APPAREL MADE-UPS HOME FURNISHING
SECTOR SKILL COUNCIL

Participant Handbook

Sector
Apparel, Made-ups and Home Furnishing

Sub-Sector
Apparel

Occupation
Embroiderer

Reference ID: **AMH/Q 1001, Version 3.0**
NSQF level: 3

Hand Embroiderer

(Addawala)

> **Skilling is building a better India. If we have to move India towards development then Skill Development should be our mission.**

Shri Narendra Modi
Prime Minister of India

Acknowledgements

About this Book

This Participant Handbook is designed to enable training for the Specific Qualification Pack (QP). Each National Occupational (NOS) is covered across Unit/s.

Key Learning Objectives for the specific NOS mark the beginning of the Unit/s for that NOS.

- AMH/N0102: .Maintain workarea, tools and machines and Greening of Job Roles
- AMH/N0103: Maintain health, safety and secure work place with Gender and PwD Sensitization
- AMH/N0104: Comply with industry, regulatory and organizational requirements and Greening of Job roles
- AMH/N1010: Plan Organize and Carry out the process of hand embroidery(addawala)
- AMH/N1011: Embroider decorative designs using a combination of stitches & work styles as per customer requirements
- AMH/N1003: Contribute to achieve quality in embroidery work

The symbols used in this book are described below:

Symbols Used

Learning Outcomes	Exercise	Steps	Activity	Tips	Notes	Objectives
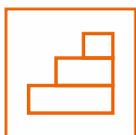
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1. Introduction and Orientation

Unit 1.1 – Introduction to Hand Embroidery and Apparel Sector

Unit 1.2 – Role and Responsibilities of Hand Embroiderer (Addawala)

Key Learning Outcomes

At the end of this module, participants will be able to:

1. Familiarise with apparel industry.

2. Identify the role and responsibilities of a hand embroidrer (Addawala).

UNIT 1.1: Introduction to Hand Embroidery and Apparel Sector

Unit Objectives 🎯

At the end of this unit, participants will be able to:

1. Familiarise with Apparel Industry.

2. Familiarise with Embroidery and Hand Embroidery in India.

1.1.2 Apparel Sector – Industry Overview

The apparel and textile industry is one of the most booming industries. Apart from providing one of the basic necessities of life, it also plays an important role through its contribution to industrial output, employment generation, and the export earnings of the country. With Indian apparel and textile being among the world's largest producers, the country is also the 5th largest exporter of apparel and textile across the globe with US$ 36.4 billion. (source: Annual T&A industry report 2021 by Wazir Advisors)

Fig.1.1.1: Apparel production process

The textile industry is one of the oldest business options in India since the ancient age. Different types of textile fibers are produced in India, among which cotton, jute, silk, and wool are the major ones. Both skilled laborers and unskilled officials are needed to run this business smoothly. Thus, the textile and apparel industry serves as the platform offering a huge number of employment opportunities to eligible people in India. A brief on complete supply chain for apparel industry is shown as below.

The Indian textile sub-sector has traditionally been contributing significantly to the economy and manpower as well as to the structural changes in the manufacturing sector. Several factors that would contribute to the growth would include:

• Rising income levels are expected to increase the demand for home textiles and garments from domestic Consumers.

• Free trade agreements provide India a comparative advantage in the export segment as compared to its competitors – China, Bangladesh and Pakistan – as they create opportunities for manufacturers to supply to potential markets in East Asia.

• Low production cost continues to be an advantage for the sector and, consequently, demand from existing foreign markets continues to increase.

• Structural changes in the sector, with a shift from vertically disintegrated to integrated large firms, with automated machines for yarn and fabric production.

• Increased spending on research and development to enter the specialized fabrics and technical textiles sector.

• Favorable policy environment to support domestic and foreign investments and the implementation of schemes to enhance the production capacity and improve technology.

Ready Made Garments

The ready-made garments segment comprises men's, women's and kid's clothing, which may be used for either private (home/office wear) or commercial (uniforms for school, waiters and flight crew) purposes. The ready-made garments section has grown rapidly in the last few years. Both exports and domestic demands shall drive sector growth in future.

• Men's wear is the biggest segment in the ready-made garment segment, comprising about 43 percent of its share in the total revenue generated. This is followed by women's wear, with a share of 38 percent; 10 percent share of boys wear and 9 percent for girls wear in the total revenue generated by the ready-made garment segment.

• Changing lifestyles and consumption patterns are expected to drive the sector's supply of casual wear with an 11 percent growth, which would drive demand for workforce with specialized skills in western formals design, blended fabrics and increased application work on clothes.

Garment Factory Departments

Pre-Production	Production	Auxiliary
• Marketing and business development • Design • Merchandising • Sampling • Production Planning and Control • Pattern Making • Fabric Store and fabric sourcing • Trims and Accessory Store • Fabric Testing Lab	• Cutting department • Sewing department • Quality Control department • Machine Maintenance department • Garment Washing department • Finishing department • Printing department • Embroidery department • Packing	• Industrial Engineering Department • EDP / IT department • Accounting Department • Human Resource and Administration • Shipping and documentation

Fig.1.1.2: Apparel production department

1.1.3 Made-ups and Home Furnishings

The made-ups sub-sector is growing at a steadily increasing pace in the country. The wide variety of products that come under this sub-sector are not only include necessities but also functional and luxury products. Made- ups sub-sector is divided into three (3) broad categories:
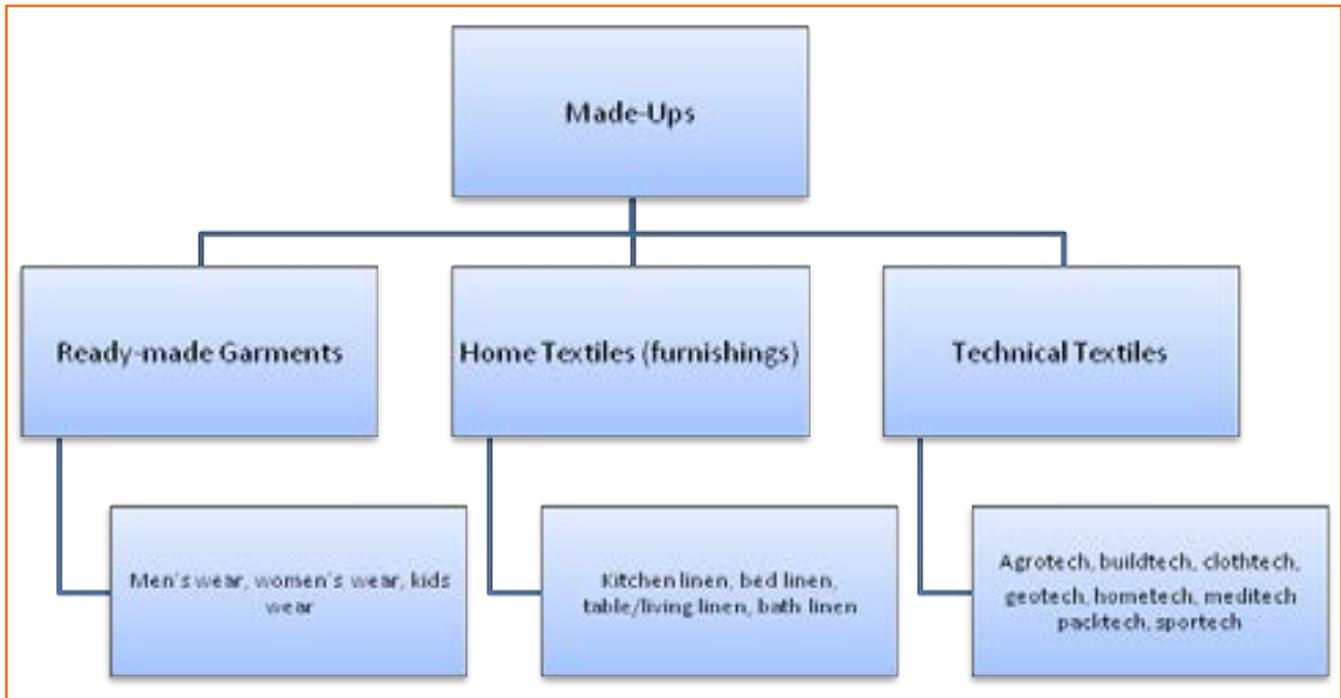
Fig.1.1.3: Made-ups and Home Furnishing Sub-sector

Indian is among one of the biggest exporters in Apparel and Made-ups industry. In Home Textiles India is second only to China in global exports, whereas in apparels, India is among the top 10. , India is fast becoming one of the leading global players in the Home Furnishings/ Textile. Home Furnishings industry offers wide varieties of products like bedspreads, furnishing fabrics, curtains, rugs, cushion covers etc.

The Indian Home Furnishing industry provides a unique blend of modern technology and ethnic techniques to bring out products that are one of the best in the world. The increase in the spending power of the Indian working class is also expected to contribute in the growth of domestic consumption of made-ups and home furnishings industry.

Fig.1.1.4: Home Furnishing

With increased demand and completion from countries like China, the demand of skilled workforce/kaarigars in the Home Furnishings industry is bound to increase in coming years

Size of Indian Textile and Apparel Industry

In India, the Apparel industry is spread across the country. However, the distribution of the clusters depends on the availability of raw material as well as the manufacturing. Cotton based units can be seen in all parts of the country, while the synthetic and woolen based industries are mainly concentrated in Maharashtra, Gujarat, Punjab, Jammu & Kashmir, Haryana, Madhya Pradesh and Uttar Pradesh. The silk-based industry finds concentration in Andhra Pradesh, Karnataka and Tamil Nadu while, jute clusters are largely located in Bihar and West Bengal.

Most of the apparel exporters (approx. 95%) are based out of Delhi NCR, Tamil Nadu Punjab, Rajasthan, Maharashtra and West Bengal. Rest of the India accounts for remaining 5% of the apparel exporters.
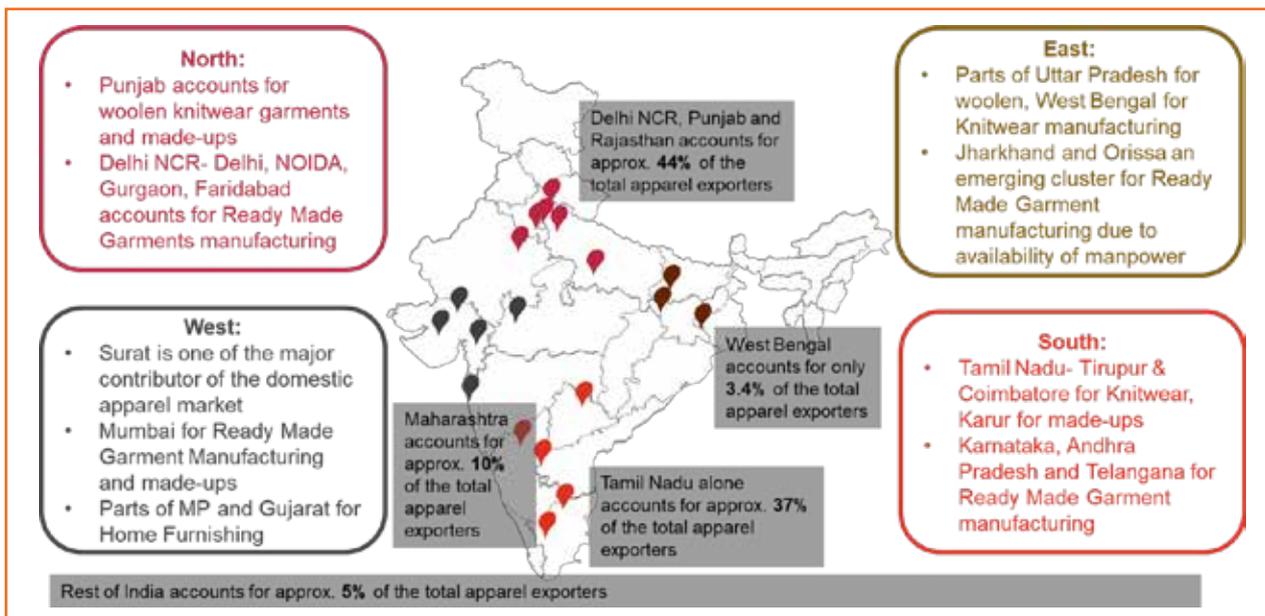
Fig.1.1.5: Major Apparel, Made-ups and Home Furnishing Clusters in India

1.1.4 Introduction to Embroidery and Hand Embroidery

Embroidery is the art of decorating a fabric's surface making stitches in a pattern with the help of needle and thread. It can be described as a kind of a painting with needle and thread. One of the major advantages of using embroidery design is the style it adds to a garment, enhancing its beauty. Embroidery enhances the look of a wide range of garments and cloth material like caps, hats, gloves and other clothing goods, as well as bed sheets and blankets etc.

Embroidery is a form of handicraft which involves decorating fabric or other materials with a needle and thread, or yarn. Embroidery, integrates other things like metal strips, sequins, quills, beads, pearls, etc. Basic techniques of stitching as done in some of the earliest thread work like chain stitch, buttonhole or blanket stitch, runningstitch, satin stitch and cross stitch etc. remain the fundamental techniques of hand embroidery even today. Embroidery is most often seen on Sarees, dress materials which are used to make salwar- kameez, dresses, frocks, caps, hats, stockings, coats, blankets, dress shirts, and denim.

Machine embroidery mimics hand embroidery, especially while making chain stitches. The "satin stitch" and hemming stitches of machine require numerous filaments, threads and resemble hand work in their look, though not in their structure.

Hand Embroidery in India is an age old cultural heritage. India is very rich in Hand Embroidery and different regions have their own distinct design and technique. Major embroidery techniques employed in the different states of India are described below. There are various types of hand embroidery that are used depending on the design or fabric. Few common types of hand embroidery are given in the table:

Name of Embroidery	Description	Illustration
Crewel embroidery of Kashmir Crewel / Aari	Crewel embroidery of Kashmir Crewel/ Aari embroidery is produced by passing the thread through the Aari or a hooked needle held under the fabric. The hook is used to pull a series of loops, each emerging from within the previous, to the surface of the fabric. The Figs or motifs are worked in striking colours; the background is in a single colour, made up of a series of coin sized concentric circles.	
Sozni embroidery of Kashmir Sozni	Sozni, also known as 'Sozankar' is a form of very fine and subtle needlework done mainly on stoles, shawls and scalfs. These are mainly pashmina and high quality raffal. Only a single strand of thread is used in finished sozni, the motif seems on both the sides of the fabric, each side having a dissimilar colour arrangement and no trace of the stitch. Motifs, are abstract designs like flowers, worked in one or two, and infrequently three subdued colours. The stitch employed is not like a stem stitch	
Chamba Rumal of Himachal Pradesh	The embroidery of the Chamba Rumal originated in the 18th and 19th centuries in the hilly states of Chamba, Kangra and Basohli, now parts of Himachal Pradesh and J&K. The subject of the embroidery is based on religious themes comprising Hindu deities, floral motifs, birds and animals. Rasa-mandala and Krishna are common themes used in the Chamba Rumal embroidery. The embroidery is done using a double satin stitch carried forward and backward, alternatively, done simultaneously on both the sides of the cloth making a similar design appear on both sides. This technique is known as Dorukha. Untwisted threads dyed mainly golden yellow or orange are used in this type of embroidery.	

Phulkari of Punjab	Phulkari is the conventional embroidery work done on an odhni/dupatta which is like a daed drape or a stole used by women in Punjab. Symmetrical patterns are compactly embroidered with unravelled silk floss to generate various shades with the same dyed floss. It is most commonly done on a base of rough and hand-spun woven cotton (khaddar). Women work on the opposite side of the fabric by counting threads and using patch-up stitch. Designs and regularities are made by embroidering from the back face of the cloth	
Zardozi of Uttar Pradesh	Zardozi is the most famous and elaborate technique of embroidering using zari, or a thin metallic thread. It was originally done with pure silver and gold threads, in the regions of Lucknow, Agra, Bareilly, Bengal and Varanasi. The tools used in this process include curved hooks called Aari, needles, salmaa pieces (gold wires), sitaras (metal stars), round-sequins, glass and plastic beads, dabka (thread) and kasab (thread). Zari work is popularly done on fabrics like silk, satin, velvet, etc. on an Adda frame.	
Chikankari of Lucknow	The term 'Chikan' is derived from a Persian word 'Chikin' or 'Chikeen' which means a kind of embellished fabric. Chikankari is a very old form of white flowery embroidery. It is knottily worked with needle and raw thread. It is placed mostly in Lucknow. Chikan is chiefly white embroidery on white fabric, with floral designs executed on fine white cotton with untwisted threads of white cotton	

Kantha embroidery of West Bengal	The word Kantha means patched clothes. Kantha originated in Bengal. Earlier two or three fabrics were sewn together to make a warm and also decorative fabric. Kantha embroidery now is done on a single cloth in the Dorukha or double faced style in which the stitches are so skilfully made that the details of each design appear identical on either side. Simple cotton threads are used in kantha stitches. Five and six threads are put into the needle to cover the entire surface in the style of rusnning stitches.	
Sujani Embroidery of Bihar	Sujani is a term used for straight running stitch embroidery on layered cotton. This style of embroidery has its rich originality from the state of Bihar in the 18th Century. It was originally practiced only by Rajput women and the articles made were used for home or personal use. Patches of diverse coloured cloth are used to be stitched together and then covered in designs to make a small quilt for newly-born babies. The designs are based on dissimilar themes from the daily life like it can be used for the new-born since the fabric is very soft.	
Pipli of Orissa	Pipli is an appliqué craft where a piece of cloth is stitched over another cloth to create designs and patters. Pipli is mainly practiced in a village in the district of Puri, Orissa, situated on the Jagannath trunk road nearly 20 kms from Bhubaneswar and 40 kms from the Puri town. In ancient times Pipli had a royal patronage and was used in temples. Various colourful utilitarian as well as ceremonious products for the temple are made with this technique.	
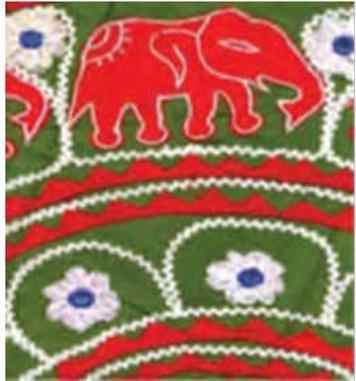
Kasuti	Kasuti work involves embroidering very intricate patterns like gopura, chariot, palanquin, lamps and conch shells. Locally available materials are used for Kasuti. The work is laborious and involves counting of each thread on the cloth. The patterns are stitched without using knots to ensure that both sides of the cloth look alike. Different varieties of stitches are employed to obtain the desired pattern. Four types of the stitches employed are Gavanthi, Murgi, Negi and Menthi. Gavanthi is a double running stitch used for marking vertical, horizontal and diagonal lines, Murgi is a zig-zag stitch, Negi is a running stitch and Menthi is a cross stitch resembling fenugreek seeds.	

Fig.1.1.6: Common types of hand embroidery

1.1.5 Skill Development Policy

Indian government runs more than seventy skill development schemes at central, state and district level. The government has launched the Skill India flagship program to empower youth of the country by imparting employable skills to them. Under this initiative, the government has set up Ministry of Skill Development and Entrepreneurship (MSDE) to bring all the skill initiatives of the government under one umbrella and lead skill development ecosystem in the country. The ministry also launched a comprehensive Skill Development Policy in 2015 in which, detailed skill set requirement, courses offered, and roles and responsibilities of different stakeholders were defined. Further, sector wise skill gap analysis was also undertaken to understand sector specific skill requirement.

Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) are the flagship schemes which offer a variety of courses in the AMH sector. Among other skill development programmes, Integrated Skill Development Scheme (ISDS) was the main program run by the Ministry of Textiles, Government of India, introduced in XIIth Five Year Plan (FY 12-17).

The scheme had a target to train 1.5 million people for the T&A industry. As continuation of the scheme, the ministry has launched Scheme for Capacity Building in Textile Sector (SCBTS) also known as SAMARTH in 2018 with a target to train 1 million people in the sector.

ISDS has helped the industry by supplying skilled workforce, which, in turn, has helped the manufacturers in improving productivity and quality. Overall, it has helped in reducing cost, wastage and improving competitiveness that resulted in better business performances.

1.1.6 Employment Scenario in the Sector

Indian Garment Industry is closely connected to the fashion industry and grows hand in hand. Apparel Made-up & Home furnishing (AMH) is one of the largest employments generating sector in India, constituting about 60 per cent share of the total Textile and Apparel (T&A) exportsThe Indian textile sub-sector has traditionally been contributing significantly to the economy and manpower as well as to the structural changes in the manufacturing sector .As per the latest round of Periodic Labor Force Survey (2018-19), the total workforce in India is estimated to be about 479 million. The share of labor working in the manufacturing sector was around

12.2 per cent (about 59 Million). Direct employment in the AMH sector primarily comes under manufacturing and the service sectors. The AMH sector employs about 35.8 million labour out of which 47% are engaged directly through the core manufacturing and trade of AMH product and 53% are engages indirectly through the ancillary sector activities.

India is among the very few countries which have presence across the entire supply chain, from natural and synthetic fibers right up to finished goods manufacturing. It has presence in organised mill sector as well as decentralised sectors like handloom, power loom, silk, etc.

Incremental human resource requirement in core AMH sector, including manufacturing and trade is estimated to be about 35 Lakh for upcoming five years period between 2021-22 and 2025-26. Of the total incremental human resource demand, 89 per cent demand is projected to be in manufacturing of AMH products and 11 per cent demand is projected to be in trade related activity. Incremental labour demand in ancillary sector is estimated to be about 52 Lakh. Thus, the total incremental labour demand in AMH sector is about 87 Lakh.

Total incremental supply at all skill level, during the 2021-25 period, is projected to be of 110.4 Lakh. With the incremental demand of 31 Lakh, the skill gap in AMH - manufacturing is projected to be of 12.6 Lakh.

UNIT 1.2: Roles and Responsibilities of Hand Embroiderer

Unit Objectives ⊚

At the end of this unit, participants will be able to:

1. Explain who is a Hand Embroiderer (Addawala).

2. Describe the roles and responsibilities of a Hand Embroiderer (Addawala).

1.2.1 Hand Embroiderer (Addawala)- Job Description and Attributes

A Hand Embroiderer (Addawala) embroiders decorative designs on fabric and other materials using needle and thread. The hand embroiderer uses various techniques to create variety of embroidery stitches and effects such as Bullion knot stitch, Cross stitch, English Hand Embroiderercking, French knot stitch, Applique work, Shade work etc. The hand embroiderer should have the skills to stitch a variety of Loop stitches, Flat stitches and Knotted stitches.

The key attributes of a Hand Embroiderer (Addawala) are:

• Good eyesight

• Hand-eye coordination

• Motor skills

• Vision which includes distance and near vision, colour vision, depth perceptions, peripheral vision, and the capability to change focus.

1.2.2 Role and Responsibilities of a Hand Embroiderer (Addawala)

The key roles and duties of a Hand Embroiderer (Addawala) are:

• Comprehensiveness and aptitude to use various methods of embroidery to create needlework stitches and impacts.

• Understanding of numerous fabrics and cloth materials on which embroidery is to be finished.

• Confirming that all resources required for the task are as per the specification.

