the design is to be traced. Place the coloured side of the carbon paper on the face of the fabric, and then put the design sheet on the top of the carbon paper. Then, draw all the lines of the design with a pointed pencil or pen. Care should be taken to trace only on the lines of the design, otherwise the carbon will smudge the fabric. The fabric is placed on a hard surface, otherwise the
design will not be traced properly. Do not press hard on the carbon paper, else the colour from the carbon paper itself may get transferred on to the fabric, which might be difficult to remove.

Method 4: Transferring design with prick and pounce

The design is first traced on a tracing sheet and holes are made evenly along the outline of the design including the intricate lines, using a needle. Holes should be made evenly and close to each other, so the design can be traced clearly and neatly. For tracing the design, the fabric is placed on a hard surface, with tracing paper of perforated designs placed on it. A solution of kerosene and indigo (neel) is rubbed with a piece of sponge or cotton on the transferring sheet to transfer the design on the fabric. This rubbing or dabbing is known as pouncing. Remove the tracing paper to get the final design traced on the fabric. The tracing paper should be removed very carefully so the solution does not spread on the design. The pattern pricked on the transparent sheet of paper, that is pinned to the fabric is called **khaka**.

Method 5: Transferring design with stencils

A stencil is a cut-out of a design pattern to help make an identical copy of it on another surface, accurately. Stencils are extremely useful for repeat designs, mixing and matching for a unique style. It works on light and medium weight fabrics, like cotton, rayon, linen, silk, and many synthetic blends or mixed fabrics. First of all, select the stencil for the transfer of design and place it on the
right side of fabric. Then, use a transfer pencil or pen to trace the design in the cutout areas of the stencil. Stencils of different designs and sizes are available in the market. They are made of different materials like metal, plastic, thick paper, etc. Stencils may be selected according to the requirement of the embroiderer.

**Suggestion**

To get the best results, use any of these transfer methods according to the fabrics or items. It should be taken care that the fabric should be clean, starch-free, stain-free or protective coating-free, because these coatings can interfere with the ink or chalk transferring to the fabric.

**Note**

1. Heat transfer methods make a stable image. It should be completely covered by the stitches of the embroidery, so that the pencil or markings are not visible. Design transfer through hot iron, create a reverse image of the design. It means that the design is required to be transferred in reverse.
2. Use headed pins wherever required to fix the fabric, sheet, etc.

### Practical Exercises

**Activity 1**

Prepare a chart of the different types of designs.

**Material Required**

1. Pencil
2. Chart sheet
3. Ruler
4. Eraser
5. Coloured pencils to decorate

**Procedure**

1. Select designs of different types.
2. Draw the designs on the chart sheet.
3. Decorate them with coloured pencils.
4. Label the types of designs.
5. Place the chart in your classroom.
**Activity 2**

Trace different designs on a fabric sample.

**Material Required**

1. Tracing paper
2. Carbon paper
3. Pencil
4. Chart sheet
5. Fabric sample (8”x8”)

**Procedure**

1. Draw two natural or geometrical designs of size 6”x6” on a sheet.
2. Trace the design on the tracing paper.
3. Using the transfer method through carbon paper, trace the design on the fabric sample (Follow the instructions as given above in the session).
4. Attach the sample on a chart sheet and keep in your practical file.

**Note:** Activity for all the tracing methods may be performed.

**Check Your Progress**

A. Fill in the blanks

1. The designs used mainly in kids’ wear are called ______________.
2. ______________ are extremely useful for repeat patterns, mixing and matching for a unique style.
3. ______________ designs are away from what appears in real.
4. Holes on the sheet of design are made in the method of transferring design with ______________ and ______________.

B. Write short answers to the following

1. Explain any three types of designs with examples.
2. Explain any two methods of transferring designs.
3. Draw any two of the following designs:
   (a) Abstract design (b) Stylised design (c) Nursery design