• Analysing & construing the given design which needs to be embroidered and the type of embroidery that is essential.

• Tracing design of fabric or other material to be embroidered.

• Understanding to choose appropriate needles and threads for the chore at hand.

• Carrying out flat, loop and knotted stitches, as required (like Back stitch, stem stitch, cross stitch, chain stitch, button hole stitch, bullion knot stitch, French knot etc.)

• Combining various embroidery techniques to create decorative designs like Tapestry stitch, Shadow work, Mirror Work, English Hand Embroiderercking etc.

• Ensuring that embroidered fabric/other material meets quality standards specified

- Ensuring minimum wastage of raw material
- Reporting faults in jobs and tools to supervisor
- Understanding of various types of defects
- Maintaining documentation for tasks allocated and tasks completed
- Understanding of safe working practices and procedures
- Understanding of Health and Safety policies of the work place
- Maintaining tools and equipment

Resources

Scan the QR codes or click on the link to watch the related videos.

Descriptions	QR Codes
Apparel industry in India	https://youtu.be/tN5oLGSjepQ
Traditional Embroideries of India	https://youtu.be/Q1tb_q1i6lA
Role and Responsibilities of Hand Embroider (Addawala)	https://youtu.be/hmVQB6Xs8SY

Exercise

1. India is _____ largest exporter of Apparel and Textile

   a) 2nd

   b) 3rd

   c) 4th

   d) 5th

2. The apparel and textile industry contributes _____ percent to the country's GDP from domestic sector

   a) 5

   b) 6

   c) 7

   d) 10

3. Biggest segment in the ready-made garment is

   a) Children's Wear

   b) Women's Wear

   c) Men's Wear

   d) Sport's Wear

4. Which of these items comes under category of Home Furnishing and Made-ups?

   a) Bedspreads

   b) Curtains

   c) Cushion covers

   d) All of the above

5. What is the full form of PMKVY?

   a) Pradhan Mantri Kushal Vikas Yogna

   b) Pradhan Mantri Kaushal Vikas Yogna

   c) Pradhan Mantri Krishi Vikas Yogna

   d) None of the above

6. In which year SAMARTH Scheme launched?

   a) 2015

   b) 2016

   c) 2018

   d) 2021

7. India is _____ largest exporter of Apparel and Textile

   a) 2nd

   b) 3rd

  c) 4th

  d) 5th

8. Which of the followings are the types of hand embroidery:

  a) Chamba Rumal

  b) Kantha

  c) Pipli

  d) All the above

9. Which of these materials are used in embroidery?

  a) Sequins

  b) Beads

  c) Pearls

  d) All the above

10. Which of the followings are the key attributes of a hand embroider?

  a) Motor Skills

  b) Good eyesight

  c) Vision

  d) All the above

2. Plan and Organize the Process of Hand Embroidery (Addawala)

Unit 2.1 – Introduction of Materials and Equipment Required for Hand Embroidery

Unit 2.2 – Knowledge of Design & Color

Unit 2.3 – Preparation for Embroidery

Key Learning Outcomes

At the end of this module, participants will be able to:

1. Learn the different tools required for embroidery.

2. Differentiate the threads used in embroidery.

3. Identify the types of fabric and their selection for embroidery.

4. Analyze different needles and their selection.

5. Describe the function of embroidery hoops/frames.

6. Learn about other tools used in embroidery.

7. Explain design and design concepts.

8. Familiar with the elements and principles of design.

9. Elaborate the color wheel and characteristics of color.

10. Do preparation prior to embroidery.

11. Recognize different embroideries.

12. Identify the techniques and motifs for these embroideries.

13. Elaborate methods for transferring design on fabric.

14. Practice how to adjust fabric on frame.

15. Demonstrate how to work with thread.

UNIT 2.1: Introduction of Materials and Equipment Required for Hand Embroidery

Unit Objectives 🎯

At the end of this unit, participants will be able to:

1. Identify the needles and their selection.

2. Discuss about different threads used in embroidery.

3. Recognize and learn about other tools used in embroidery.

4. Discuss about different types of fabric and their selection for embroidery.

5. Describe about embroidery hoops/frames.

2.1.1 Tools and Equipment in Hand Embroidery

Hand Embroidery requires a number of tools and equipment to carry out the stitching/embroidering work. It is essential to recognise the tools and use the correct tool for a given task.

The key tools and equipment used in Hand Embroidery are:

Needles

Needle is the most basic and no doubt an eminent tool involved in hand embroidery. Though any kind of needle can pull a piece of thread through fabric, but some specific types of needles do specific jobs better. Using the right needle for the job not only makes embroidery seamless but also ensures that quality of the work is superior than otherwise.

Embroidery needles are available in the market in different sizes and types. Different types are used for different types of embroidery.
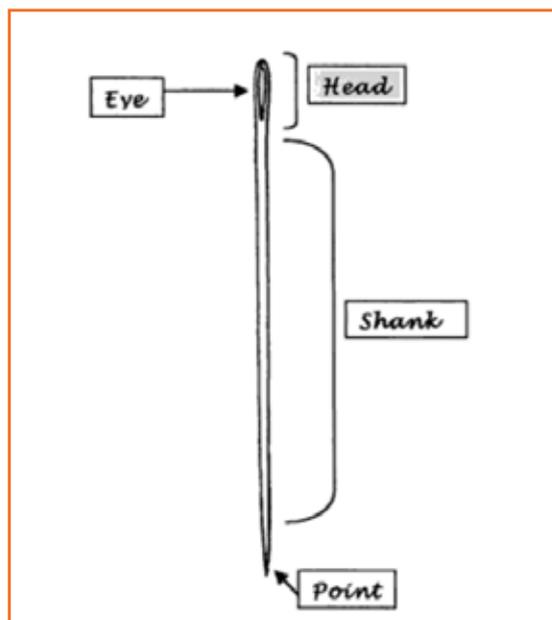
Fig.2.1.1: Needle Characteristics

Needle Characteristics				
Size	**Point**	**Width**	**Length**	**Eye**
• Needles are generally sized as in, the larger numbers being kept for the thinner needles. • As an example a size 24 tapestry needle is thicker than a size 26, which is used for 28 or 32 count even-weave draperies. The thicker size 18 would be best suited for canvas work.	• The more closer the woven fabric, he pointer the needle to pierce. • For even-weave fabrics, such as Aida cloth, linen or canvas, one would use a blunt. There are even ball pointed needles for use on knitted fabrics for example, jersey or sweatshirt material.	• The widt h or diameter of the shaft can be the same throughout the length of the needle or it can widen at various points.	• Different needle-work techniques need a dissimilar length. A longer one is essential if you want to wrap the thread, but for speed, such as when quilting, a short is suitable.	• The shape of the eye is another point of difference in the needles. These can be round, long, elongated or even Self-threading. A round eyed needle is stronger any any other type.

Fig.2.1.2: Needle Characteristics

The most commonly used embroidery needles are detailed below:

1. **Crewel or Embroidery Needle:** This type of needle is the most basic type of Embroidery needle. It is a sharp tilted needle with a medium to long eye (larger than shaft of the needle). The medium to large eye of the needle helps to accommodate embroidery threads, while the sharp tip enables it to pierce through tightly woven fabrics with ease. These are ideal for nearly all surface embroidery and Hand Embroidercking. These needles come ins sizes from 3-10.

Fig.2.1.3: Crewel or Embroidery Needle

2. **Tapestry Needle:** This type of needle has shorter shaft compared to the Crewel needle, but with a longer eye and blunt tip. This needle is used forneedle point, hardanger, blackwork or cross stitch on evenweave fabrics. The long eye of the needle is used to take thick or multiple stands of floss or wool for embroidering. Tapestry needles come in sizes 18-28.

Fig.2.1.4: Tapestry Needle

3. **Chenille Needle:** This type of needle has long eye related to that of the Tapestry needle, but has a sharp point. This needle is thicker and sturdier Compared to the other needles and is ideal for thick fibres and abrasive fabrics. Chenille needles come is sizes 18-24.

Fig.2.1.5: Chenille Needle

Fig.2.1.6: Milliner Needle

4. **Milliner Needle:** Milliner needle is also called the straw needle. It has a smaller and rounded eye and a very long tube with sharp tip. The eye and shaft of the needle are of identical size in this type of needle, making Milliner needle most appropriate for working on any wrapped stitches like bullion.

5. **Ballpoint Needle:** Ballpoint needles are used for lace work. There isn't any sharp tip in this needle type. The biro tips slips-up effortlessly across the pattern deprived of piercing it, and also does not pierce the threads making up the lace stitches. They have a round point, and are of average length in sizes 3-9.

Fig.2.1.7:Ballpoint Needle
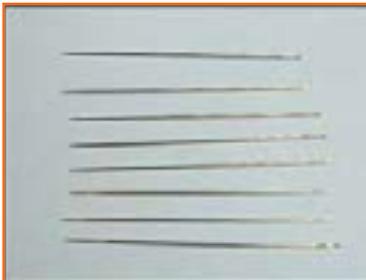
Fig.2.1.8: Beading Needle

6. **Beading Needle:** Beading needles are very long and thin. These have long eye and sharp point. These needles are good enough to pass through the hole in a seed bead and elongated efor many beads to be threaded onto them. Size 10-15 is in which they come.

7. **Quilting Needles:** These are also called betweens. These are round eyed and have sharp points along with being short compared to others. They are used by quilters for quick and even stitching. They come in sizes 3-10.

*Fig.2.1.9:*Quilting Needles

Fig.2.1.10: Easy Thread Needle

8. **Easy Thread Needle:** These needles come with a special eye that is a slot. The thread is pulled into the slot and these are used for overall purpose work.

There is one more type of needle used by Adda Hand Embroiderers called as Aari Needle.

It is the main tool of the Zardozi embroidery. It has a hook at the tip and a wooden handle at the back. The needles are also available with an iron and a plastic handle. Aari (needles) are available in different sizes and

*Fig.2.1.11:*Quilting Needles

thickness, which may be selected according to the type of the fabric, design, type of thread and raw material used. For fine fabric, fine Aari is used, while for a heavy fabric, a thick Aari is used. An Aari may be selected according to the raw material also, for example Aari for zari, Aari for sitara or for dabka, etc. Thus, it can be selected by the embroiderer according to his/her requirement, looking into all the aspects of embroidery work.

Aari resembles the shape of a crochet needle and is a pen-like needle. It forms an intrinsic form of artwork called the Aari work.

• The needle hooks are made of iron;

• They are sometimes handcrafted;

• They do not damage the fabrics, even very fine fabrics, as they are filled properly;

• They look like crochet hooks but are still different from it.

• They are of different sizes according to the use. For example: hooks used to stitch silk and zari threads are different in size from the hooks used to stitch sequins and beads. Aari plays a major role in embroidery work.

Embroidery Threads

Commonly used Embroidery Threads are:

1. **Embroidery Floss:** Embroidery floss is one of the most multipurpose threads for embroidery. It comprises of 6 easily separated strands, allowing you to adjust to the thickness of your sewing by using a different number of strands.

Fig.2.1.12: Embroidery Floss

Fig.2.1.13 Pearl Cotton

2. **Pearl Cotton:** A finely twisted undivided thread with a silky shine is pearl cotton. If you want to give the texture a lustrous finish this is it. It is available in sizes 3, 5, 8 and 12, with larger the number, the finer the thread.

3. **Silk Thread:** These are synthetic threads that are shiny in dispositions. These threads are usually packaged as a floss that can be separated or single-ply threads such as braids, narrow ribbon or halographic ribbon.

Fig.2.1.14: Silk Thread

Fig.2.1.15 Metallic Thread

4. **Metallic Thread:** These threads are a blend of rayon with hair-thin metal strands, giving them a glossy and textured look. Metallic threads are also available in floss, single ply or pearl cotton varieties.

5. **Satin and Rayon Threads:** Satin and rayon threads are synthetic threads that are shiny like satin. These threads are usually packaged as a floss that can be separated or single-ply threads such as braids, narrow ribbon or halographic ribbon

Fig.2.1.16: Satin and Rayon Threads

Fig.2.1.17: Wool Thread

6. **Wool Thread:** Wool threads come in a variety of weights, including very fine crewel wool, divisible Persian wool, and tapestry wool (most commonly used in needlepoint)

7. **Novelty Thread:** These threads include a wide range of styles, qualities, materials and supplies. They can be fuzzy, metallic, textured, leather, plastic and more. These are mostly used for adding special properties to the embroidered design.

Fig.2.1.18: Novelty Thread

Fig.2.1.19: Wired Threads

8. **Wired Threads:** Wired threads are not used for stitching. Instead they are stitched to the surface of a finished design to add texture, dimension and detail to the embroidered design. These threads can be bent, warped and curled and hold their shape due to the hidden interior wire.

9. **Zari Thread:** A gold/silver thread, is usually used to give the embroidery a rich texture.

Fig.2.1.20: Zari Thread

2.1.2 Other Tools used in Embroidery

Scissors: Scissors are utilized for cutting the fabric and has a handle which is aligned with the blade which helps in cutting.

Fig.2.1.21: Scissors

Rotary cutter: The rotary cutter has a blade to cut easily and Hand Embroidererothly through fabric. It's used in different kinds of projects, especially for quilting.

Fig.2.1.22: Rotary cutter

Measuring tape: Measuring tape is used for sewing/embroidery to make it softer than that used for construction projects so that it can be used to fit clothing to the body.

Fig.2.1.23: Measuring tape

Sewing Needles: A sewing machine requires different needles than those used for hand-sewing. Machine needles usually have a bigger as well as blunter tip.

Fig.2.1.24: Sewing Needles

Pins: Pins are used to hold fabric together where it's supposed to be sewn and to be adjusted as per the required fitting during alterations.

Pincushion: Pincushions are very useful in keeping the pins in order and in place, it is usually in apple's pumpkin's or tomato's shape.

Fig.2.1.25: Pins and Pincushion

Iron and Ironing Board: An iron is used to press fabric, seams open and make darts. Your everyday iron is fine.

Fig.2.1.26: Iron and Ironing Board

Seam ripper: The name says it all: It's used to rip seams. Especially comes in handy when you're a beginning sewer.

Fig.2.1.27: Seam ripper

Fig.2.1.28: Pinking Shears

Pinking Shears: cuts a zigzag edge and is used for finishing hem edges, seams, etc. It should not be used for cutting out a garment b'coz it will not give an accurate cut line of the fabric.

Figure 2.1.29: Cutting Table

Cutting Table: a flat board placed on a table where the fabric is laid out and cut. The fabric can be pinned securely to the cutting board/table to prevent it from slipping.
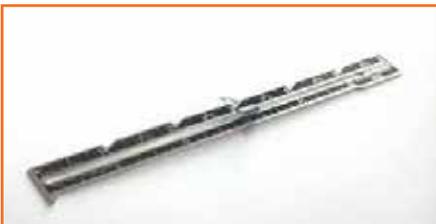
Figure 2.1.30: Sewing Gauge

Sewing Gauge: a 6 inch gauge with a movable indicator convenient for measuring short lengths.

Hem Gauge: a measuring device marked with various depths and hemline folds. It is practical when hemming straight on grain edges.
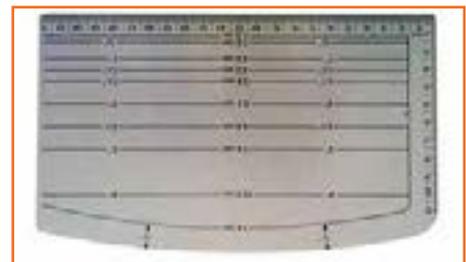
Figure 2.1.31: Hem Gauge

Figure 2.1.32: Yardstick/Meterstick

Yardstick/Meterstick: is use to measure fabric and to check grain line. It can be used in marking a long straight lines and in measuring hem lengths.

Tailor's Chalk: A thin piece of hard chalk used in tailoring for making temporary alteration marks on clothing.

Figure 2.1.33: Tailor's Chalk

Figure 2.1.34: Novelty Yarns

Novelty Yarns: Novelty yarns include a wide variety of yarns made with unusual features, structure or fiber composition such as slubs, inclusions, metallic or synthetic fibers, laddering and varying thickness introduced during production.

Masking tape: Also known as sticky tape, is a type of pressure-sensitive tape made of a thin and easy-to-tear paper, and an easily released pressure-sensitive adhesive. It is available in a variety of widths. It is used mainly in painting, to mask off areas that should not be painted.

Figure 2.1.35: Masking Tape

Figure 2.1.36: Hand Needle

Hand Needle: Hand sewing needles are available in varying sizes with varying points. They guide the thread through fabric when you are hand sewing.

Punch Needle: A Punch needle is an easy to use tool that opens up a delightful world of dimensional needle art. It quickly and easily produces one-level or exciting three dimensional designs.

Figure 2.1.37: Punch Needle

Figure 2.1.38: Frame, Round

Frame, round: Used for creating designs through hand stitch.

Pattern making paper: Used for practising cutting and creating patterns.

Figure 2.1.39: Pattern making paper

Figure 2.1.40: Tracing paper

Tracing paper: Tracing paper is paper made to have low opacity used for creating designs.

Adda Embroidery Tracing Pinning Pen Machine for Embroidery: Pinning Machine is used for putting embroidery designs on tracing paper and then using the paper design to be inked on to the cloth. The all new thick design of the metallic pen ensures that you get perfect grip of the pen and which does not slip easily . The machine is widely used by chain-stitch embroidery artists and also by students who use for their art & craft purposes.

Figure 2.1.41: Pinning Machine

Figure 2.1.42: Hand held thread trimmer

Hand held thread trimmer: Used for thread trimming.

Figure 2.1.43: Bent neck, metallic Tweezer

Bent neck, metallic Tweezer: Tweezers are small tools used for picking up objects too small to be easily handled with the human hands

Pencils (HB, 2B, 4B): The graphite grading scales used to measure the hardness of a pencil's graphite core. The higher the number the harder the writing core and the lighter the mark left on the paper.

Figure 2.1.44: Pencils (HB, 2B, 4B)

Figure 2.1.45: Pick glass

Pick glass: Handy Reed Pick glass helps in checking the reed pick of the fabric. It also helps in checking the weaving, dyeing & printing defects in the fabric if any is made.

Needle threader: A needle threader is a device for helping to put thread through the eye of a needle. Many kinds exist, though a common type combines a short length of fine wire bent into a diamond shape, with one corner held by a piece of tinplate or plastic.

Figure 2.1.46: Needle threader

Figure 2.1.47: Nonwoven Non-fusible Backing Paper

Nonwoven Non-fusible Backing Paper: It is made of man-made fibers bonded together to form a paper-like sheet. Stable nonwovens (no stretch) are best for medium- to heavyweight fabrics with a slight to very crisp hand. Nonwovens with a crosswise or all-direction stretch can be used for soft to moderate shaping. Fusibles today are fast, secure and easy to use.

Fabric Glue: It provide temporary or permanent ways to attach fabric without sewing.

Figure 2.1.48: Fabric Glue

Surface ornamentation material (Beads, Sequins): Decorative material used for decoration of clothes.

Figure 2.1.49: Beads

Figure 2.1.50: Sequins

Buttons: are attached to garment by hand stitching or machine stitching

Fig.2.1.51: Buttons

Fig.2.1.52: Hooks

Hooks: are attached to garment with the help of needle and thread

Adda Frame: Raised wooden frame on which fabric that is to be hand embroidered is stretched across.

Fig.2.1.53: Adda Frame

Fig.2.1.54: Embroider frames/hoops

Embroidery frames/Hoops: Embroidery frames are used to hold the fabric in place to facilitate embroidery. Frames hold the fabric tightly and evenly, hence the stitches are more likely to be neat and accurate than if the fabric were held in the hand while working. The size of the hoop to use depends on the size of the project. The hoop should fit around the fabric with some overhang. The fabric should lay taut within the hoop. But it should not be so tight that it causes the fabric to pucker after running the floss through the fabric.

Lace: A fine open fabric of cotton or silk, made by looping, twisting, or knitting thread in patterns and used especially for trimming garments.
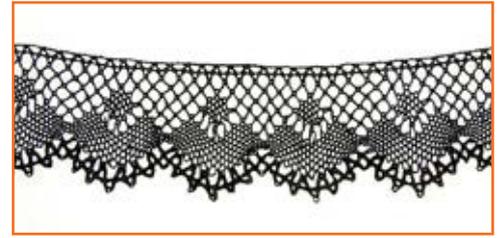
Fig.2.1.55: Lace

Fig.2.1.56: Tracing Powder or Pounce

Tracing Powder or Pounce: Pounce is simply powdered charcoal ordry neel powder

Greyscale: It is used for maching colors in the sewed garment against the specifications.

Fig.2.1.57: Greyscale

Fig.2.1.58: Thimble

Thimble: It is a small hard cup warn for protection on the finger that pushes the needle in sewing.

Adda (wooden frame): It is a horizontal wooden adjustable frame, consisting of four wooden bars. It is raised sufficiently from the ground to make it convenient for the embroiderer to work, without having to bend too far forward while sitting on the ground. The needle is always pushed in such a way that it should be away from the embroiderer and never towards him/her. The fabric on which the embroidery is to be done is first stitched on the two horizontal wooden bars and stretched apart. Then it is fixed tightly and locked onto the other two vertically parallel wooden bars of the adda. This prevents the fabric from moving while working, and also enables clear vision and faster movement of the tools.

Fig.2.1.59: Adda (wooden frame)

UNIT 2.2: Knowledge of Design & Color

Unit Objectives

At the end of this unit, participants will be able to:

1. Familiar with - what is a design.

2. Describe the elements and principles of design.

3. Familiar with color wheel and characteristics of color.

2.2.1 Elements of Design

A design is created with elements – point, line, shape, colour and texture – that are put together using principles – unity, variety, emphasis, balance and scale. The elements of design are the pieces, the components, the building blocks of design. The elements of design include line, shape, colour, value and texture. Put together skilfully, they create effective visual communication. The elements are components or parts which can be isolated and defined in any visual design or work of art. They are the structure of the work, and can carry a wide variety of messages.

Line	An element of art defined by a point moving in space. Line maybe two-or three-dimensional, descriptive, implied, or abstract. It may be Horizontal, vertical, diagonal, straight, curved, dotted, broken, thick, thin	
Shape	An element of art that is two-dimensional, flat, or limited to height and width or 2D(two dimensional)/flat, Geometric (square, circle, oval, triangle), Organic(all other shapes)	
Form	An element of art that is three-dimensional and encloses volume; includes height, width and depth (as in a cube, a sphere, a pyramid, or a cylinder). Form may also be free flowing.	
Colour	An element of art made up of three properties: hue, value, and intensity. Hue refers to the name of a colour Value refers to a hue's lightness and darkness (a colour's value changes when white or black is added) Intensity refers to the quality of brightness and purity (high intensity= colour is strong and bright; low intensity=colour is faint and dull)	

Texture	An element of art that refers to the way things feel, or look as if they might feel if touched or The feel , appearance, thickness, or stickiness of a surface(smooth, rough, silky, furry)	
Space	The area around, within or between images or parts of an image	
Value	The darkness or lightness of a color. White added to a color makes it a tint. Black added to a color makes it a shade.	
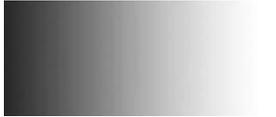
Fig.2.2.1: Elements of Design

Point

Point is the simplest element of design. It is the smallest object that turns a homogeneous space to a heterogeneous one. When it is used in isolation it bestows a potent contrast between negative and positive space. Contrary to this when they are used in consortium it gives a perception of a connected positive space. A point depicts a precise and limited location. For example, circular shape of dot is adopted as an inspiration for designing electric bulbs. It is also used in Indian culture in the form of traditional auspicious symbol known as bindior bindu. It creates a strong contrast with the background, which implies a strong identity and approach. The points used in a regular repetition form a pattern or design which is extensity used in apparel and lifestyle accessories.

Fig.2.2.2: Point in Apparels

Fig.2.2.3: Lines in Home Furnishing

Line

Line is an element of design characterized as a mark with length and direction, created by joining points across a surface. Multiple lines also create contours and shapes. Lines can be seen in almost everything around us including leaves, roots, branches, water waves, fish, birds, animals and man made objects. Line depending on its use may recall, inform, describe and signify subjective forces and arouse deep lying associations. Lines as pictograph or ideograph (lines as writing), signify things, actions, concepts, qualities and conditions across a spectrum of civilizations).

Shape

When a line crosses itself or intersects with other lines forming an enclosed space, a shape is formed. This is an element of design, which is defined by its closed contours. Shape is an area or form with a definite outline and a visible appearance and structure. It is also the way in which something is constituted in a framework. In a composition the filled or solid portion is called positive space while space around the positive space is called negative space. Both positive space & negative spaces are essential to see shapes. Shapes can be divided in three categories based on their structures:

Organic Shapes: Free flowing, informal and irregular shapes are termed as organic shapes. Some examples of organic shapes in nature are flowers, seashells and tree branches. Being basic and simple, organic shapes are extensively used in lifestyle products.

Geometric Shapes: Geometric shapes are rigid, regular and precise in nature. Some examples of geometric shapes are beehive, spider web and water drops.

Fig.2.2.4: Geometric Shapes in Apparels

Fig.2.2.5: Abstract Shapes in Carpets

Abstract Shapes: Whenever an original shape is modified to change its character, the new changed shape is called an abstract shape.

2.2.2 Principles of Design

Pattern	
A regular arrangement of alternated or repeated elements or (shapes, line, colors) or motifs.	
Contrast	
To highlight differences between different elements of design such as values or rough and smooth texture	
Emphasis	
Special attention given to one part of work of art	

Balance To create impression of equality in weight or importance. The elements can be arranged symmetrically or asymmetrically	
Proportion /scale The relationship between objects with respect to size, number etc.	
Harmony The arrangement of elements of design to give the feeling that all parts of the piece form a coherent whole.	
Rhythm/Movement The use of recurring elements to direct the movement of the eye through the artwork. Movement can be directed by means of shape and color	
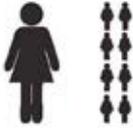
Fig.2.2.6: Principles of Design

2.2.3 Colour Wheel Concept

Characteristric of colour

- **Hue:** Refers to the name of the color e.g. red, orange, blue etc.

- **Value:** Refers to the lightness or darkness of a hue. By adding white to a hue a lighter color can be obtained. It is called tint. By adding black to a hue a darker color can be obtained. It is called shade or tone. Tints and tones are especially useful when embroidering a natural design.

- **Intensity:** Intensity refers to the brightness or dullness of a color. If all the colors used in embroidery are bright or dull a balanced look will not be created. Both dull and bright colors must be used in the correct proportions, for example red and golden yellow flowers can be balanced by tints of green leaves and brown stems. To increase the intensity of a color, place the complementary colors next to each other. This kind of placement produces very bright color schemes, for example, red and parrot green.

Fig.2.2.7: Warm colors and cool colors

- **Monochromatic color:** A Monochromatic color means a single color. It consists of tints and shades of the same color e.g. on a pale blue kurta you may embroider sky-blue, dark blue and navy blue motifs or Lucknow chikankari where white motifs are embroidered on white fabric. This kind of scheme is quite restful, easiest to produce and is always successful.
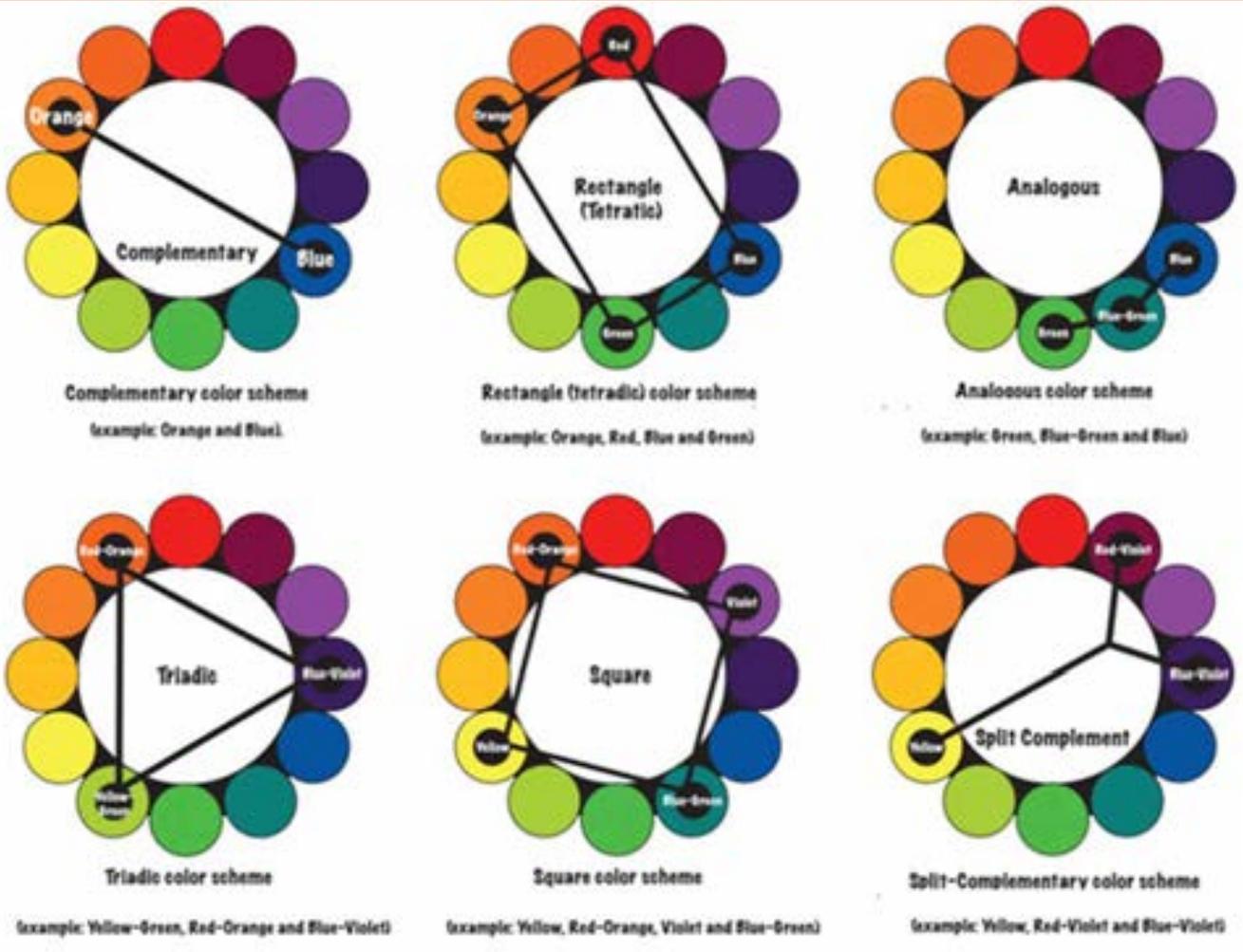
Fig.22.8: Diferent types of color schemes

UNIT 2.3: Preparation for Embroidery

Unit Objectives ⊙

At the end of this unit, participants will be able to:

1. Select fabric as per the embroidery.

2. Analyse design for embroidery.

3. Elaborate methods for transferring design on fabric.

4. Select appropriate needle and thread.

5. Learn how to adjust fabric on frame.

6. Analyse how to work with thread.

2.3.1 Embroidery Fabrics and their Selection

Types of Fabrics

1. **Woven fabric** is a textile formed by weaving. It is produced on a loom, and made of many threads woven on a warp and a weft.Woven fabric only stretches diagonally on the bias directions (between the warp and weft directions), unless the threads used are elastic.Woven fabric cloth usually frays at the edges, unless techniques are used to counter it, such as the use of pinking shears or hemming.

2. **Knitted fabric** is a textile that results from knitting. Its properties are distinct from woven fabric in that it is more flexible and can be more readily constructed into smaller pieces, making it ideal for socks and hats. Its properties are distinct from nonwoven fabric in that it is more durable but takes more resources to create, making it suitable for multiple uses.

Selection of Fabric for Embroidery

Fabrics used for embroidery are available in cotton, blends and linen. They are also available in different thread counts. The selection of a fabric for embroidery is dependent on what you are planning to make as well as the embroidery technique that will be used. Commonly used fabrics in embroidery are detailed below:

1. **Evenweave Fabrics:** The best fabric for surface embroidery is the tightly woven, even-weave fabrics. While loosely woven fabrics are ideal for counted thread, pulled thread and drawn thread techniques. The fiber content for evenweave fabric can be cotton, linen, rayon and polyester blends - or even hemp or bamboo.
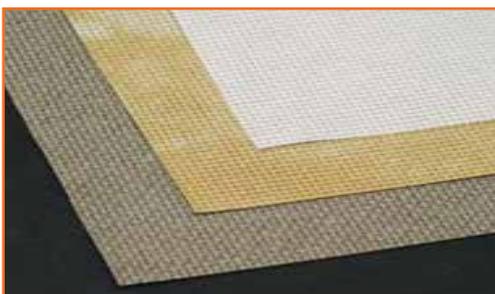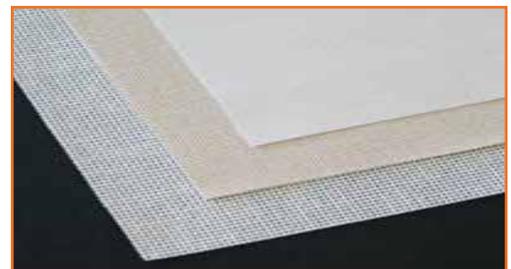
Fig.2.3.1: Evenweave Fabrics

2. **Aida Cloth:** Aida cloth is generally famous with cross stitches. This is because it is easy to count the square and also for counting thread. Surface embroidery and/or Assissi embroidery techniques. This cloth is woven with grouped fibers forming easy-to-follow squares in the fabric.

Fig.2.3.2: Aida cloth

1. **Hardanger Fabric:** Hardanger fabric is a 100% cotton. It is a 22-count evenweave fabric. It is woven with a double thread. Each double-thread group is counted as one. Hardanger can be used for hardanger embroidery technique, blackwork, cutwork, and counted thread techniques.
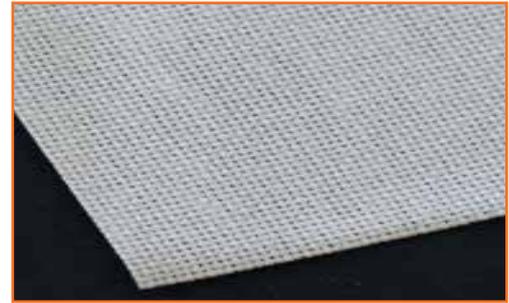
Fig.2.3.3: Hardanger Fabric
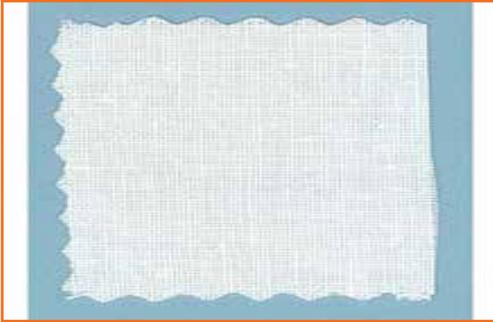
2. **Linen Fabric:** Linen fabric is a single thread fabric woven from flax. It is the most durable fabric. It is mostly used in cross stitches, pulled work.

Fig.2.3.4: Lenin Fabric

Selecting Fabric for Embroidery Work

Fabric	Counts	Use
Aida	11-22	Cross stitch, Blackwork
Hardanger	22	Cross stitch, Blackwork, Hardanger
Linen	25-36	Cross stitch, Blackwork, Hardanger, Pulled work, Bargello, Petit Point
Evenweaves	18-32	Cross stitch, Blackwork, Hardanger, Pulled Work, Bargello, Petit Point

Fig.2.3.5: Fabric

If presoaking is required please presoak the fabric before embroidery. This will ensure the fabric will not shrink afterward. Iron out creases before embroidery to make it easier to do the embroidery and later on stitching evenly. You should leave ample room around the design before emboidery the fabric to allow finishing to be done. Finish the edges of fabric to prevent them from unravelling.

2.3.2 Analyzing Design for Embroidery

Once the supervisor gives the design that is to be embroidered, it has to be analysed and interpreted in order to ensure that the design is perfectly replicated on the fabric. The process of analysing design is illustrated here.

Analysing the design is an important role of Hand Embroiderer, as only after careful analysis a fault free design can be embroidered on the desired fabric.

Fig.2.3.6: Analyzing Design

2.3.3 Tracing Design on Fabric/Material

There are several different ways of marking/tracing an embroidery design on fabric. The techniques often depend on the weight or type or colour of fabric being used. Detailed below are few commonly used tracing methods:

Tracing with Heat

Heat transfer pencils or pens are used for marking an embroidery design on fabric, and works on light weight as well as heavier fabrics. The ink of transfer pencil or pen is heat activated. These pencils are permanent therefore the traced lines should be covered completely with embroidery so they are not visible.

STEPs of using Heat Transfer Pencil:

STEP 1: Trace the design in reverse on a lightweight sheet of paper. To do this one has to print the pattern then turn it over and finally trace the design on the rear side of the paper with the help of heat transfer pencil.

STEP 2: Ensure that a very sharp pencil is used while tracing. The pattern lines transferred to the fabric should be as thin as possible so that they are not visible out from under your beautiful embroidery.

STEP 3: For transferring the design on fabric, first place the paper against the fabric and then press using a hot iron and finally move to the next location.

Fig.2.3.7: Heat pencil

Tip: Ensure that you do not iron by moving the iron back-and-forth along the paper, as this distorts the image.

Tracing with Light

If fabric is fairly thin, the transfer/tracing of the designs can be done directly on the fabric with help of a light source like a window or light box. The outline is then marked using marking pencil.

STEPs of Using Light to Trace Design:

STEP 1: Identify a light source such as a window or light box.

STEP 2: Tape the pattern to the glass, then cover the pattern with the fabric. The design should be visible through the fabric.

STEP 3: Trace the lines with your marking pencil or pen.

Tracing with Tracing Paper

Designs can be traced/transferred to thicker fabrics using transfer paper(carbon- or wax-based). This paper is also known as dressmakers' carbon paper. The lightweight tracing paper is coated with a powdery, colored ink on one side.

Fig.2.3.8: Tracing with light

STEPs of using Tracing Paper:

STEP 1: Lay the fabric face-up on a hard surface.

STEP 2: Centre the transfer paper over the fabric with waxy ink towards the fabric, and then keep the pattern over the transfer paper.

STEP 3: Transfer the design to the fabric using a stylus or empty ball-point marking pen. Ensure that the stylus is pressed hard to transfer the design to the fabric.

Fig.2.3.9: Tracing Paper

Tracing with Pouncing

Pouncing is one of the earliest methods of tracing designs on the fabric, and is rarely used these days. In this method, a paper pattern is pierced with a pin. The pattern is then attached to the fabric and tracing powder is used on the holes using a soft fabric pad.

Fig.2.3.10: Tracing using Pouncing

Back Tracing

• Take a design and drawn it on tracing paper.

• Use bold pencil (2B, 4B) on the back side of the design and go all over the lines of the design.

• The lines should be bold so that when you touch the backside of design carbon should come on the finger.

• Tape the tracing on the fabric so that back side of the design marked by pencil faces the fabric.

• Trace all lines using back side of the pencil.

• For geometrical or symmetrical design a quarter of it may be drawn on the tracing paper and then the sheet can be folded into half horizontally and vertically and the design can be completed by tracing. This is the simplest method and does not require any costly equipment.

Using Butter Paper

This is also called the perforated pattern. This can be a good permanent pattern, provided it is keep carefully.

• Trace the design on a sheet of butter paper. It is easily available in the market.

• With the help of a needle or sharp pin, make small holes along the design lines. You can also run an empty sewing machine over these lines. Keep the holes close together.

• Mark the placements on the fabric and secure the tracing on it with common pins.

• Mix a small amount of powered blue (neel) in kerosene oil. The mixture should be like a paste.

• Dip a ball of cotton in the mixture and rub it over the perforations or holes.

• Remove the paper carefully and blow off any excess powder over the fabric.

Using a Template

A template is a shape which is cut out of card paper. A template can be used when you need to place a simple design many times over a fabric.

• Take a sheet of card paper.

• Draw the shape carefully on it.

• Cut out the pattern with a sharp blade. Your template is ready to be used.

- Place the template at the correct position on the fabric. Tape it securely.

- Draw the outline with a pencil. Now remove the tape and then the template.

Using Carbon Paper

Red, green, yellow, blue and white carbon papers are available in the market. Follow the steps to transfer designs.

- Place the fabric on a smooth, hard surface and anchor it with a tape

- Carefully place a carbon paper, carbon side down, between the fabric and the design, secure it with a tape.

- Place the design in the correct position and tape it in place.

- Trace the design with a dry ball-point pen. Use enough pressure to transfer clearly.

- Use white or yellow carbon on dark colored fabric and blue carbon on light colored or white fabric.

2.3.4 Selecting Appropriate Needle and Thread

While selecting the appropriate thread and needle for the task at hand, following point should be kept in mind:

Selecting Needles and Threads

- The needle must be able to pull the thread through the fabric easily, without allowing too much scratch on the thread. The shaft of the needle should be as thick as the embroidery thread. The only situations where this really works are in counted techniques, needlepoint, stitching on open weaves, and any other time there's already enough space between the fabric threads for the needle to pass through easily. For surface embroidery, one has to consider not only the thickness of the thread, but also the thickness of the thread at the eye where the thread is folded, and the texture of the fabric. A tighter, close weave requires a needle that can make the right-sized hole for the thread and the needle to pass through it.

- There should be no real fight in the fabric when pulling the eye of the needle. If there's resistance – if the fabric is pulling and denting, and you really have to fight to get the needle through – that's a sign you should be using a larger needle.

- The hole the needle makes should be large enough for the thread to pass through, but not any larger. The needle should not leave a visible hole around the thread.

Selecting Thread

- Choosing the right thread hinge on on the type of design that is to be embroidered, the needle selected for the job and the type stitches that are required

- Cotton threads are primarily used for freestyle embroidery, canvas work and other forms of embroidery

- Pearl Cotton is mostly used for hard anger, cross stitch or freestyle embroidery

- Wool is used for canvas work to cover the canvas consistently and crewel wool can be used a surface thread for crewel work and Jacobean embroider

- Silk and other special threads like metallic and wire threads are used for techniques like gold-work.

2.3.5 Checking Materials for Defects

It is important to go through and inspect every material required for embroidery. Any material or accessory be it fabric, thread or needle, should be checked to ensure that the material about to be used is fault-free. Any faulty material found, should be reported to the responsible authority immediately, it should be sent for replacement. While using the material the commonly seen faults are in: faulty needle, unusual thread, wrong design pattern however fabric defect over shadows all as it the most important of all in first place hence should be checked very clearly and thoroughly before making it in use.

A simple check-list may be followed to ensure minimum defects in the material being used for embroidery:

Parameter Check
Buyer Approved Sample or Artwork Wise Bulk Sample Print & Embroidery Design Check.
Durability of Needle
Size Wise Approved Pattern Placement Check.
As per Sample Wise Print Design, Colour & Quality Check.
Bundle & Size Wise Print/Embroidery Check.
Fabric Top Side in Side Check.
Print / Embroidery Pattern Placement Check.
As Per Sample Wise Print/Embroidery Design, Thread Colour Quality Check.
Thread strength and texture Check
Durability of accessories like frame/hoop Check
Size of accessory (frame, hoop) as per design

Fig.2.3.11: Quality parameters

2.3.6 Attaching Fabric to Frame /Hoop

Procedure to attach fabric to frame is given below:

1. Place your fabric over the smaller hoop, then push the larger, or top, hoop down around the bottom one. This sandwiches the fabric and holds it taut.

2. Tighten the nut while pulling the fabric to straighten it.

3. Adjust the fabric and nut as you embroider to maintain the tightness of the fabric.

Fig.2.3.12: Metallic screw opening that can be tightened or loosened by turning the screw

Fig.2.3.13: Final fabric attached

2.3.7 Working with Thread

1. Cut a length of thread about 18 inches long. (Breaking the thread leaves fuzzy ends and may damage the thread. Broken threads do not go through the needle eye easily.)

2. Cut the thread on a slant for easier threading.

3. Grasp the needle between your thumb and forefinger.

4. Hold the thread in the other hand and guide to the needle hole.

5. Push the thread through the hole.
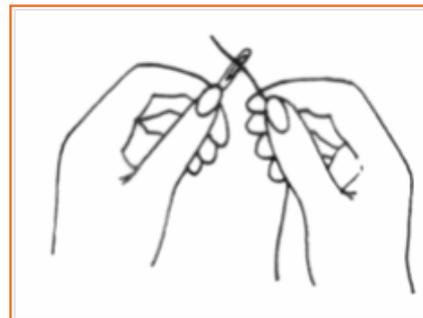
Fig.2.3.14: Threading needle

Correct way   Wrong way

Push the thread through the hole
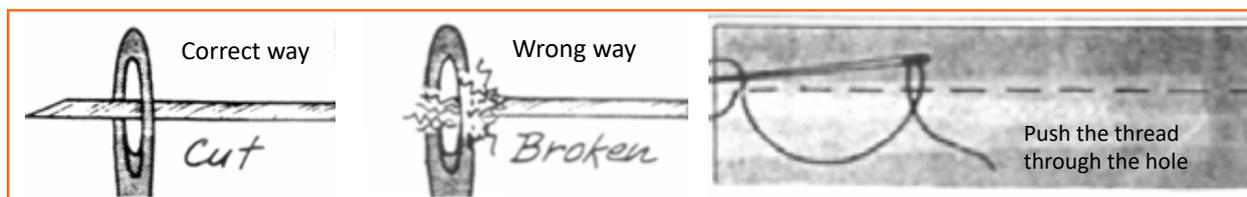
Fig.2.3.15: Tying a Knot

Securing Thread

Thread "ends" and "beginnings" should always be firmly secured and inconspicuous. This can be achieved in a number of ways. As you begin a hand stitch, the thread "beginning" should be secured by one of these three methods:

1. Tying a knot

2. Taking a couple of very small stitches in the same location

Taking a stitch and locking it by looping the thread around the needle and pulling it secure.

Tie a Knot

When a knot is tied to begin a line of stitching, it should be very small, secure, and neat. To do this:

1. Moisten forefinger and grasp the thread near the end.

2. Wrap one end of the thread around the forefinger.

3. Allow about ¼-inch lap-over of thread.

4. With the thumb and forefinger, "roll" these threads together and off the finger.

5. With loop between thumb and forefinger, pull knot to the end of the thread to tighten.
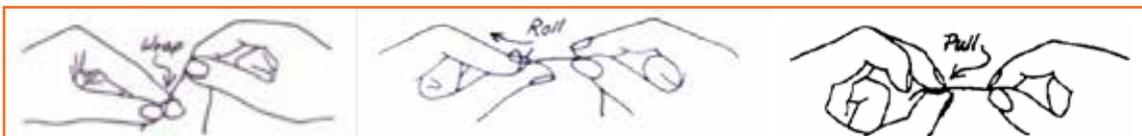
Fig.2.3.16: Tying a Knot

Fasten Ends of Hand Stitching

To end the stitching, threads are usually secured by:

1. Taking a couple of very small stitches in the same location

2. Taking a stitch and locking it by looping the thread around the needle. This technique is done by taking a very small stitch and inserting your needle through the loop. Pull securely.

Sliding the needle between the layers of fabric (or behind a seam allowance) approximately ½-inch to hide the thread ends. Bring the needle out to the surface of the fabric and snip thread close to the surface.

Resources

Scan the QR codes or click on the link to watch the related videos.

Descriptions	QR Codes
Basic Hand Embroidery Materials and Tools	https://youtu.be/qK6HNiBecQI
Basic Elements of Design	https://youtu.be/MshxnTQW4qU
Principles of Design	https://youtu.be/9EPTM91TBDU
Transfer The Embroidery Pattern Onto Fabric	https://youtu.be/pxqdHBQfAw0

Exercise ✏️

1. ————————— is most commonly used for tracing Embroidery Design

    a) Tailor Chalk

    b) Tracing Wheel

    c) Carbon Paper

    d) All the above

2. Which type of needle is used for cross stitch

    a) Crewel

    b) Tapestry

    c) Chenille

    d) Milliner

3. Which of these is a characteristic of a "Needle"?

    a) Size

    b) Point

    c) Point

    d) All of the above

4. Ball point needle is used for_____

    a) Lace work

    b) Beading work

    c) Flat stitch

    d) None on them

5. Which of these is an element of design?

    a) Line

    b) Shape

    c) Form

    d) All of the above

6. Which of these is an embroidery thread?

    a) Floss

    b) Pearl Cotton

    c) Silk

    d) All of the above

7. Which of the tool is used for back tracing?

    a) Pen

    b) HB Pencil

    c)   Pouching

    d)   Heat

8.   _____ materials used to ornament or enhance garments

    a)   Rivets

    b)   Motifs

    c)   Laces

    d)   All the above

9.   _____thread is most commonly used for chain Embroidery

    a)   Linen

    b)   Silk

    c)   Wool

    d)   Jute

10. How work flow can be maintained?

    a)   One production's workflow should not affect the workflow of other production

    b)   All the production sections should work in synchronization

    c)   Both a and b

    d)   None of the above

3. Carryout the Process of Hand Embroidery (Addawala)

Unit 3.1 – Carrying out Different types of Stitches – Flat Stitches

Unit 3.2 – Carrying out Different types of Stitches – Loop Stitches

Unit 3.3 - Carrying out Different types of Stitches – Knotted Stitches

Unit 3.4 – Introduction to Adda work

Unit 3.5 – Waste Minimization

AMH/N1010

Key Learning Outcomes

At the end of this module, participants will be able to:

1. Know techniques and carry out and application of basic stitches.

2. Carry out various flat stitches like back stitch, stem stitch, Kashmiri stitch etc.

3. Carry out various loop stitches like chain stitch, button hole stitch, fishbone stitch etc.

4. Carry out various knotted stitches like French knot, double knot, bullion knot stitch etc.

5. Describe the adda work.

6. Explain the history for Aari Work.

7. Analyse the raw materials and tools used for adda work.

8. Demonstrate the setting of adda.

9. Elaborate the basic stitches in Aari/adda work.

10. Understand waste management.

UNIT 3.1: Carrying out Different Types of Stitches - Flat Stitches

Unit Objectives

At the end of this unit, participants will be able to:

1. Recognise flat stitches.

2. Carry out different flat stitches like Running stitch, stem stitch, Kashmiri Stitch, cross stitch etc.

3.1.1 Flat Stitches

Flat stitches are simple embroidery stitches in which individual stitches are made without crossing or looping the thread. These stitches are used to form broken or unbroken lines or starbursts, fill shapes and create geometric designs.

Commonly used types of Flat Stitches and their techniques are given below:

*   Running Stitch

*   Back Stitch

*   Stem Stitch

*   Satin Stitch

*   Kashmiri Stitch

*   Couching Stitch

*   Cross Stitch

*   Herringbone Stitch

3.1.2 STEPs of Carrying out Running Stitch

This stitch can be worked in straight or curved lines, or for assembly when finishing an embroidery project. The stitch is worked by taking the needle in and out of the fabric. These stitches are of varying length, but more thread is visible on the top than below.

*   **STEP 1:** Work from right to left of the fabric and insert your needle through the back side of the fabric at your starting point

*   **STEP 2:** Bring thread up at 1 then down at 2, up at 3 and down at 4 and continue

*   **STEP 3:** The spaces between the stitches can be the same length as the stitches or shorter for a different look.

Fig.3.1.1: STEPs of Running Stitch

3.1.3 STEPs of Carrying out Back Stitch

The back stitch is a basic embroidery and sewing stitch used to produce a thin line of stitching, to outline shapes that will be filled with satin stitch, or to stitch fabric pieces together.
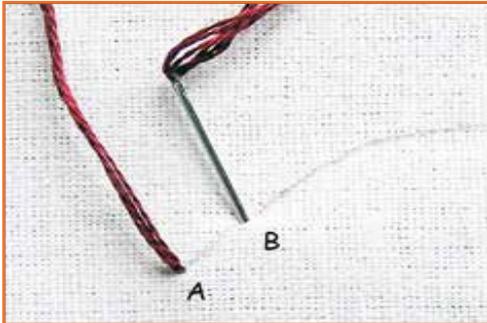
STEP 1: Bring the thread through A and take it in through B. This creates one stitch
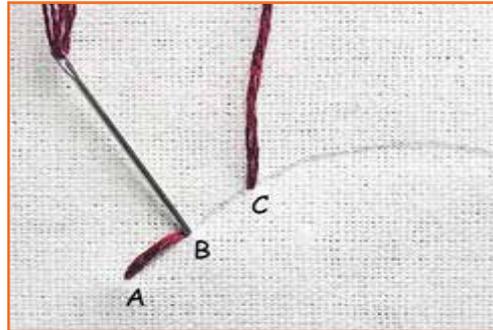
STEP 2: Bring the thread through C and take it in through B. This way, we are creating a stich by taking the thread backward
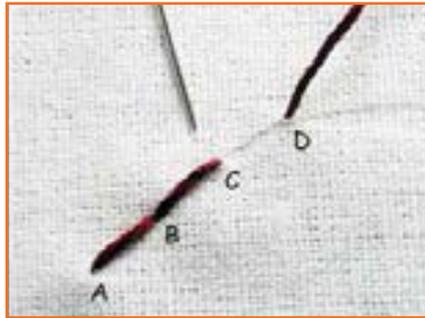
STEP 3: Bring the thread through D and take it in through C. Continue this pattern to finish the design

3.1.4 STEPs of Carrying out Stem Stitch

Stem stitch, and its variations, are worked as a thin line and can be used to outline embroidered shapes, stitch lines and curves, embroider letters. This stitch creates a rope like appearance
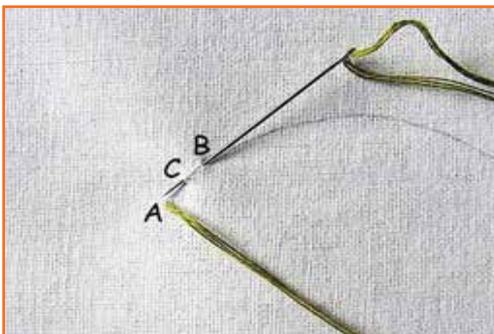
STEP 1: Bring out the thread through A and take it in through B. Take the needle backwards and bring the thread out through C. Make sure the point C lies over the stitch A-B
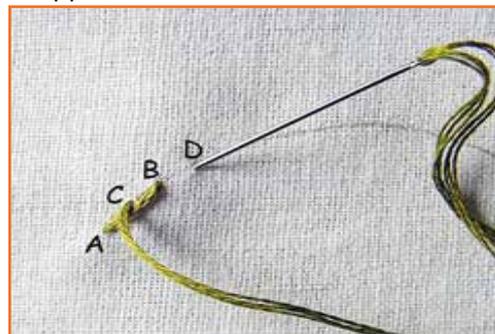
STEP 2: Note that the point C lies about half way through A and B. Also note that C lies on top of the stitch A-B. So, all the subsequent stitch points will lie on top their previous stitch.
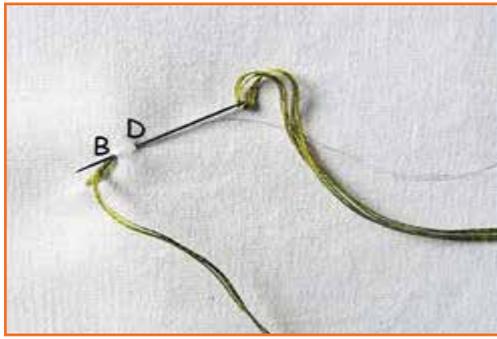
STEP 3: Take the needle in through D. Try to mark D in such a way that the point B will lie half way through C-D. Bring the needle out through B

STEP 4: The pattern of two stitches of the stem stitch will be as shown in figure

STEP 5: Continue this pattern of stitching with the needle coming out through the top of the previous stitch always

3.1.5 STEPs of Carrying out Satin Stitch

This stitch is primarily used for Solid filling for shapes and monogram. Often, a satin stitch is outlined using one of the straight stitches like, the split stitch, the outline stitch, back stitch, chain stitch, or any other similar stitches. This helps in containing the satin stitch within the parameters of the pattern/design easily.
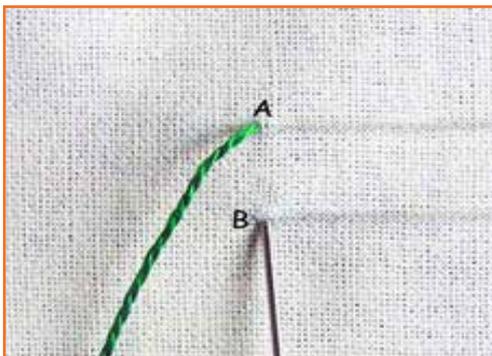
STEP 1: Bring the needle out through A and put it in through B. So, that makes a stitch which covers a small area between the stitch lines
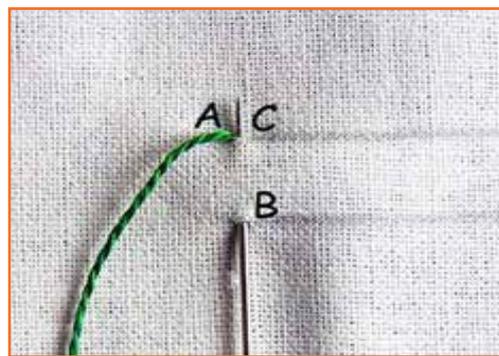
STEP 2: Bring the needle back through C, a point very close to A. Continue this action over the two stitch lines

STEP 3: Once finished, the area is filled as in figure. Almost same amount of thread will be spent on the reverse side as on the actual side of the fabric

3.1.6 STEPs of Carrying out Couching Stitch

This stitch is usually used to make outlines, or layers of this stitch can be made to fill in patterns. This stitch involves two threads: a thicker foundation thread, (also called the laid thread) and a thinner thread (called the couching thread).

STEP 1: Start by bringing out a thread (brown in the figure) for laying from one end of the stitch line. Keep it open. Now, bring another thread (red in the figure) out, a little outside the stitch line, and away from the other thread.

STEP 2: Keep the laid thread over the stitch line. Use the other thread to fasten the laid thread down using a small stitch.

STEP 3: After fastening, the stitch will look like as in the figure.

STEP 4: Bring the fastening thread out as a short distance from the earlier stitch. Lay the open thread over the stitch line, and again fasten it down with a small stitch.

STEP 5: Continue with this method for the entire stitch line. To finish up, pass the laid thread through the fabric and knot it. Make sure the fastening thread is brought out at regular intervals to make it look elegant.

STEP 6: A finished couched line will look like this.

3.1.7 STEPs of Carrying out Cross Stitch

This stitch is used for borders and filling if worked in adjacent rows.
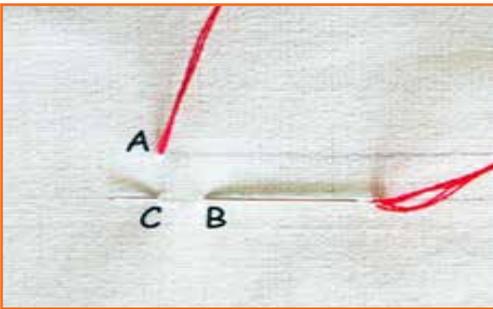
STEP 1: Bring the needle out through A and take it diagonally across to B. Bring it back again through C, which lies vertically below A
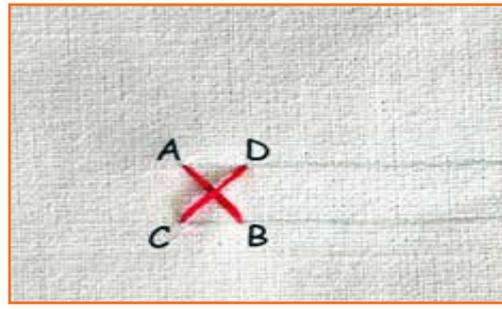
STEP 2: Now put the needle in through D, which lies vertically above B. You have made a single cross
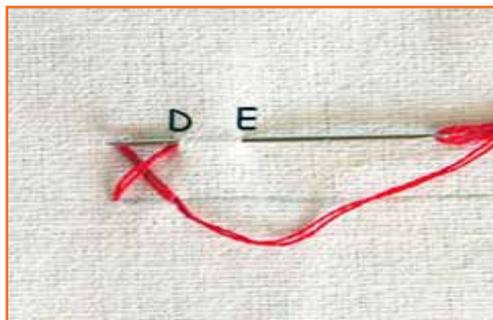
STEP 3: Continue by putting the needle in through E and bring it out through the previous point D
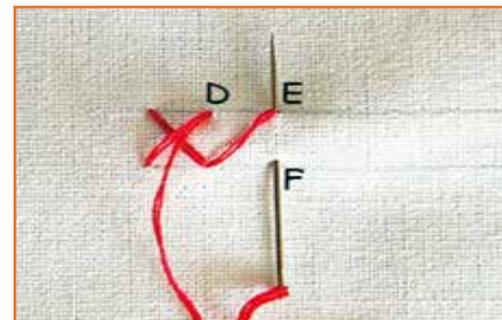
STEP 4: Put the needle in through F to complete the second cross. Now, bring the needle out through the previous point E to begin for the third cross. Continue this process
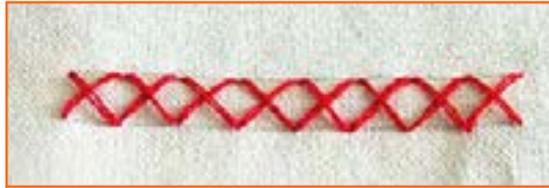
STEP 5: A row of cross stitch would appear like this.
The same technique is followed for a vertical row

3.1.8 STEPs of Carrying out Herringbone Stitch

This type of stitch is used to create border, edging, can be stitched over a ribbon or braid to hold it down. It is ked along parallel lines on an evenweave fabric
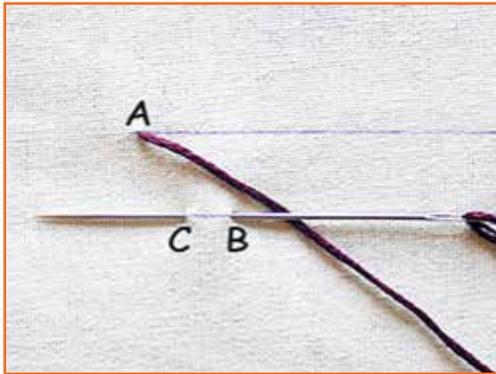
STEP 1: Bring the needle out through the first stitch line at A. Now, take the needle in throughB, which lies diagonally across A on the second stitch line. Then, take the needle backwards out through C, which lies near B.
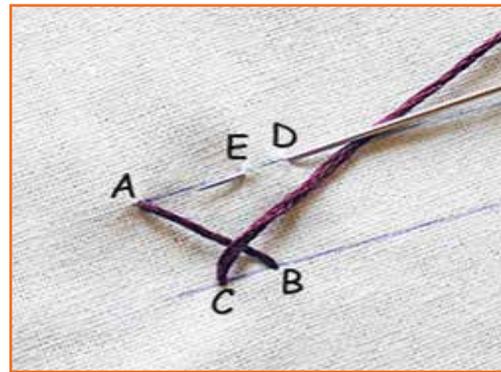
STEP 2: Now, the same procedure will be worked on first stitch line. Take the needle diagonally across to D and bring the needle backwards out through E
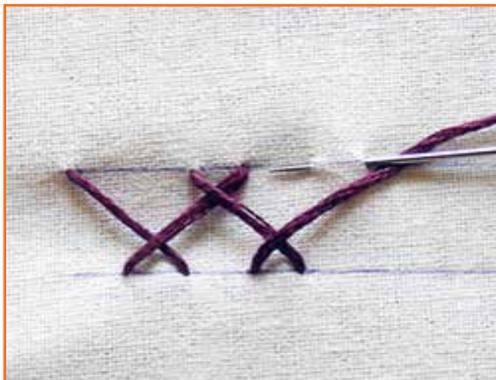
STEP 3: Continue to make such crosses on both stitch lines alternately. Make sure the diagonal stitches are parallel to each other to bring out the best look
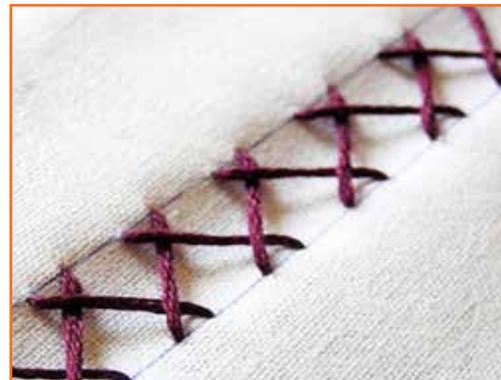
STEP 4: A finished sequence of herringbone stitch would look like this

Industry Visit

The purpose of visiting an apparel manufacturing unit is to get hands on knowledge about various processes involved in the work of a Hand Embroiderer. During the visit you have to interact with Hand Embroiderer and supervisors to understand how work is done in industry. Make sure that you keep a notebook handy and note down any important points that come up during your interaction at the apparel manufacturing unit. When you go to an apparel manufacturing unit, you should:

• Analyze how a Hand Embroiderer does flat stitches.

• Understand the different types of flat stitches such as; running stitch, back stitch, stem stitch, satin stitch, kashmiri stitch, couching stitch, cross stitch, herringbone stitch and which type of stitch suits to different fabrics.

• Ask questions to Hand Embroiderers/supervisors if you have any query.

UNIT 3.2: Carrying out Different Types of Stitches - Loop Stitches

Unit Objectives 🎯

At the end of this unit, participants will be able to:

1. Recognise Loop Stitches.

2. Carry out different loop stitches like chain stitch, button-hole stitch, blanket Stitch, fish bone stitch etc.

3.2.1 Loop Stitches

Loop stitch gets its name from the long loops it leaves behind

Commonly used types of Loop Stitches and their techniques are given below:

• Chain stitch

• Button-hole stitch

• Blanket Stitch

• Fish bone stitch

• Feather stitch

• Fly Stitch

3.2.2 STEPs of Carrying out Chain Stitch

The chain stitch is a circled stitch which can be worked along a straight or curved line. Variations of this stitch are the single or detached chain, lazy daisy, feathered chain, square chain, cable chain, heavy chain, zigzag Chain etc. This stitch is usually used for outlining, straight and curved lines, filling if rows are stitched closely together.
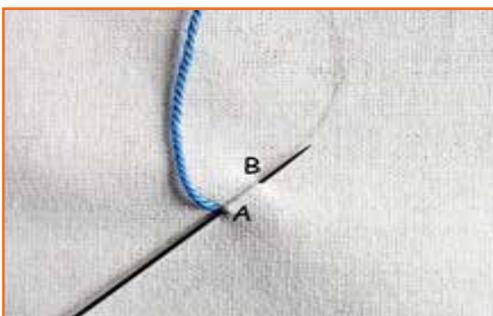
STEP 1: Bring the thread out through A. Put the needle back in A and bring it out through the point B, but don't pull the needle out completely.
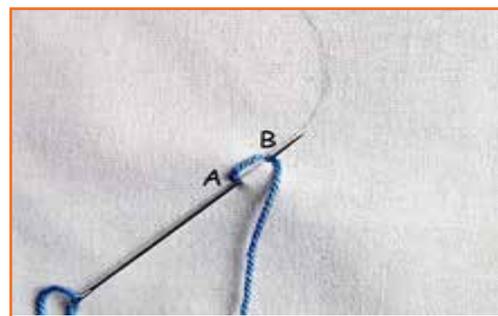
STEP 2: Take the thread around the needle from left to right to form a loop
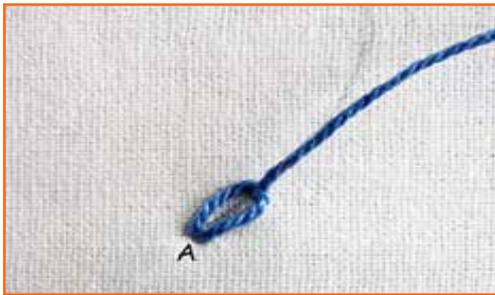
STEP 3: Pull out the needle now to tighten the loop and you will get the first part of the chain.
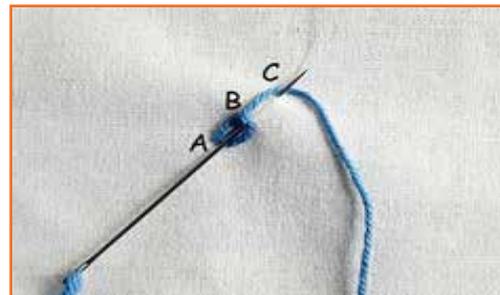
STEP 4: Put the needle in through B (now inside the loop) and bring it out on C (outside of the loop).

STEP 5: Continue the action by taking the thread around the back of the needle from left to right to form a loop and pull out the needle to get the next loop of the chain. Keep on with this procedure to finish the design.

3.2.3 STEPs of Carrying out Button Hole Stitch

This stitch is used to secure the edges of buttonholes as it gives a much sturdier stitch due to the knots it makes.
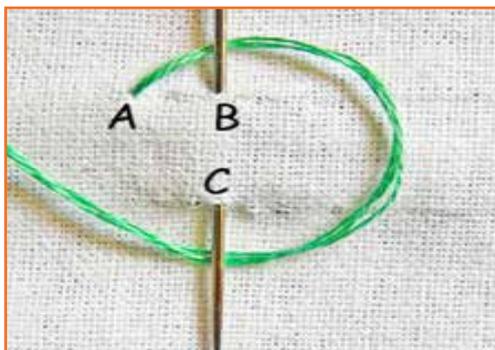
STEP 1: Bring the needle out through A. Now, loop the thread around from left to right. Take the needle in through B and bring it out from C. Keep the thread below the needle always
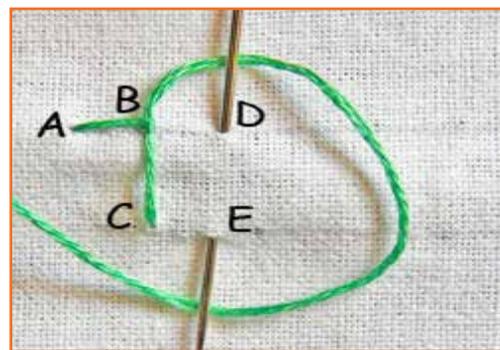
STEP 2: Pull out the needle towards the top. This creates a small knot near the point B. Do not pull the needle downwards as it will not give the desired results

STEP 3: A finished portion of the buttonhole stitch would look like as in figure

3.2.4 STEPs of Carrying out Blanket Hole Stitch

This stitch is called blanket stitch as traditionally it is used to stitch the edges of blankets. It is used to create straight and gently curved lines, borders and finishing edges
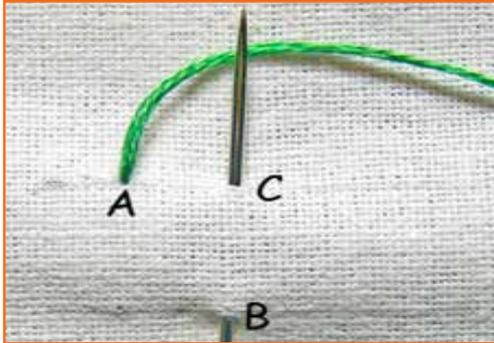
STEP 1: Bring the needle out through A. Take the needle in through B. Take it out through C, a point in the same stitch line as A. Loop the thread under the needle
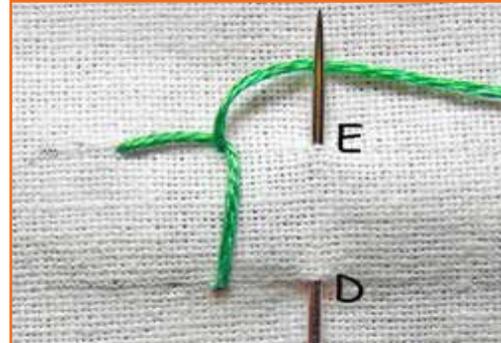
STEP 2: Pull out the needle. Continue with this process till the end of the line

STEP 3: A portion of the finished blanket stitch would look like as in the figure

3.2.5 STEPs of Carrying out Fishbone Stitch

This stitch is a type of filling stitch and is used for making leaves and feathers

STEP 1: To begin with, bring the needle out through point A, which is the top tip of line Y. Put it in through B, to make a single straight stitch.

STEP 2: Now, bring the needle out from a point very close to A on the line X. Put it in through a point very close to B on line Y. Again pull out the needle through a point very close to A on line Z.

STEP 3: This procedure of putting in the needle through X and Z alternatively will follow. Each time you will be connecting X-Y and Y-Z.

STEP 4: Make sure all the stitch points lie close to each other to avoid any visible spaces.

STEP 5 - Half way through, the leaf design would look like as in the image.

3.2.6 STEPs of Carrying out Feather Stitch

Feather stitch is a decorative stitch, usually, used to accompany it with embellishments or other forms of stitches like the French knot. It can be used to make borders, horizontal or vertical fillings, or designs with curves. It looks like a series of interconnected 'V's.

STEP 1: Bring the needle from B. Now, put the needle in through D and bring it out from C. Note that the points on B and D falls on a straight line, and C lies diagonally to both B and D. Pull the needle out with the thread under it, as shown. We would form our first 'V'

STEP 2: Continue to put the needle in through A and bring it out through B. Pull the needle out with the thread under it as shown, to make the next 'V'

STEP 3: Continue the procedure by putting the needle in through the outer stitch line and brining it out from the inner stitch line. Keep alternating between left and right side to make the 'V's- putting in the needle through A and bringing it out from B; putting the needle in through D and bringing it out from C.

STEP 4: Once a small portion of feather stitch is done, the stitch will look like as in the figure

3.2.7 STEPs of Carrying out Fly Stitch

This stitch is done in rows for edging or singly for accents, plants and foliage, decorative lines, interesting filling
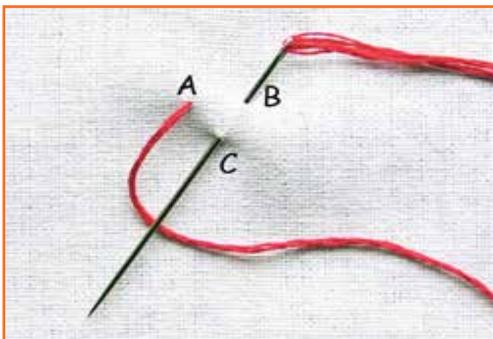
STEP 1: Bring the needle out from A and put it in through B. Then, bring it out through C, which lies between and below A and B. Pull the needle out from over the working thread, as shown in the picture. this creates a 'V' shape.

STEP 2: To create the 'Y' shape, we need to make a tail. Put in the needle a little space right below C.

STEP 3: The stand alone fly stitch would look like as in the image

Industry Visit

The purpose of visiting an apparel manufacturing unit is to get hands on knowledge about various processes involved in the work of a Hand Embroiderer. During the visit you have to interact with Hand Embroiderer and supervisors to understand how work is done in industry. Make sure that you keep a notebook handy and note down any important points that come up during your interaction at the apparel manufacturing unit. When you go to an apparel manufacturing unit, you should:

- Analyze how a Hand Embroiderer does loop stitches.

- Understand the different types of flat stitches such as; chain stitch, button-hole stitch, blanket stitch, fishbone stitch, feather stitch, fly stitch and which type of stitch suits to different fabrics.

- Ask questions to Hand Embroiderers/supervisors if you have any query.

UNIT 3.3: Carrying out Different Types of Stitches - Knotted Stitches

Unit Objectives

At the end of this unit, participants will be able to:

1. Recognise Knotted Stitches

2. Carry out different knotted stitches like French Knot, Double Knot, Bullion knot etc.

3.3.1 Knotted Stitches

A knotted stitch is any embroidery technique in which the yarn or thread is knotted around itself.

Knotted edgings are used as a decorative trims, and can also be used to fill open spaces in cutwork and in needle-lace

Commonly used types of Loop Stitches and their techniques are given below:

• French Knot

• Double Knot

• Bullion Knot

3.3.2 STEPs of Carrying out French Knot

A bullion knot is very similar to the French Knot, but here the loop is eased around the needle more times, producing a worm of a knot that is implanted a slight distance from the needle's original entry point. Bullion knot is used to produce decorative dots, leaves, plants etc.

STEP 1: Bring the needle out through A.

STEP 2: Place the needle close to the fabric. Wrap the thread around it twice.

STEP 3: Keep the longer end of the thread pulled with your fingers while putting the needle back in a point just close to A or even through A.

STEP 4: Pull down the needle through the fabric. You will see your first French knot formed.

3.3.3 STEPs of Carrying out Double Knot

It is also known as Palestrina knot stitch. This stitch is usually used for outlining or bordering purposes.
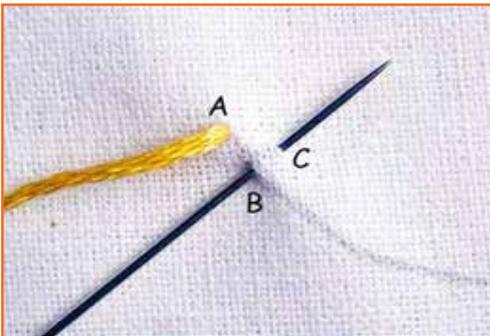
STEP 1: Bring the needle out through the point A, which lies on the stitch line. Then, take the needle in through B, which lies on the stitch line too. Bring out the needle through C, a point straight above and not too far from B.
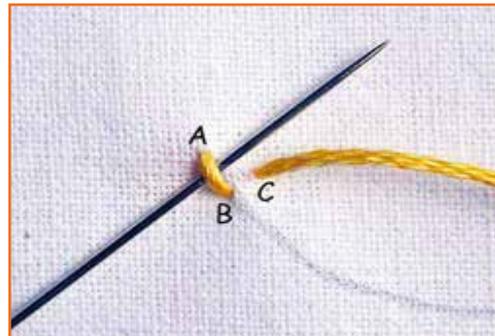
STEP 2: Take the needle below the stitch A-B, without plucking the fabric underneath. The needle will be angled above or towards the left of the point C.
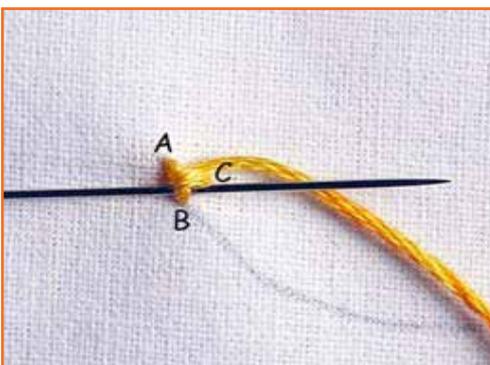
STEP 3: Take the needle under the stitch A-B. Only, this time, the needle is angled below or towards the right side of the point C. Then, loop the thread around the needle
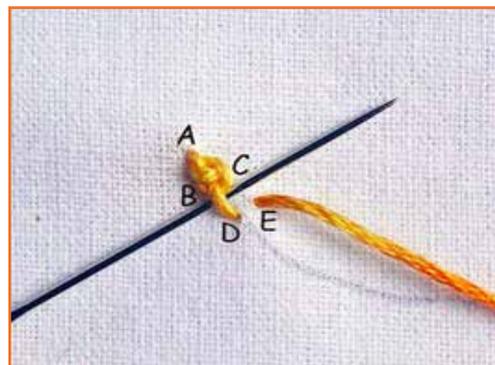
STEP 4: When we pull out the needle, the first double knot is formed. For the nest knot by putting in the needle through D on the stitch line and bringing it out from E, just above the point D. Continue with the procedure as we did for the first knot.

STEP 5: The finished portion of double knot would look like as in figure.

3.3.4 STEPs of Carrying out Bullion Knot

This knot is very similar to the French Knot, but here the loop is threaded around the needle more times, producing a worm of a knot that is inserted a slight distance from the needle's original entry point. Bullion knot is used to create decorative dots, leaves, plants etc.
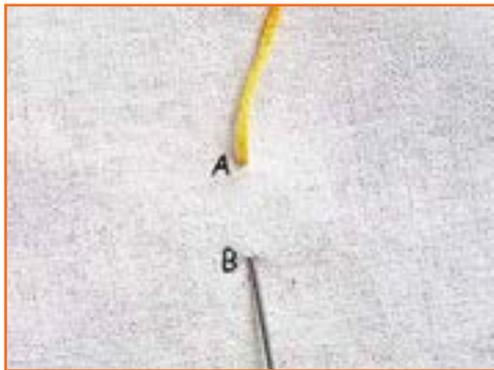
STEP 1: Bring the needle out through A and put the needle through B at a desired length.

STEP 3: Hold the wrapped thread with your fingers and pull the needle out with the other finger. Keep pulling the needle completely in an upward direction till the wraps lay on the fabric. Adjust and straighten the wraps if required and put in the needle back through B.

STEP 2: Bring the needle out through A again. Then, wind the thread around the needle as shown. The distance of wound thread should measure the same as the distance between A and B. Too many or too less wraps will spoil the stitch.

STEP 4: The finished bullion stitch would look like as in the figure

Industry Visit

The purpose of visiting an apparel manufacturing unit is to get hands on knowledge about various processes involved in the work of a Hand Embroiderer. During the visit you have to interact with Hand Embroiderer and supervisors to understand how work is done in industry. Make sure that you keep a notebook handy and note down any important points that come up during your interaction at the apparel manufacturing unit. When you go to an apparel manufacturing unit, you should:

• Analyze how a Hand Embroiderer does knotted stitches.

• Understand the different types of flat stitches such as; french knot, double knot, bullion knot and which type of stitch suits to different fabrics.

• Ask questions to Hand Embroiderers/supervisors if you have any query.

UNIT 3.4: Introduction to Adda Work

Unit Objectives 🎯

At the end of this unit, participants will be able to:

1. Explain the Adda work
2. Discuss about the raw materials and tools used for adda work.
3. Demonstrate how to attach fabric to adda.
4. Perform the basic stitches in Aari/adda work.

3.4.1 What is Adda 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 mainly for doing Aari work. Aari is a type of needle with a hook at its tip to do the embroidery while working on adda. Because of its name Aari, the embroidery done by it is called Aari work. Adda and Aari help in working speedily, and with precision and neatness. Before starting this embroidery, one has to do some basic preparations, like preparation of the adda (frame) and attaching the fabric which is to be embroidered on it. Then, the design selected is transferred onto the fabric, using proper tracing methods. Mostly, the prick and pounce method is used to transfer the designs onto the fabric in Aari work.

3.4.2 Main tools for Adda Work

Good work requires good tools and this is very true of embroidery. All tools of the embroidery have already been covered in previous units. However, main tools used in adda work in detail are as under:

Adda (wooden frame)

It is a horizontal wooden adjustable frame, consisting of four wooden bars. It is raised sufficiently from the ground to make it convenient for the embroiderer to work, without having to bend too far forward while sitting on the ground. The needle is always pushed in such a way that it should be away from the embroiderer and never towards him/her. The fabric on which the embroidery is to be done is first stitched on the two horizontal wooden bars and stretched apart. Then it is fixed tightly and locked onto the other two vertically parallel wooden bars of the adda. This prevents the fabric from moving while working, and also enables clear vision and faster movement of the tools.

Fig.3.4.1: Adda or hoop

Aari (needle)

It is the main tool of the Zardozi embroidery. It has a hook at the tip and a wooden handle at the back. The needles are also available with an iron and a plastic handle. Aari (needles) are available in different sizes and thickness, which may be selected according to the type of the fabric, design, type of thread and raw material used. For fine fabric, fine Aari is used, while for a heavy fabric, a thick Aari is used. An Aari may be selected according to the raw material also, for example Aari for zari, Aari for sitara or for dabka, etc. Thus, it can be selected by the embroiderer according to his/her requirement, looking into all the aspects of embroidery work.

Aari resembles the shape of a crochet needle and is a pen-like needle. It forms an intrinsic form of artwork called the Aari work.

Fig.3.4.2: Adda or hoop needle

• The needle hooks are made of iron.

• They are sometimes handcrafted.

• They do not damage the fabrics, even very fine fabrics, as they are filled properly.

3.4.3 Fabric Fixation on Adda

Setting an Adda

The tightening of fabric is known as tangarna and involves more than one person. Adda is a wooden frame mainly used for Aari work on which the fabric to be embroidered is stretched tightly, making it comfortable and suitable for working. This frame has adjustable wooden bars which are rested on four stools or stands at four corners. These frames can also be customized according to the width of the fabric. These frames are large and mainly made up of sheesham wood. It is strong, hard and durable, but sometimes bamboo is also used as an alternative material. One frame can provide accommodation to 4–6 artisans sitting on both of its sides. To sit in a comfortable manner, the height of the frame is usually 1.5–2 feet above the ground. The artisans, both male and female, sit either on the floor or on cushions. For smaller designs, small metal frames can be used instead of wooden planks.

The adda or frame has four stands, two main bars and two sidebars. It is similar to the frames of a slate. The two main bars have evenly placed holes, through which a thick cotton rope is passed twice. A strip of cotton cloth is attached to one side (inner side) of the main bar. The embroiderer has to sit on the floor to embroider.

To attach the fabric please follow below steps.

1. The fabric is first joined to the two main bars.

2. The centers of the bar as well as of the fabric are marked on both sides and pinned up.

3. Cotton thread is used to sew the first side of the fabric to one of the cotton strips of the main bars.

4. To begin, a knot is made and to end, 4–5 back stitches are done onto the white cotton cloth, which is attached on the bars.

5. Then, the second side to the other bar is stitched and rolled.

6. Now, the stretcher bars are inserted and the frame is stretched to place the pegs or nails.

7. Then, the selvedges are folded. Small darning stitches are sewn and the same thread passes through these stitches, then the fabric is pulled tightly. Now, the thread is pulled and tied to the peg or nail.

8. Now all the four sides of the fabric are stretched.

3.4.4 Stitches in Adda/Aari Work

Common Stitches in Adda/Aari work

The basic stitch used in Aari work is chain stitch. It is the foundation of all the other stitches of Aari embroidery.

Aari work can be done with any variety of threads like silk, cotton, zari, wool, etc. But to begin with, zari is preferable, to avoid frequent breakage of thread. Chain stitch is worked from the bottom of the fabric towards the front side or top side of the fabric attached on adda. The thick chain (madhkan), paani and butt filling, fansa chain, open chain, etc., are all chain variations.

Bead and sequin work is quite simple. While doing chain stitch itself, bead or sequin is dropped in each loop of the chain to generate a line or series of beads or sequins. Beads and sequins are available in variety of shapes and sizes. One can select them as per usage in the design. For beadwork, longer tip needles are used to collect multiple beads together in it. Similarly, sequins of different diameters are available which can be used as per need.

Chain stitch

Mainly, the basic stitch used in adda work is chain stitch.

- **STEP 1:** Insert the Aari through the fabric to the backside of the fabric attached on the adda (frame) mostly with the right hand, and in the meantime the thread is seized in the left hand under the fabric.

- **STEP 2:** Catch the thread in the hook.

- **STEP 3:** Bring it all the way through to the front, without letting go the thread in your left hand.

- **STEP 4:** Rotate the hook to the opposite side.

- **STEP 5:** Insert the needle looped tip a short distance ahead and on the design line. Keep your stitch the same size.

- **STEP 6:** Place the thread around the hook of the needle.

- **STEP 7:** Now, make a complete turnaround the hook.

- **STEP 8:** Turn the hook opposite clockwise.

- **STEP 9:** Bring the hook up above on the fabric.
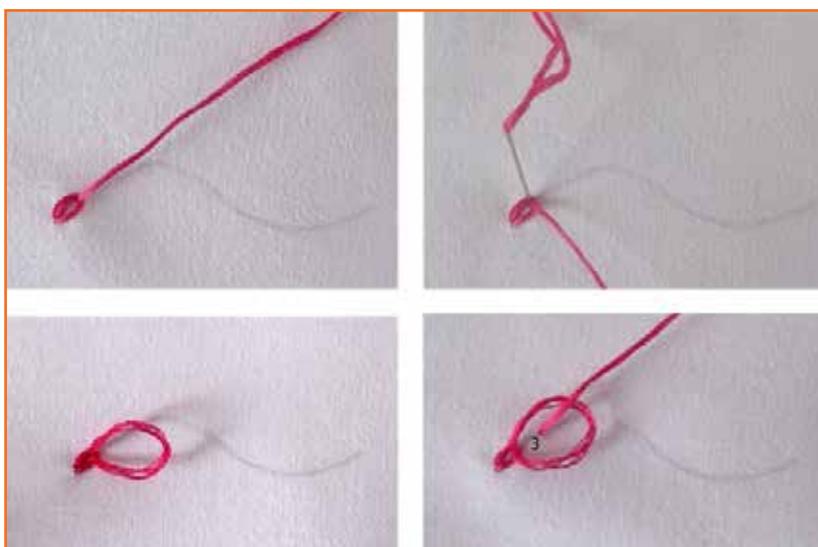
Fig.3.4.3: Chain stitch in Adda work

- **STEP 10:** Remember to keep the thread slightly straight.

- **STEP 11:** Rotate the hook opposite, again clockwise.

- **STEP 12:** Insert the hook again a small distance ahead.

- **STEP 13:** Turn over again a full loop around the Aari tip and start again from step 7.

Padded chain stitch (load filling stitch)

To create a padded chain stitch, we need piping thread, fabric glue and Aari. The basic stitch used to make padded stitch is the chain stitch.

As per the selected design, piping thread is cut and fabric glue is applied to it. Paste this thread on the desired area. Now, to cover the piping thread, simple stitches or elongated chain stitches are made over the piping thread. Outline and finish using chain stitch in zari thread giving it a padded effect.
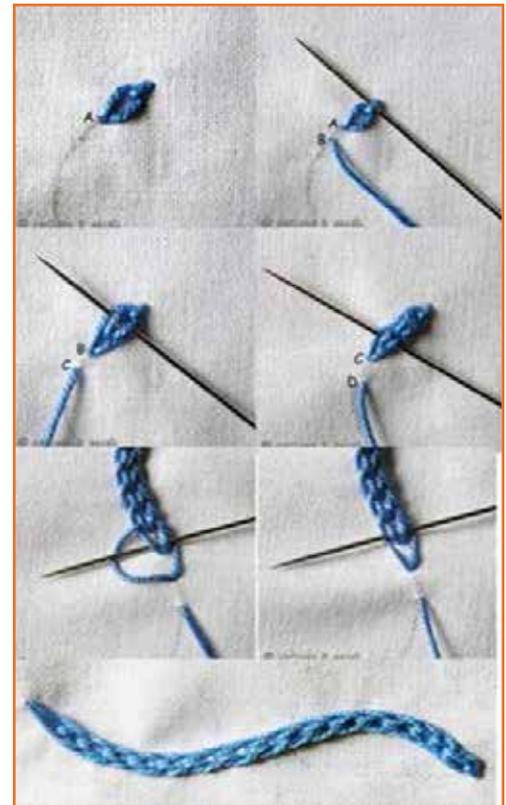
Fig.3.4.4: Padded chain stitch

Fig.3.4.5: Sequin work

Sequin work

Sequins are disk-shaped material used for ornamentation purpose and are usually made from plastic. They are available in different colours and shapes. Mainly, sequins have a hole in the centre. Paillettes are sequin like and are commonly very large and flat. Sequins can be attached while making loops of the chain stitch. Sequins are put on the fabric attached to adda and while taking the loop for chain, it is also taken in the loop. Sequins may be sewed flat to the fabric, using Aari or embroidery needle so that they do not shift, and are less likely to drop or they may be sewed at only one point, so that they hang, swing and move very easily, to grab more light. Some sequins are made with multiple facets, to increase their reflective ability.

Beadwork

It is an attractive art of embroidering small beads into a range of aesthetically pleasant patterns. In this type of work, very small and uniform coloured beads are attached to delicate garments or other fabrics. Each bead is just a part of a large design, and the overall design creates the impact, rather than a single bead. The artistry and the skill depend on the design, construction and implementation of the article.

Fig.3.4.6: Beadwork

Bead embroidery of different areas can be recognized easily by the design, colour and size of the beads, and the methods of its creation. This is done by Aari or fine hook needle, by adding beads in a chain stitch thread while working on the fabric. In Aari work, the beads are stitched to the upper right side of the fabric where the loops of the chain stitch are made. The thread is tied through each bead as the stitches are created. Once the Aari embroidery is completed, it is carefully checked for errors and accidental defects or problems in order to achieve zero defect final products. All the steps of manufacturing should be strictly supervised by experienced quality control professionals, who ensure perfect execution of the task. One must make sure that the raw material and end products fulfill the quality standards and safety norms.

UNIT 3.5: Waste Minimization

Unit Objectives ⌖

At the end of this unit, participants will be able to:

1. Explain the waste management.
2. Ensure minimisation of waste.

3.5.1 Waste Management

• Waste is substance and material that is not wanted and possesses no use to anyone or anything.

• It is known to us in various names and forms like, rubbish, trash, garbage, or junk which depends the type of rubbish and the location of it.

During the manufacturing process of garments in apparel industry, there is a lot of waste which is produced in the form of incorrectly embroidered fabric pieces, broken needles or shredded threads. It is the duty of the worker to confirm that waste/wastage is diminished to the extent possible.

The various sources of waste in apparel/garment industry are:

• **Fabric Store:** Fabric storehouse is the definite area where the fabric for production is received or dispatched for processing. Beside storage the fabric store section is also in charge of the inspection of the goods received by it. The fabric which is sourced from outside into the fabric store should be reviewed for the defects.

• **Wastes in the Cutting Room:** Wastes in the cutting room can come from several bases like the marker utilization, cutting waste and roll remnants.

• **Bundling Room:** The review is not 100%, some faulty pieces go unnoticed and reach the stage of production.

• **Production Floor:** The loaders load the lines with the bundles which pass on the line according to the process. The operator may find the piece defective at any stage and dispose it off there and then only.

• **Dyeing and Washing:** The wastes happen when either the pieces are lost or inappropriate during

• **Printing/Embroidery:** The printing on the garment does not match the standard while in the case of embroidery, it may not be on the correct place on the garment or the number of threads used is less and desired effect is not obtained.

• Finishing: This may include measurement/fit defect, trims defect or pressing

The main causes of waste in the industry are:

• Motion

• Conveyance (moving thing around)

• Correction

• Over processing

• Inventory

• Overproduction

• Knowledge disconnection and underutilization of resources

Few key points/techniques to ensure waste management are given in the table below:

S No	Waste Source	Waste Management
1	Incorrectly Embroidered Pieces	The worker has to ensure that he or she understands the design before embroidering it on the fabric. In case of any doubt, one has to check with the supervisor or in-charge.
2	Embroidery does not meet product/design specification	In case the embroidered design does not meet the design specification, instead of directly labelling it as waste, corrective action can be taken. Corrective action may include finding out if the embroidery can be altered to meet the specification. The items should be disposed as waste only if no re-work is possible
3	Damaged material/tool	In case the material to be used is damaged, it should be properly labelled and disposed accordingly (like biodegradable waste, recyclable waste etc.)
4	Damaged material/tool	In case tools/material are found to be damaged, the entire lot should be checked to ensure that the other items are also not damaged. If other items are also damaged, it should be reported to the supervisor immediately

Fig.3.5.1: Waste Management

Industry Visit

The purpose of visiting an apparel manufacturing unit is to get hands on knowledge about various processes involved in the work of a Hand Embroiderer. During the visit you have to interact with Hand Embroiderer and supervisors to understand how work is done in industry. Make sure that you keep a notebook handy and note down any important points that come up during your interaction at the apparel manufacturing unit. When you go to an apparel manufacturing unit, you should:

• Analyze how a Hand Embroiderer manage the waste.

• Know the various sources of waste in apparel/garment industry.

• Understand how the different types of waste are managed.

• Ask questions to Hand Embroiderers/supervisors if you have any query.

Resources

Scan the QR codes or click on the link to watch the related videos.

Descriptions	QR Codes
Hand Embroidery Stitches	https://youtu.be/BlpnAN6x394
Adda work embroidery	https://youtu.be/DPMB56gzgMg
Waste minimization	https://youtu.be/uHFIHxUH_gw

Exercise

1. How would you ensure product meets specifications?

   a) Meeting customer's need

   b) Meeting drawings created by the designer

   c) Meeting dimensions

   d) All of the above

2. Half, Quarter, Back are type of _____ stitch

   a) Cross

   b) Tapestry

   c) Shadow

   d) Mirror

3. Tapestry Stitch starts with an X shaped stitch that is embroidered using floss on an even weave fabric.

    a) True

    b) False

4. Stitch is also known as Canvas Work and is commonly used to produce items like wall-hangings.

    a) Cross

    b) Tapestry

    c) Both a and b

    d) None of the above

5. Mirror work technique is also known as shisha (Hindi for mirror) or abla embroidery.

    a) True

    b) False

6. Which of the followings are the steps of making a Scallop Stitch?

    a) Come up at point 1, and then go down at point 2, leaving the thread loose.

    b) Go down at point 4, but not the same hole

    c) Come up at point 3, catching the loop of thread

    d) All the above

7. Hemstitch is used in drawn thread work.

    a) True

    b) False

8. Applique is an embroidery technique that features embroidered designs with spaces cut completely out of the fabric.

    a) True

    b) False

9. White colour thread is used commonly in_____Embroidery

    a) Kantha

    b) Chikankari

    c) Chamba rumal

    d) Phulkaari

10. Chain, Buttonhole, Blanket and Feather Stitch are type of _____ stitch

    a) Flat Stitch

    b) Loop Stitch

    c) Knotted Stitch

    d) None of the above

11. Which of the following is a type of Flat Stitch?

    a) Fishbone stitch

    b) Feather stitch

    c) Fly Stitch

    d) All of the above

12. Which type of motifs are used in Chikankari?

    a) Paisley

    b) Machli- Fish

    c) Creepers

    d) All of the above

13. Which type of motifs are used in Phulkari?

    a) Geometric

    b) Jewellery

    c) Birds and animal

    d) All of the above

14. Kamdani, Gijia, Mukaish are type of which embroidery?

    a) Chikankari

    b) Zardosi

    c) Phulkari

    d) None of the above

15. Running, Stem, Satin and Cross stitch are type of _____ stitch

    a) Flat Stitch

    b) Loop Stitch

    c) Knotted Stitch

    d) None of the above

4. Embroider Decorative Designs using a Combination of Stitches & Work Styles

Unit 4.1 – Use Different Types of Hand Embroidery Techniques

Unit 4.2 – Make Different Types of Edges, Applique Work and Cut Work

Unit 4.3 – Common Embroidery Techniques in India

Unit 4.4 – Embroidery Defects and Their Rectification

Key Learning Outcomes

At the end of this module, participants will be able to:

1. Ensure work area is free from hazards.

2. Make different types of edges like hem stitch, scallops, lace & rolled hem.

3. Use and combine different hand embroidery techniques to creative decorative designs such cross stitch, tapestry stitch, shadow work, mirror work, English Hand Embroiderercking.

4. Inspect embroidered products against specifications.

5. Identify and understand common factors and problems affecting embroidery.

UNIT 4.1: Use Different Types of Hand Embroidery Techniques

Unit Objectives 🎯

At the end of this unit, participants will be able to:

1. Use and combine different hand embroidery techniques to creative decorative designs such cross stitch, tapestry stitch, shadow work, mirror work, English Hand Embroidercking.

2. Inspect embroidered products against specifications.

3. Identify and understand common factors and problems affecting embroidery.

4.1.1 Cross Stitch Technique

Cross Stitch is one of the most basic embroidery methods. It starts with an X shaped stitch that is embroidered using floss on an evenweave fabric. The cross stitch is recurrent a number of times for creating a design. This technique uses 6 basic stitches to complete the embroidery work:

- **Cross Stitch:** A Cross Stitch is an x-shaped embroidery stitch

- **Half Stitch:** The Half Stitch is a slanting stitch covering one corner to the opposite corner.

- **Quarter Stitch:** A quarter stitch resembles a half stitch but is half its length and only extends into the centre of the stitching square. Quarter stitches are often used to create details or to complete a three quarter stitch that has been stitched in a different colour.

- **Three Quarter Stitch:** Three Quarter stitches are used to generate curved design lines. This fractional stitch makes it possible to add detail to the otherwise "blocky" look of traditional cross stitch.

- **Back Stitch:** A backstitch is a straight stitch used for outlining. These stitches form lines and are generally used to outline shapes or to add fine detail to your design.

Fig.4.1.1: Cross Stitching

- **French Knot:** The French Knot is a popular embellished stitch used in cross stitch to add detail. French knots look great clustered together to create texture, or exclusively to serve as a centre of a flower, or eyes to an animal on the design.
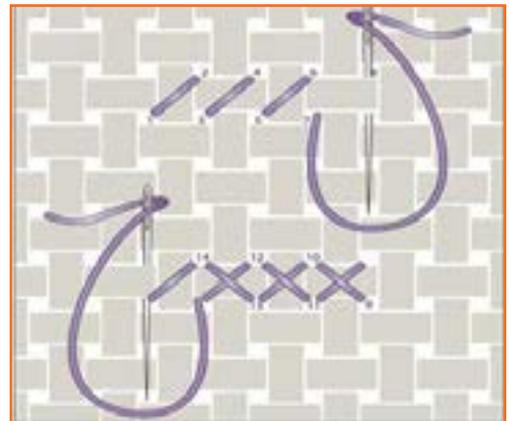
The method of Cross Stitching is explained in Section '2.2.7. STEPs of Carrying out Cross Stitch'

4.1.2. Tapestry Stitch Technique

This is also called Canvas Work It is used to produce items like wall-hangings. With conventional tapestry, the whole of the tapestry canvas is covered in stitching (unlike Cross Stitch where areas of fabric are not s stitched). Commonly used stitches to perform tapestry technique are:

Half Cross Stitch

Half Cross Stitch is easy to learn and mainly used for pictures. Half Cross Stitch is the most usual stitch used for tapestry work and is mainly used for pictures, but can also be used for cushion designs. It is tranquil to master and comprises of small compact stitches to cover the fabric or canvas. The stitches are diagonal on the front of the canvas and vertical on the back of the canvas.
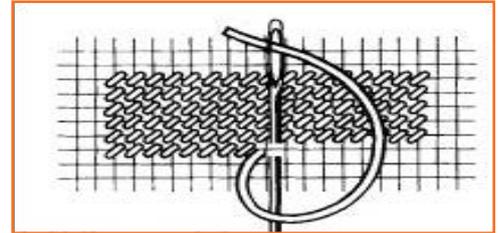
Fig.4.1.2: Half Cross Stitch

Tent Stitch

This stich is used when harder wearing formation is needed, such as chair seat covers and other furnishing items. Tent Stitch is similar to Half Cross Stitch and looks identical on the front of the canvas showing small diagonal stitches. But the back of the canvas is much larger with longer diagonal 'stitches' on the back of the canvas
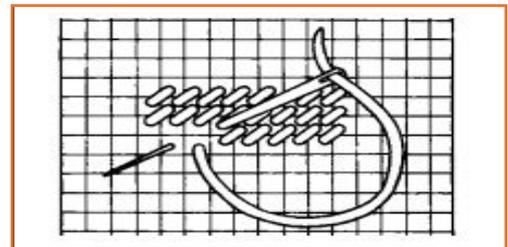
Fig.4.1.3: Tent Stitch

Basketweave Stitch

It is also known as Diagonal Tent Stitch and look similar to half cross and tent stitch. It is used to fill larger areas, for example the background of a piece, but is not suitable for fine detail.
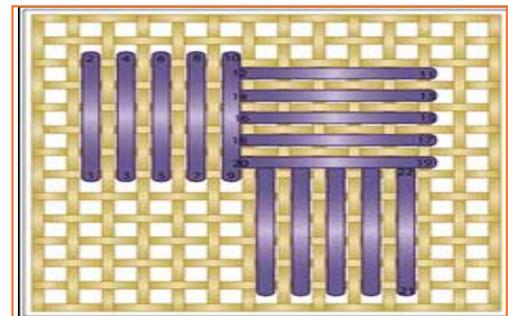
Fig.4.1.4: Basketweave Stitch

4.1.3. Shadow Work Technique

Shadow Work is a type of embroidery worked on semi-sheer or sheer fabric, with middle of the embroidery on the back of the design so that the colour of the thread – or a shadow of the colour – shows through on the front of the fabric between two solid-coloured outlines

The stitch used in shadow work embroidery is mostly backstitch (explained in Section 3.2,1), but it is functioned between two lines, sporadic back and forth between the two lines with each stitch.

Fig.4.1.5: Shadow Technique

On the back of the fabric, the resulting closely worked herringbone stitch (Section 2.2.8) forms a layer of criss-crossing threads that shows through on the front of the fabric with just a hint of colour between the backstitch outlines. Shadow work is mostly done of linen fabrics, as through the fabric the shadows shows through vibrantly.

4.1.4. Mirror Work Technique

This technique is also known as shisha (Hindi for mirror) or abla embroidery. As the name suggests, it uses small mirrors to decorate the embroidery design.

4.1.4.1. STEPs of Mirror Work
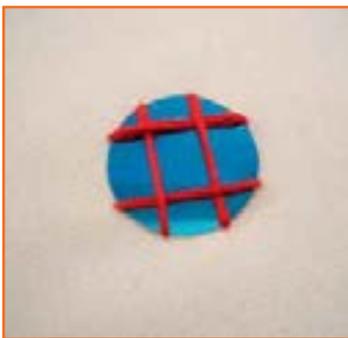
STEP 1: In this technique, the small mirror is placed on the fabric and is secured with a crossing of foundation stitches
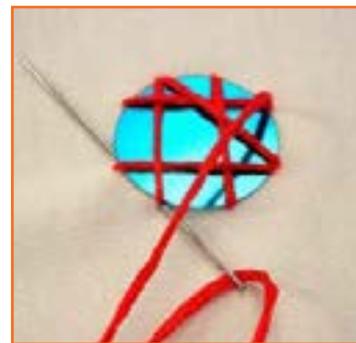
STEP 2: Duplicate the foundation stitches, but turned 45 degrees

STEP 3: Duplicate the foundation stitches, but turned 45 degrees

4.1.5. English Hand Embroider King Technique

Hand Embroiderer king is a technique employed to fold fabric in such a way that it can stretch. It is used mainly as decorative purposes but can also be used cuffs, bodices, and necklines in garments where buttons are undesirable. It usually requires light weight fabric like cotton or silk. Crewel Embroidery needle is primarily used.

Hand Embroiderer king commonly employs following stitches:

- **Cable stitch:** a tight stitch of double rows that joins alternating columns.

- **Stem stitch:** a tight stitch with least elasticity that joins two columns of gathers at a time in single overlapping rows with a descending slope.

- **Outline stitch:** similar to the stem stitch but with an upward slope.

- **Cable flowerette:** a set of gathers worked in three rows of stitches across four columns of gathers. Often organized in diagonally arranged sets of flowerettes for loose Hand Embroiderercking

- **Wave stitch:** a medium density pattern that alternately employs tight horizontal stitches and loose diagonal stitches

- **Honeycomb stitch:** a medium density variant on the cable stitch that double stitches each set of gathers and provides more spacing between them, with an intervening diagonal stitch concealed on the reverse side of the fabric.

- **Surface honeycomb stitch:** a tight variant on the honeycomb stitch and the wave stitch with the diagonal stitch visible, but spanning only one gather instead of a gather and a space

- **Trellis stitch:** a medium density pattern that uses stem stitches and outine stitches to form diamond-shaped patterns.

- **Vandyke stitch:** a tight variant on the surface honeycomb stitch that wraps diagonal stitches in the opposite direction.

- **Bullion stitch:** a knotted stitch that joins various gathers in a single stitch.
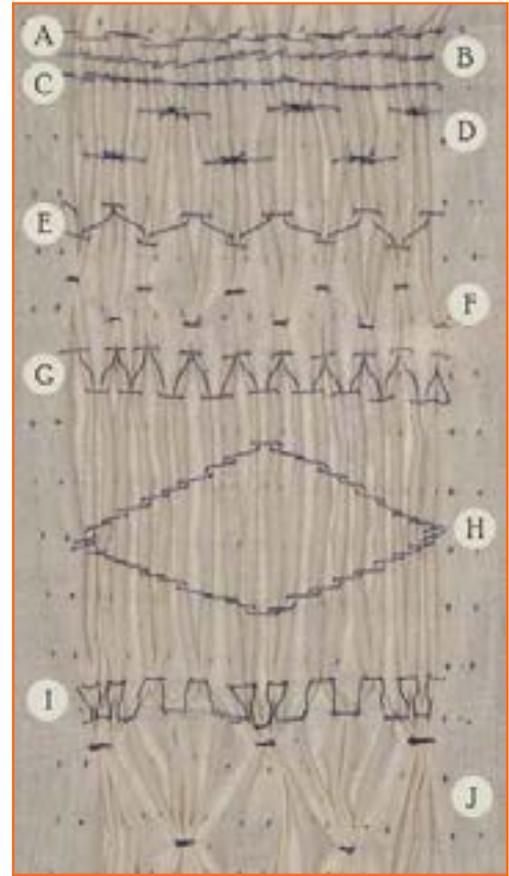
Fig.4.1.6: Shadow Technique

4.1.6 Inspecting Product Against Specification

One of the most crucial role of a hand embroiderer is to inspect the product that has been embroidered against the design specification. This is crucial to maintain time lines and also to ensure minimum wastage occurs.

Inspection is the verification of product quality to per-identified quality or design specifications. The key benefits of inspecting a product before marking it as complete or sending it the next department (like packing/loading) are:

- Strengthen and protect the brand image and reputation.

- Improve performance of suppliers and product quality to minimize product loss, rejects, charge backs and recalls.

- Drive continued improvement of quality systems and performance to benefit both the buyer and producer

The key points involved in inspecting embroidered product against the specification are:

- Are the colour used in embroidery fabrics according to the design sheet/specification?

- Are correct threads/thread used for creating the embroidered product

- Are the stitches used according to design instruction/specification?

- Is the embroidery pattern aligned and positioned properly on the sewn product?

- If embroidering names, are the spellings correct (according to the design specification)

4.1.7 Common Factors Affecting Embroidery

A number of factors affect embroidery and these have to be kept in mind to ensure that these factors do not become problems or quality issues.

Few common factors/problems affecting embroidery are:

S No	Factor/Problem	Description and Remedy
1	Needle	Something as small as a needle can adversely affect embroidery quality if not selected correctly. For the most accurate stitch placement, use the finest, sharpest embroidery needle that can carry the thread through the fabric without damage to either.
2	Thread	The type of thread used in the embroidery is another crucial factor. Threads should not be selected randomly or without thought as the visual and touch appeal of the embroidery depends on the thread being used. The thread specified in the design specifications should always be used
3	Fabric Selection	Fabric is also a very important factor in embroidery. The fabric chosen for the embroidery should be as specified in the design specifications. If there is no fabric specified then, the fabric should be chosen considering the type of output needed and the stitches that will be used. Like, for cross stitch or pulled work hardanger fabric should be chosen
4	Scaling Designs	Whenever the embroiderer alters a design by sizing it up or down, skewing it, and even rotating it so that it sews on the bias, he/she has changed it from the way it was originally specified, resulting in unsatisfactory output. This should be avoided and should be done only after approval of the supervisor

Fig.4.1.7: Common Factors Affecting Embroidery

Industry Visit

The purpose of visiting an apparel manufacturing unit is to get hands on knowledge about various processes involved in the work of a Hand Embroiderer. During the visit you have to interact with Hand Embroiderer and supervisors to understand how work is done in industry. Make sure that you keep a notebook handy and note down any important points that come up during your interaction at the apparel manufacturing unit. When you go to an apparel manufacturing unit, you should:

- Understand different hand embroidery techniques like; cross stitch, tapestry stitch, shadow work, mirror work, English Hand Embroiderercking to creative decorative designs such cross stitch, tapestry stitch, shadow work, mirror work, English Hand Embroiderercking.

- Inspect embroidered products against specifications.

- Identify and understand common factors and problems affecting embroidery.

- Ask questions to Hand Embroiderers/supervisors if you have any query.

UNIT 4.2: Make Different Types of Edges, Applique Work & Cut Work

Unit Objectives ⊚

At the end of this unit, participants will be able to:

• Make different types of edges like:

» Hem stitch

» Scallops

» Lace & rolled hem

• Carry out applique work.

• Carry out cut work.

4.2.1 Introduction to Edge Stitching

Hand-embroidering edge stitching around a design or pattern adds texture and provides a mix of colour to make the hand embroidery stand out and bring out the design element in the embroidered product.

4.2.2 Scallop Stitch and Its STEPs

The scallop stitch makes it easy to add patterns at the edge of the embroidery stitches. A single stitch looks like a smiling face

The steps to make a scallop stitch are:

STEP 1: Come up at point 1, then go down at point 2, leaving the thread loose.

STEP 2: Come up at point 3, catching the loop of thread

STEP 3: Go down at point 4, but not the same hole
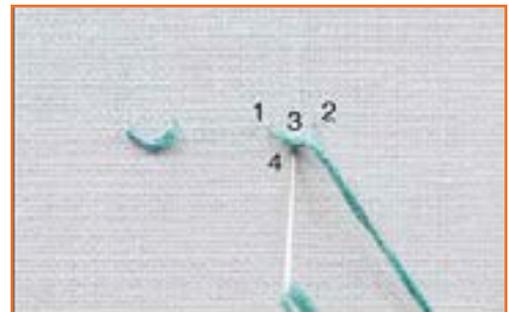
Fig. 4.2.1 Scallop Stitch

4.2.3 Hem Stitch and Its STEPs

Hemstitch is used in drawn thread work. It adds a decorative edge to a drawn thread area and also bunches together the remaining threads.

The steps for hemstitching are:

STEP 1: Bring the needle up in the fabric two threads down below the last empty line next to your satin stitch band or your re-woven edge.
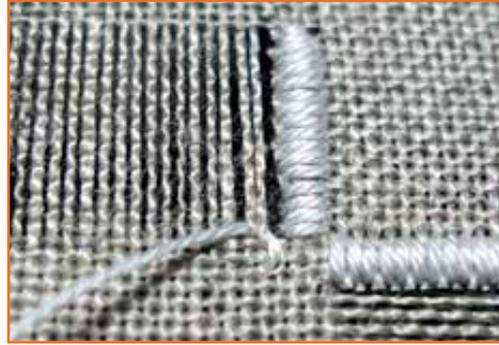
STEP 2: Take the needle behind the two threads and out again to the front and pull the needle through.
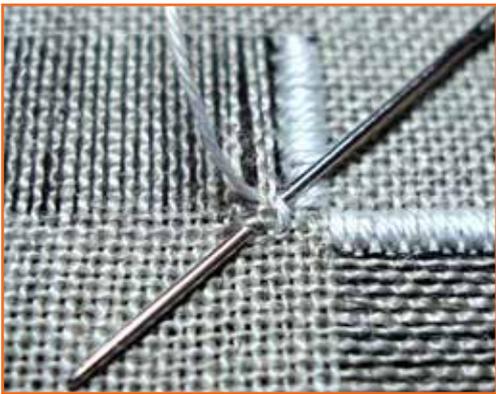
STEP 3: Take the needle back behind the same two threads (so that the working thread wraps around the two threads), angle the needle down, and bring it up into the fabric two threads down from the edge, positioning the needle for the next stitch
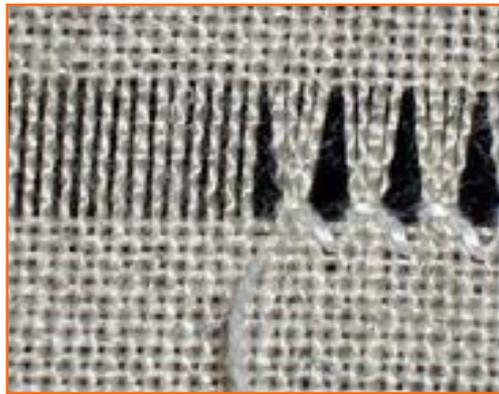
STEP 4: Pull the needle through, and tighten the stitch around the bunch of fabric threads

STEP 5: Continue working the hemstitch towards the end of the band, then run the needle and thread under the satin stitching at the end of the band to secure it.

4.2.4. Rolled Hem and Its STEPs

The Rolled Hem is also known as Orlo a Prillo stitch. A rolled hem is commonly used to makes edges for napkins and tablecloths and other utility items.

The steps of making a rolled hem are:
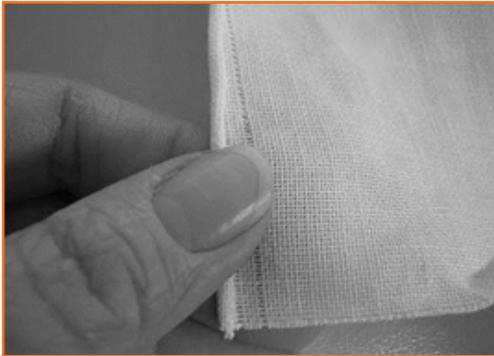
STEP 1: Take the edge of the fabric between the index finger and thread. Squeeze and roll a little

STEP 2: Enter the needle and let a couple of inches of the tail of the thread lay in the part that would be rolled up and take out with the needle about two ground threads into the roll. Working from bottom to top direction, enter the needle into the withdrawn thread channel four ground threads up from where the exit in the roll and skipping four ground threads

STEP 3: The original exit position should be level with the exit position in withdrawn channel. Now enter the needle into the roll, keeping the same distance as before (about two ground threads), the needle goes between the roll and the fabric, meaning it never comes out on the front side when entering into the roll.

STEP 4: Do not pierce the ground fabric so that the stitch will be visible from the front.

4.2.5 Applique Work and Its STEPs

Applique work is the method or process of applying another device (piece of fabric) over the fabric surface. It states to needlework procedure in which patterns or mimetic scenes are shaped by the accessory of smaller pieces of fabric to a larger piece of complementary colour or texture. Before beginning the applique work, some preparatory work is required. The preparatory work comprises of:

- Chose a background fabric, and fabrics for your appliqué pieces,
- Create patterns for each shape for appliquéing. The patterns should be traced from the templates as exactly potential.

The steps of applique work are explained below. Mostly blanket stitching is used in applique work, and the steps involve using blanket stitch for applique work.

STEP 1: Prepare the piece you need to applique. Cut the piece to the size and shape you want. Leave the edges raw if the fabric doesn't fray too much (or if it is the look as per the design)

STEP 2: Place the applique where it is required to be stitched on the main fabric. The stitching will happen from the front of the piece
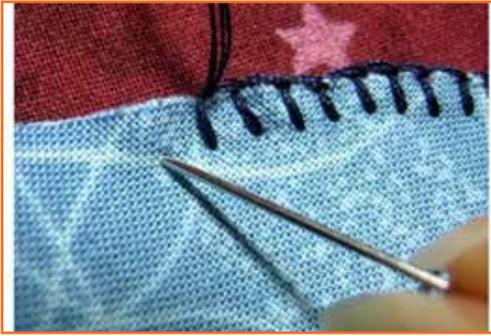
STEP 3: Run the needle down through both layers of fabric. Work this part a short distance from the edge of the applique.

STEP 4: Run the needle up through the base fabric. Try to get it at the edge of the applique piece or just slightly underneath.

STEP 5: Catch the thread from the preceding stitch under the tip of the needle. Now Pull the stitch tight and repeat. If you caught the thread from the previous stitch correctly, this stitch should hold a bit of thread along the edge of the applique

STEP 6: This is how an applique work looks like

4.2.6 Cut Work and its STEPs

Cutwork is an embroidery technique that features embroidered designs with spaces cut completely out of the fabric. Cutwork is usually done on linen. It can also be worked on cotton or cotton / linen blends. Cut work is used to decorate household items like table linens, fine hand towels, curtains, bed linens and even clothing.

The steps involved in cut work are:

STEP 1: Transfer the design on the fabric using transfer paper or hot iron or pouncing method

STEP 2: Use reinforced stitch to stitch all around the traced design

STEP 3: Work the bars exclusively on the surface of the fabric. Make two or three strands. The more strands the thicker the bar.

STEP 4: Start filling the bars. When you come to the other end, secure it by intertwining the embroidery floss into the neighbouring stitches

STEP 5: Now start cutting the fabric as per design. Be careful as to avoid cutting the bars

STEP 6: Use the buttonhole or satin stitch to embroider the piece tucking the cut-out piece underneath. Another method is to do all the needle work first and when finished do the cut work. But this requires lot of precision work.

STEP 7: This is how the finished piece looks like

Industry Visit

The purpose of visiting an apparel manufacturing unit is to get hands on knowledge about various processes involved in the work of an Hand Embroiderer. During the visit you have to interact with Hand Embroiderers and supervisors to understand how work is done in industry. Make sure that you keep a notebook handy and note down any important points that come up during your interaction at the apparel manufacturing unit. When you go to an apparel manufacturing unit, you should:

• Analyze how a Hand Embroiderer make different types of edges like:

  » Hem stitch,

  » Scallops,

  » Lace & rolled hem

• Understand the out applique and out cut work

• Ask questions to Hand Embroiderers/supervisors if you have any query.

UNIT 4.3: Common Embroidery Techniques in India

Unit Objectives

At the end of this unit, participants will be able to:

• Identify and understand Chikankari Motifs and Stitches.

• Identify and understand Phulkari Motifs and Stitches.

• Identify and understand Zari Motifs and Stitches.

4.3.1 Chikankari

The word 'Chikan' is derived from the Persian word 'Chikin' or 'Chikeen' which means a kind of embroidered fabric. Chikankari is an ancient form of white floral embroidery, intricately worked with needle and raw thread. It is centered mainly in the northern heartland of India, Lucknow. Chikan is primarily white embroidery on white fabric, with mainly floral designs performed on fine white cotton with loosened threads of white cotton. Chikankari is one of the most widespread embroidery work of North India. It is an ancient form of delicate floral embroidery done intricately with raw cotton thread on the finest of fabrics. Conventionally, chikankari was done on white fine muslin called Tanzeb.

4.3.1.1 Chikankari Motifs

A major features of Chikankari embroidery is its great contrast in texture. The embroidery on a single piece of fabric ranges from fine pulled thread work, executed with one thread, to heavily pressed stitches. Chikankari is a understated embroidery, white on white, in which minute and delicate stitches stand out as textural contrasts, shadows and decorations. Some stitches are worked from the back and some from the front. In AnokhiChikan, a type of Chikankari embroidery, the stitches do not appear at the back.

Common Chikankari motifs are:

No.	Motif Details	Illustration
	Paisley It is also known as Keri (raw mango) and is termed differently in different languages. • In Bengali, Kalka; • In Tamil, Mankolam, or simply, mango pattern; • In Marathi, Koyari, or mango seed; • In Hindi/Urdu, Carrey, or mango seed; • In Punjabi, Ambi, or raw mango.	

	Machli- Fish **This motif comprises of two fishes symbolizing good luck.**	
	Hindi-Urdu Flower This representation of lyrical stylized flowers and petals is influenced by the Ganga-Jamuni tehzeeb.	
	Bel or Creepers Bel motifs are very common in the Awadh tradition of textiles and are an integral part of Chikankari.	
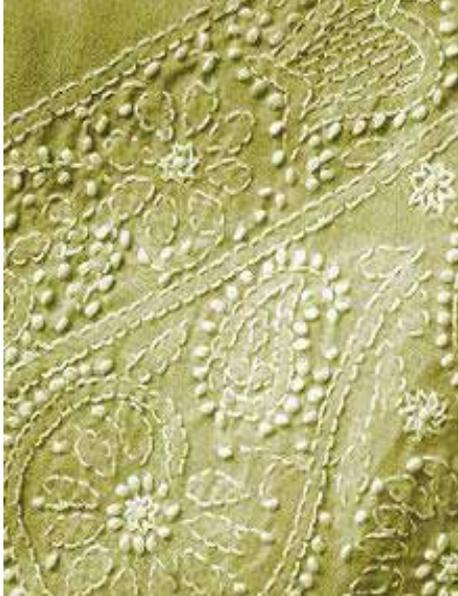
	Buta Butais one of the most popularmotifs of Mughal art, consisting of a floral spray with stylized leaves and flowers. Buta, or Buti, motifs are designed after a single flower or figure not as part of a larger pattern. It is commonly used in decorating buildings and paintings and in textile enamels and other decorative arts.	
	Geometrical patterns Geometrical patterns include vertical, horizontal, diagonal or zigzag patterns and stripes. These were used independently or to enclose a pattern in compartments or closed figures called 'jaals.'	

Fig.4.3.1: Chikankari Motifs

4.3.1.2 Chikankari Technique

A major characteristic of Chikankari embroidery, not shared by other white work, is its great contrast in texture. The embroidery on a single piece of fabric ranges from fine pulled thread work, executed with one thread, to heavily embossed stitches. Chikankari is a subtle embroidery, white on white, in which minute and delicate stitches stand out as textural contrasts, shadows and traceries. Some stitches are worked from the back and some from the front. In AnokhiChikan, a type of Chikankari embroidery, the stitches do not appear at the back.

4.3.1.3 Chikankari Stitches

Chikankari incorporates different surface ornamentation techniques/stitches:

• Embroidery stitches

• Jaalis

• Darazdari

Fig.4.3.2: Chikankari Techniques/Stitches

Types of Embroidery Stitches The stitches in Chikankari are divided mainly into three heads:

• **Flat stitches:** These are delicate, subtle and lie close to the surface of the fabric giving it a very distinctive textural appearance.

• **Embossed stitches:** These stitches are highlighted from the fabric surface lending it a characteristic grainy texture.

Types of Flat Stitches

S. No.	Type of Flat Stitches	Uses	Illustration
	Taipchi: Variations of runningstitch, which is worked on the right side of the fabric. It is occasionally done within parallel rows to fill petals and leaves in a motif, called Ghaspatti. Sometimes Taipchi is used to make bel-buti all over the fabric. This is the simplest chikan stitch. Work from right to left. Bring thread up at 1 then down at 2, up at 3 and down at 4 and continue. The spaces between the stitches can be the same length as the stitches or shorter for a different look. Take several stitches on needle before drawing it through.	Outlining, straight and curved lines. This is the simplest Chikan stitch and often serves as a basis for further embellishment.	
	Pechni: Here the Taipchi is covered by entwining the thread over it in a regular manner to provide the effect of something like a lever spring and is always done on the right side on the cloth.	Outlining, straight and curved lines. Taipchi is sometime used as a base for working other variations and pechni is one of them.	
	Rahet: Rahet is a stem stitch worked with six threads on the wrong side of the fabric. It forms a solid line of back stitch on the right side of the fabric. Work from left to right. Bring needle up at 1 and down at 2. Bring needle back up halfway between 1 and 2 at 3, just slightly above the first stitch. Be sure to keep thread below the needle. Continue stitching along line, keeping stitches small and uniform.	It is rarely used in its simple form. It is common in the double form called Dohra Bakhiya as an outlining stitch.	
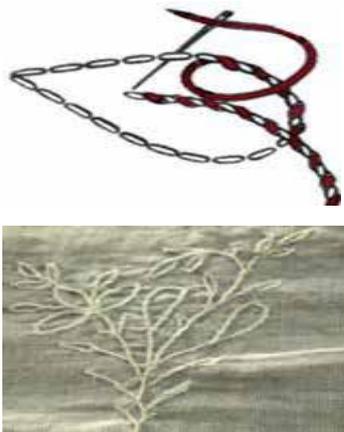
Bakhia is a variation of the Herringbone stitch. It is of two types: 1. Ulta Bakhia: The floats lie on the reverse of the fabric underneath the motif. The transparent muslin becomes opaque and provides a beautiful effect of light and shade. 2. Sidhi Bakhia: Satin stitch with crisscrossing of individual threads. The floats of thread lie on the surface of the fabric. This is used to fill the forms and there is no light and shade effect.	It is a filling stitch and is often referred to as shadow work.	
Hool- Eyelet stitch Hool is a fine detached eyelet stitch. Herein, a hole is punched in the fabric and the threads are teased apart. It is then held by small straight stitches all round and worked with one thread on the right side of the fabric.	It can be worked with upto six threads and often forms the centre of a flower.	
Kaj Similar to the Blanket stitch, the stitch is used to seal the edges of the material where it would be cut to save from fraying. The other name for the stitch is 'Kat'. Kaj is often done upon a scalloped design using the covering stitch.	It is used to fish the edges and prevent the fabric from fraying.	
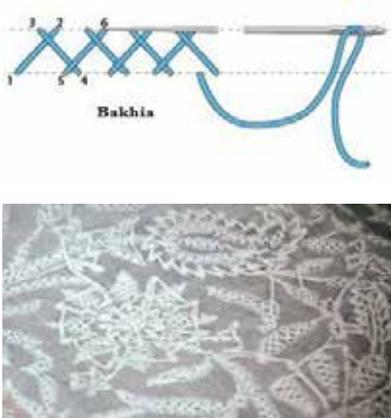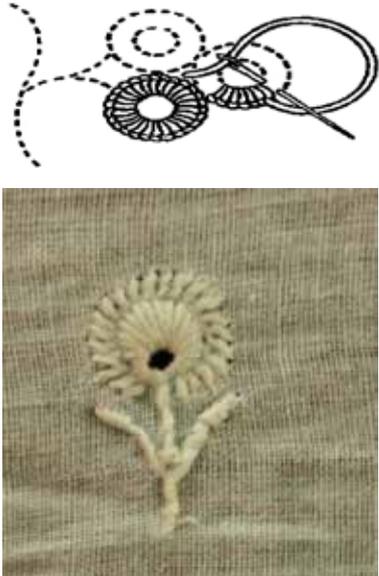
	Ghass Patti It is a variation of fish-bone stitch. Ghas appears as angled, tapering stitches, wide at the base of the patti and pointed at the top. The needle emerges from the central line of the leaf and defines the 'Frond' at the left edge. First, the needle passes under the cloth to the right side where the corresponding frond is traced back to the centre.	It is used as a filler stitch in leaves and gives a finish look.	
	Zanzeera Zanzeera is a small chain stitch worked with one thread on the right side of the fabric. Work from top to bottom. • Bring needle up at 1 and then reinsert needle in same hole, forming a loop. • Bring needle up at 2 and pull thread to tighten loop until desired shape is achieved. Repeat multiple stitches to create a chain. • To end the row, make a small stitch over the last loop to hold it in place to secure thread on backside.	Outlining, straight and curved lines, filling if rows are stitched closely together.	
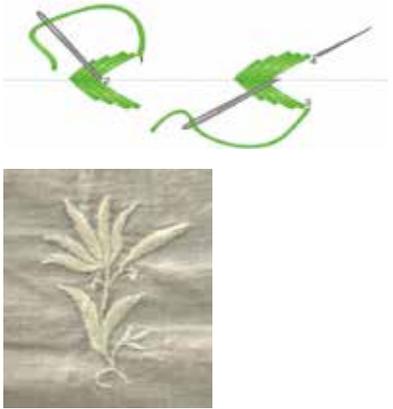
Fig.4.3.3: Types of Flat Stitches (Chikankari)

Types of Embossed Stitches

S. No.	Types of embossed stitches	Usage	Illustration
	Murri (French knot) It is a very minute satin stitch in which a knot is formed over already outlined Taipchi stitches. The smaller knots in rice shape are called Murri. Bring needle up at 1. Hold thread taut with other hand and wrap the thread twice around end of the needle. Gently pull the thread so that the wrapped threads tighten and while holding it taut, insert the needle next to 1.	It enhances the depth in the design and helps create a fine 3D texture. It is often used in creating the centre of flowers.	

	Phanda: It is a smaller shortened form of murri. The knots are spherical and very small, not pear shaped as in murri. This is a difficult stitch and requires very good craftsmanship.	Sometimes used to fill small cavities and depict flower Buds .
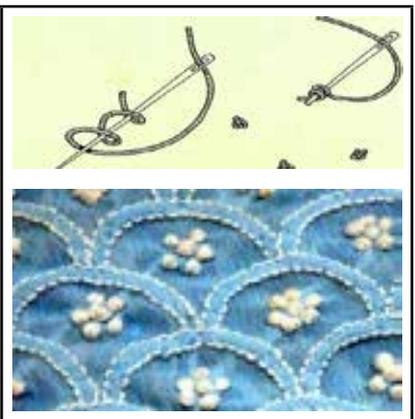
Fig.4.3.4: Types of Embossed Stitches (Chikankari)

Types of Jaalis

Jaali work is the most striking feature of Chikan embroidery and creates a delicate net effect. The fabric is broken into holes by teasing the warp and weft yarns and holding them in position using small stitches.

S. No.	Types of Jaalis	Illustration /Picture
1	**Madrasi jaali** This is a series of small holes, square in shape, alternating with closed areas.	
	Makra This is similar to the madrasi jaali. In this, the holes are filled with diagonal intersecting threads.	
	Chataiya jaali This is a checkered pattern formed with holes and closed areas.	
	Bangle Jaali In this jaali, the holes are smaller as compared to the madrasi jaali. The holes are assorted in parallel banks with alternate closed areas.	
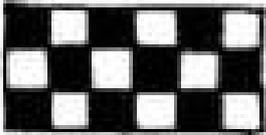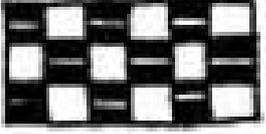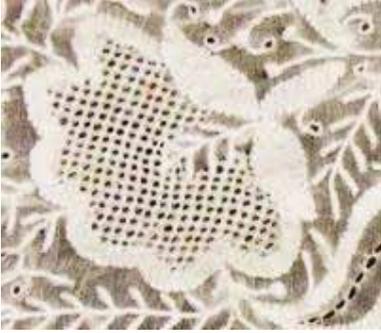
Fig.4.3.5: Types of Flat Stitches (Chikankari)

Types of Darazdari

Darazkakaam is a unique way of assembling two pieces of a garment through seemingly invisible stitches that are concealed. Tiny pieces of fabrics are cut out in different shapes which are applied either on the surface or between the two surfaces and then outlined with fine stitches. All this used to be done by hand, including the finishing of the edges and joining of the seams. It is visible only when seen against the light. Different motifs were used for joining the seams such as phooldaraz and macchlidaraz.

4.3.2 Phulkari

Phulkari is the traditional art of making embroidered odhnis which are head drape or stoles used by women in Punjab. "PHULKARI" means "flower working" or "flower embroidery". This art form invented in Punjab as early as the 15th century. This form of embroidery has more than twenty- three patterns which are skillfully reproduced by craftspersons trained in this art for several generations. The word Phulkari is a combination of two Sanskrit words phul (flower) and karya (to do). Therefore, phulkari means "to do flower work". When useful to folk embroidery, it represents for the ancient craft of embroidering flower designs with pure silk floss, called pat, on a chaddar (women's shawl) of plain rough hand woven pure cotton cloth, called khaddar (khadi).

4.3.2.1 Phulkari Motifs

The patterns are created by counting the threads of the base fabric and creating stitches in straight lines. The motifs are created primarily by varying the starting and ending points of adjoining stitches. Therefore, in Phulkaris, other than 'Sainchi', the motifs and figures used look geometrical and seem to be constructed with vertical, horizontal and diagonal lines. The colours of the thread may be varied to create a motif. In single coloured baghs/motifs, the orientation of the straight lines isalso varied to create a variation in gloss. This results in the variation in the amount and nature/direction of light reflected by the differently oriented thread.

Motif	Description	Visual
Geometric motifs	For phulkari, geometrical motifs such as triangles, squares and vertical and horizontal lines with changing directions and the darn stitch with various colour combinations are used. The subject matter of Phulkari comprises of flowers, animals and human forms and many other things made with geometrical patterns.	
The vegetables, fruits and floral motifs	As the name Phulkari suggests 'growing flower', many floral motifs were created by women from their own imagination. Genda (marigold), Surajmukhi (sun flower), Motia (jasmine) and Kol (lotus flower) arecommonly used for Phulkari and Bagh.	
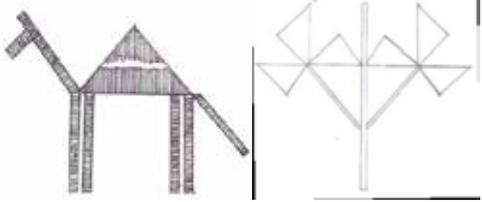
	Sometimes, the field of phulkari isembroidered with small patterns called "Butian". Among the different fruits, santaran(orange), anar (pomegranate), nakh (pear), bhut (muskmelon), mango slice, wheat or barley stalk and chhuare (dried dates) areused as motifs for a Phulkari. Among the vegetables, women use replicas of karela (bitter guard), gobhi (cauliflower), mirchi (Chili) and dhaniya (coriander).	
The birds and animal motifs	In a "sainchi phulkari", human forms, animals and birds areused. The most common animal motifs are the cow, buffalo, goat, camel, horse, elephant, snake, fish, tortoise, pig, rabbit, frog, cat, rat, donkey, squirrel and lion. Among the bird motifs, the peacock, parrot, sparrow, crow, owl, hen, and pigeon are the most popular.	
Jewellery motifs	Women of Punjab often use jewelry articles as motifs for embroidering Phulkari. They use items like the necklace, Kangan, Karanphool and Jhumka, different types of earrings, guluband different types of bracelets, nose rings, Tikka, Shingar Patti, Phools, and Rani Har with a pendant. All these articles are embroidered in a yellow coloured thread to make it look likethey are made of gold.	
Household articles	Articles from the kitchen are also used as motifs. These included the velana (rolling pin), gadava (brass urn) half filled with water, and ghara (pitcher) etc.	
Miscellaneous articles	Other Phulkari motifs are taken from rural life - For example, Shalimar, Charbagh and Chaurasia Bagh depict the Mughals and other gardens. Bagh that was embroidered with a red and yellow coloured flower was called Asharfi (mohur or gold coin) Bagh. "Ike" (ace of diamond design) came from playing cards. There are Dhoop Chhaon (sun light and shade), Lahriya (waves), Patedar (stripes), Chand (moon), Patang (kite), Saru (cypress tree), Pachranga (five coloured), Satranga (seven coloured), Dariya (river) and Shisha (mirror) patterns as well.	
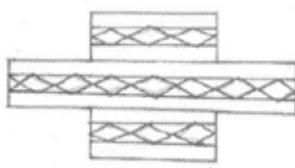
Fig.4.3.6: Phulkari Motifs

4.3.2.2 Phulkari Stitches

The thread stroke shaped on the front side of the fabric or any other suitable material/surface by the movement of the embroidery needle from the backside of the fabric to the front side and back to the back side is known as an embroidery stitch. Embroidery stitches are the least units in embroidery. Embroidery patterns are formed by doing many embroidery stitches, either all the same or dissimilar ones, following a counting chart on paper, following a design painted on the fabric or even working freehand. The basic embroidery stitches used in Phulkari can be categorized into three types depending on their formation

FLAT STITCHES	**LOOP STITCHES**	**KNOTTED STITCHES**
RUNNING	CHAIN	FRENCHKNOT
BACK	LAZY DAISY	BULLION
STEM	FEATHER	COLONIAL
SPLIT	FLY	CORAL
SATIN	BUTTON HOLE	
LONG & SHORT	FISHBONE	
COUCHING		
CROSS		
HERRINGBONE		
CHEVRON		
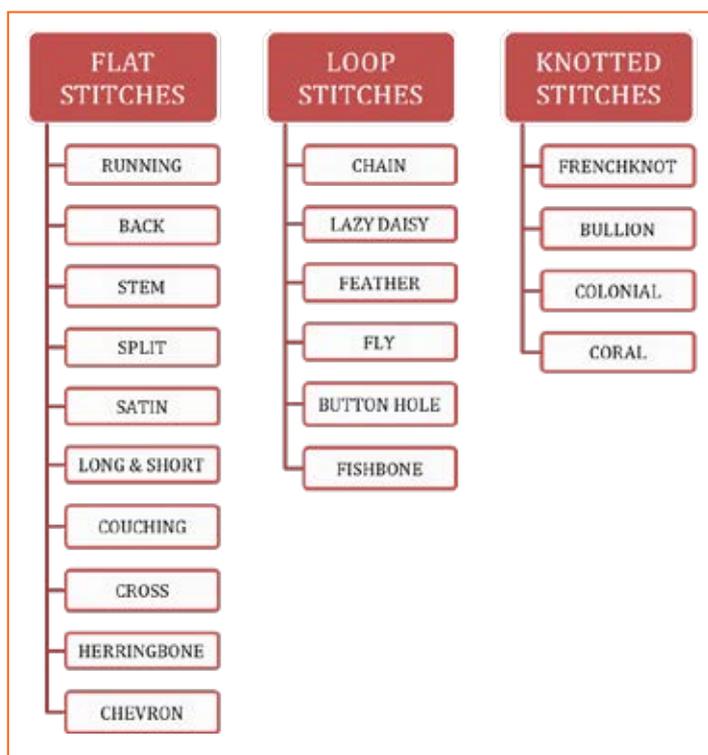
Fig.4.3.7: Phulkari Stitches

Types of Flat Stitches

S. No.	Type of Flat Stitches	Uses	Illustration
	Running Stitch Running stitch or straight stitch is the basic stitch in hand-sewing and embroidery, on which all other forms of sewing are based on. • Work from right to left. Bring thread up at 1 then down at 2, up at 3 and down at 4 and continue. • The spaces between the stitches can be the same length as the stitches or shorter for a different look. Take several stitches on needle before drawing it through.	Outlining, straight and curved lines.	

	Back Stitch Backstitch or back stitch and its variants stem stitch; outline stitch and split stitch are a class of embroidery and sewing stitches in which individual stitches are made backward to the general direction of sewing. • Bring needle to right side and repeat. • Work from right to left. • Bring needle up at 1 and back down at 2. • Move left and bring needle up at 3, then back down at 1. • Continue stitching.	Outlining, straight and curved lines	
	Stem Stitch An embroidery stitch, derived from backstitch, in which each stitch overlaps the previous stitch to one side, forming a twisted line of stitching, with the thread passing below the needle. • Work from left to right. • Bring needle up at 1 and down at 2. • Bring needle back up halfway between 1 and 2 at 3, just slightly above the first stitch. • Be sure to keep thread below the needle. • Continue stitching along line, keeping stitches small and uniform.	Outlining, straight and curved lines, stems for plants, filling if rows are stitched closely together. Creates a rope like appearance.	
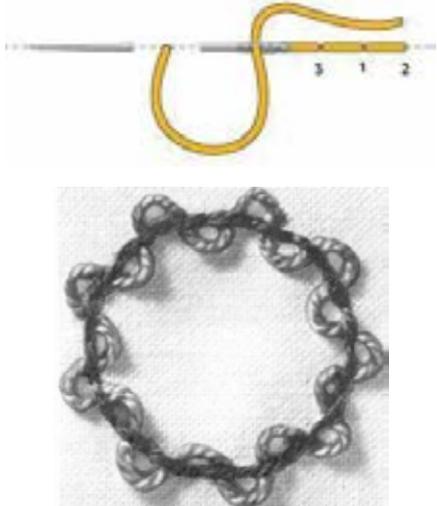
	Split Stitch An embroidery stitch, derived from backstitch, in which each stitch is formed by splitting through the previous stitch, forming a chain-line formation. • Work from left to right. Bring needle up at 1 and down at 2. • Bring needle back up at 3, splitting the center of the previous stitch. • Take needle down at 4 and then back up at 2. • Continue stitching.	Outlining, straight and curved lines, filling a shape by working rows closely together.	 Split Stitch
	Long and Short Stitch Long-and-short stitch is a variation of satin stitch which is used for fine shading; in the first row of satin stitches, every other stitch is half the length of its neighbours. • First, work a row of alternating long and short Satin Stitches. Keep the upper edge of the design line even. • Next, work a second row of long even length stitches into the short stitches of the first row, passing the needle through the tip of the stitch above. • Continue stitching rows until the shape is nearly filled and the last row of long stitches are worked along the bottom of the design line. • Stitch the last row with short stitches to fill in the open area along the bottom.	Filling of larger shapes especially when colour shading is desired.	
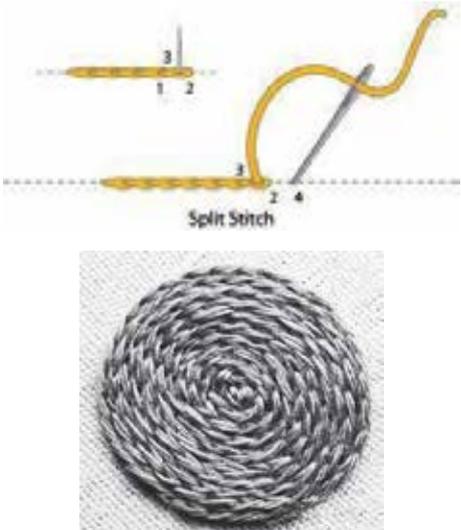
	Couching Stitch Couching technique involves laying of yarn or other materials across the surface of the ground fabric and fastened in place with small stitches of the same or a different yarn. This stitch involves two threads: a thicker foundation thread, and a thinner thread called the couching thread. • Bring foundation thread onto the front and place along the design line. • Bring the couching thread up under the foundation thread and make a tiny stitch over the thread, going back into or very close to the entry hole.	Outlining shapes, straight and curvy lines, spirals, bold dimensional accents, decorative borders.	
	Cross Stitch Cross-stitch is a popular form of counted-thread embroidery in which X-shaped stitches in a tiled, raster-like pattern are used to form a picture. • Stitching from left to right, bring needle up at 1, down at 2, then up at 3 and down at 4. • Continue stitching across to end of line. • Start back stitching from right to left, make crosses by bringing the needle up at 5 and down at 6. • Continue until all crosses have been stitched.		
	Herringbone Stitch A herringbone stitch is a needlework stitch used in embroidery, resembling the bones extending from the spine of a herring fish. • Work from left to right. Bring needle up at 1, and down at 2. • Bring needle up at 3 and down at 4 to create an elongated cross stitch. • Bring needle up at 5 and continue.	Border, edging, can be stitched over a ribbon or braid to hold it down.	
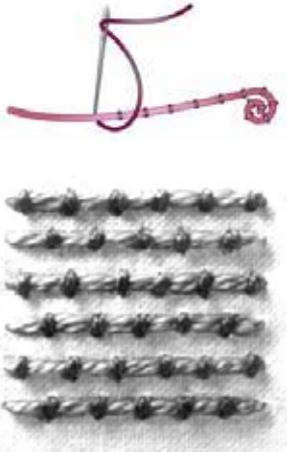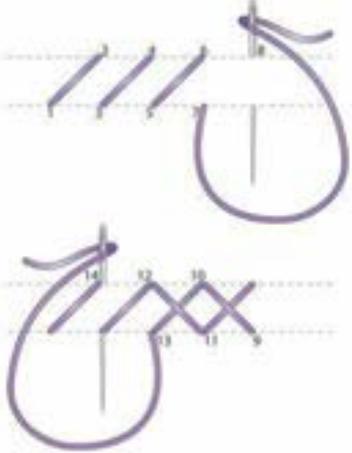
	Chevron Stitch	Border, edging, can be stitched over a ribbon or braid to hold it down.	
	Chevron stitch is a line and a filling stitch which you can work on even weave or plain weave fabrics. It makes a decorative border with a zigzag design which is worked from left to right. • Bring needle up at 1, down at 2. • Bring the tip of the needle back through the fabric halfway between 1 and 2 at point 3. • Bring the needle up to 4 and make a backstitch by bringing your needle up from 5 down at 6. • Bring the tip of your needle back through the fabric halfway between 5 and 6 at point 7. • Bring your needle down at 8 and repeat the stitching sequence.		

Fig.4.3.8: Flat Stitches - Phulkari

Types of Loop Stitches

S. No.	Type of Flat Stitches	Uses	Illustration
	Chain Stitch Chain stitch is a sewing and embroidery technique in which a series of looped stitches form a chain-like pattern. • Work from top to bottom. • Bring needle up at 1 and then reinsert needle in same hole, forming a loop. • Bring needle up at 2 and pull thread to tighten loop until desired shape is achieved. • Repeat multiple stitches to create a chain. • To end the row, make a small stitch over the last loop to hold it in place to secure thread on backside.	Outlining, straight and curved lines, filling if rows are stitched closely together.	

	Lazy daisy stitch (Detached Chain Stitch) Lazy daisy is an embroidery stitch formed by an elongated loop or a long chain stitch held down at the free end by a small stitch. • Come up at A and back down in the same hole or right next to point A, forming a loop on the front side. • Bring needle up at B and pull thread to shape loop into desired shape. Pulling tighter creates a straighter looking stitch, while a looser thread creates a more rounded loop.	Stitch in a circle to create flowers, single stitches can be leaves.	Lazy Daisy Stitch
	Feather Stitch Featherstitch is an embroidery technique made of open, looped stitches worked alternately to the right and left of a central rib. • Work vertically, from top to bottom. • Bring needle up at 1 and back down to right at 2, leaving a loop on the front. • Bring the needle back up at 3 and pull thread to shape loop as desired. • Insert the needle to the right of 4 at 5, leaving a loop of thread on the front. • Bring needle up at 6 and pull thread to shape loop. • Take next stitch to the left and continue stitching. • To finish, take a small stitch over the last loop.		Feather Stitch
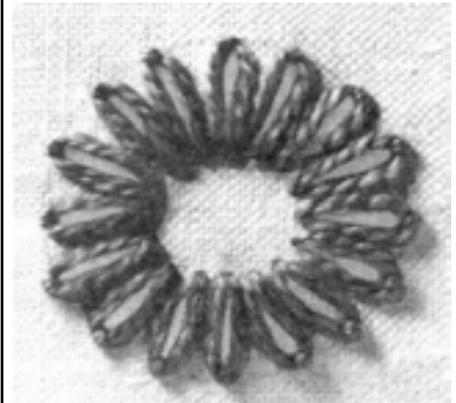
	Fly Stitch Fly stitch is also known as 'Y' stitch, and open loop stitch. Fly stitch is worked easily since it is made up of a V-shaped loop which is then tied down by a vertical straight stitch. • Bring needle up at 1 and down at 2, leaving a loop. Come up at 3 and with the needle over the loop, pull the thread to shape a V. Go down at 4 to anchor the V shape.	Stitch in rows for edging or singly for accents, plants and foliage, decorative lines, interesting filling.	
	Button hole Stitch Buttonhole or blanket stitch is a looped stitch used to strengthen and secure the edge of a material, as around a buttonhole. Buttonhole stitches catch a loop of the thread on the surface of the fabric and needle is returned to the back of the fabric at a right angle to the original start of the thread. • Work from left to right. Bring needle up at 1, down at 2 and up at 3, keeping the thread looped under the needle. • Pull thread through and shape stitch as desired. Repeat multiple stitches until complete.	Straight and gently curved lines, borders and finishing edges.	
	Fish Bone Stitch Fish bone stitch is a decorative stitch, used for filling in patterns such as leaves and petals and making decorative borders. Each stitch is worked from outer edge to the center line. • Bring the needle at (a) and insert to point (b) again bring needle up at point (c) and insert at point (d) covering the base of the first stitch. Continue the stitches from side to side by overlapping the base of the previous stitch until the design is filled.	Decorative filled-out designs, patterns and borders.	
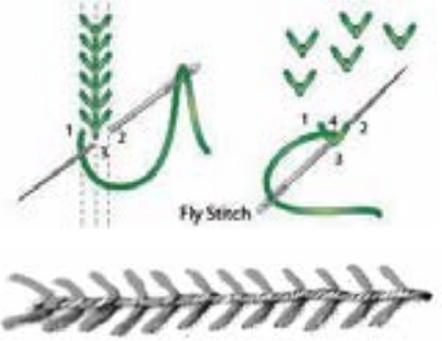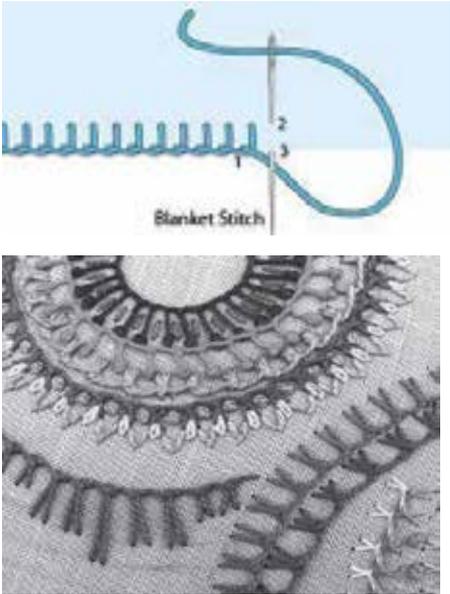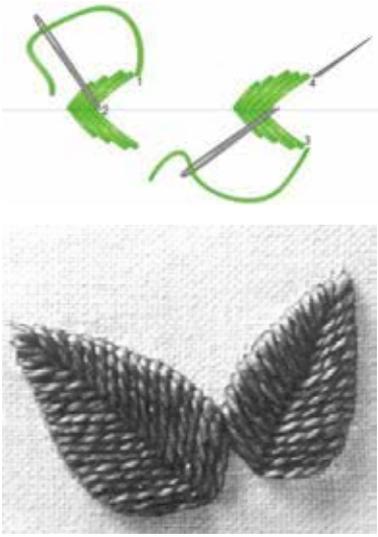
Fig.4.3.9: Loop Stitches - Phulkari

Types of Knotted Stitches

S. No.	Type of Knotted Stitches	Uses	Illustration
1.	**French knot Stitch** French knot is a decorative embroidery stitch made by looping the thread two or more times around the needle, which is then inserted into the fabric. • Bring needle up at 1. • Hold thread taut with other hand and wrap the thread twice around end of the needle. • Gently pull the thread so that the wrapped threads tighten and while holding it taut, insert the needle next to 1. Pull thread through onto the backside until the knot is formed and lies securely on the surface.	Decorative dots, filled out flower centers, leaves, plants, eyes.	
	Bullion knot Stitch Bullion is a decorative stitch in embroidery made by winding the thread several times around the needle before sewing a backstitch. • Make a back stitch, the length of the bullion knot required. • Bring the needle out at 1, but do not bring it out all the way. • Twist the thread around the needle point, as many times as is necessary to equal the length of the back stitch. • Holding the left thumb on the coiled thread, turn the needle back to 1 and insert it in the same place. Pull the thread through until the bullion knot lies flat.	Decorative dots, leaves, plants	
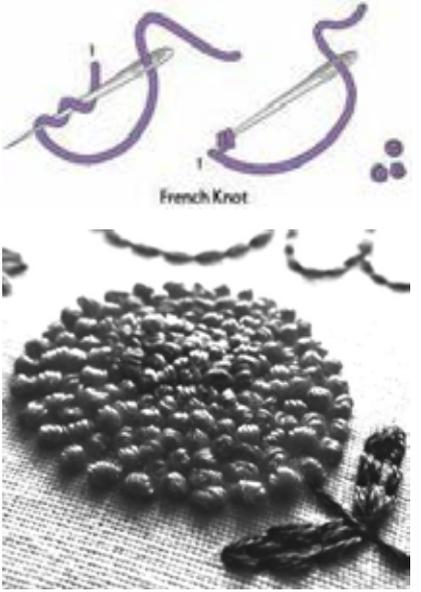
	Colonial Knots	Use alone as decorative accents, or stitch closetogether to form lines and or fill in shapes.	
	Colonial knots are a kind of surface knots used in embroidery made by wrapping the thread around the needle with the tail of the thread towards the eye of the needle (this is opposite of the French knot, with the tail wrapped towards the tip of the needle).		
	• Bring need up through fabric and wrap the thread up, over and behind the needle forming a figure 8 around the needle.		
	• Insert the tip of the needle back through the fabric, close to where it first came up, but not in the same hole. Pull the thread carefully until a knot is formed, then push the needle to the back and pull the thread through.		
	Coral Stitch	Decorative borders, foliage, plant stems.	
	Coral stitch is an old embroidery stitch which creates a line that looks like a row of knots and is used for outlines and follows a curved detail well.		
	• Working from right to left, hold the working thread to the left of the starting point (or the last stitch).		
	• Insert the needle into the fabric above the working thread and bring the tip of the needle out just under the thread.		
	• Wrap the thread around the needle from left to right and pull the needle through the resulting loop.		

Fig.4.3.10: Knotted Stitches - Phulkari

4.3.3 Zari

The word "Zari" comesfrom the Persian word "Zarkas", which means Gold Zari Embroidery. Zari embroidery art was brought to India by Persian migrants between 1700-1100 BC.

In Zari work, lustrous metallic wire, traditionally silver wire coated or plated with gold, along with silk threads, beads, beetle wings, precious stones, etc. were used for embroidery, unlike other embroideries where floss silk/cotton/wool yarns were used. Many of the folk tradition of zari work also use mica, beads and cowries as additional embellishments. But the use of semi-precious stones was restricted to zari work because of its opulent style.

4.3.3.1 Zari Designs and Motifs

The Design patterns of zari embroidery are distinguished in terms of material used and types of work. Some of the embroidery style and their material details are as follows:

S. No.	Types of Embroidery	Description	Material used
	KAMDANI	This is a light needle work done on light material like scarves, veils, and caps using flattened wire. Ordinary thread is used and the wire is pressed down with the stitching producing a satin-stitch effect. The effect produced is glittering and is called HazaraButti (thousand lights). A cowrie shell is rubbed over the embroidery to flatten and burnish the metal strips. Kamdani generally refers to the work done on muslin, silk and other fabrics. This technique remained more popular on the dresses, coverlets, caps and many miscellaneous items.	Mukaishis used in this embroiderywhich is a flat wire which cannot be threaded and is stitched on to the material directly.
	GIJIA(Karchobi)	It is a form of raised Zari metallic thread embroidery created by sewing flat stitches on cotton padding. The technique is commonly used for bridal and formal costumes as well as for velvet coverings, tent hangings, curtains and the coverings of animal carts and temple chariotsetc. Traditionally with badla was calledKarchobi.	Gijia wire is used to highlight the motifs which look like a coiled wire.

	KASAB – TIKI (karchobi)	Kasab –tiki is done byusing gold or silver threads and spangles (sitara). The stitches used in this embroidery are running & chain with which outline iscreated and filled with the sequence (tiki). It gives the shimmer look and is also very light in weight.	Kasabzari and Tiki
	ZIK-CHALAK (Karchobi)	Zik- chalak is the combination of coiled wire zik and zigzag wire chalak which is tucked from one point to the other to form a three dimension motif on padded cotton stuff.	Salma &Chalak
	BHARAT – KARACHI (karchobi)	Using pieces of cardboard to provide a raised body for the design, the material being used as padding on fabric when embroidery is in progress. The image showsapadded motif of a peacock raised by inserted foam and stitched over by thread. Nakshi and Gijia wires are used here to give the finished look of embellished motif.	Nakshi&Gijia

	ZIK –TIKI (karchobi)	Uses twisted coiled wire (zik) and spangles (Tiki). The image represents the opulent intricacy of the combination of Zigzag coiled wire and sequence (Tiki) grounded on to silk velvet. This embroidery is usually very dense.	Sitara&Nakshi(zik)
	ZARDOZI	This is a heavy and more elaborate embroidery work which uses varieties of gold coiled wire like dabka, salma-sitara, gijai, badla, katori, kora, chikna, spangles, beads, seed pearls, and gota. The design comprises of heavy miniature floral style of Mughal era. The material on which this kind of embroidery is done is usually heavy silk, velvet and satin.	Dabka, salma-sitara, gijai, badla, katori, kora, chikna, spangles, beads, seed pearls
	KATOKI –BEL	This is a border pattern made on stiff ground fabric and the whole surface is filled with sequin edging and dabka, kasab&sitara. A variation of this border technique is lace made on net and filled with zar stitches and spangles. The details of dabka&tiki are articulated to make a heavy dense design used typically in border of the sari, lehenga and other dress materials.	Sitara,Dabka & kasab

	MUKAISH	This is one of the oldest styles and is done with silver wire or badla. The wire itself serves as a needle, piercing the material to complete the stitches. A variety of designs are produced in this manner. It is also known as the Fardikakaam in Lucknow. In Gujarat and Maharashtra it is calle Badla.	Mukaish
	TILLA or MARORI WORK	This is the kind of embroidery where gold thread Tilla is stitched on to the surface with a needle using the thin Zari or silk threads leaving no space between the threads. This technique is generally used in making the motifs at the centre which gives it an antique look. It takes time to make it perfectly. Work is delicately done to achieve it.	TillaZari
	GOTA WORK	In the Technique of Gotatukdi, gota is cut into shapes such as the gamla (flower pot), kairi (mango) and Champak flower, and appliqued onto a base fabric embellished with embroidery techniques such as Zari and Aari. Gotapatti. It involves folding of tapes into basic rhomboid units, referred to as patti or leaves and combining them to create elaborate motifs and patterns that are sewn onto garments.	Zari lace & sitara
	KINARI WORK	A small variation is kinari work where the embellishments are done only at the edges in the form of tassels with the combination of beads, silk yarns & studded pearls.	Beads & stones

Fig.4.3.11: Design/Motifs - Zari

4.3.3.2. Zari Stitches

The thread stroke formed on the front side of the fabric surface by the movement of the embroidery needle from the backside of the fabric to the front side and back to the back side is known as an embroidery stitch. Embroidery stitches are the lowest units in embroidery. Embroidery patterns are formed by doing many embroidery stitches, either all the same or different ones, succeeding a counting chart on paper, following a design painted on the fabric or even working freehand. The zari embroidery stitches can be categorized into two types depending upon usage of normal needle (flat stitches) and Aari hooked needle which are as follows:

FLAT STITCHES

LOOP STITCHES

RUNNING

CHAIN

STEM

SATIN

COUCHING
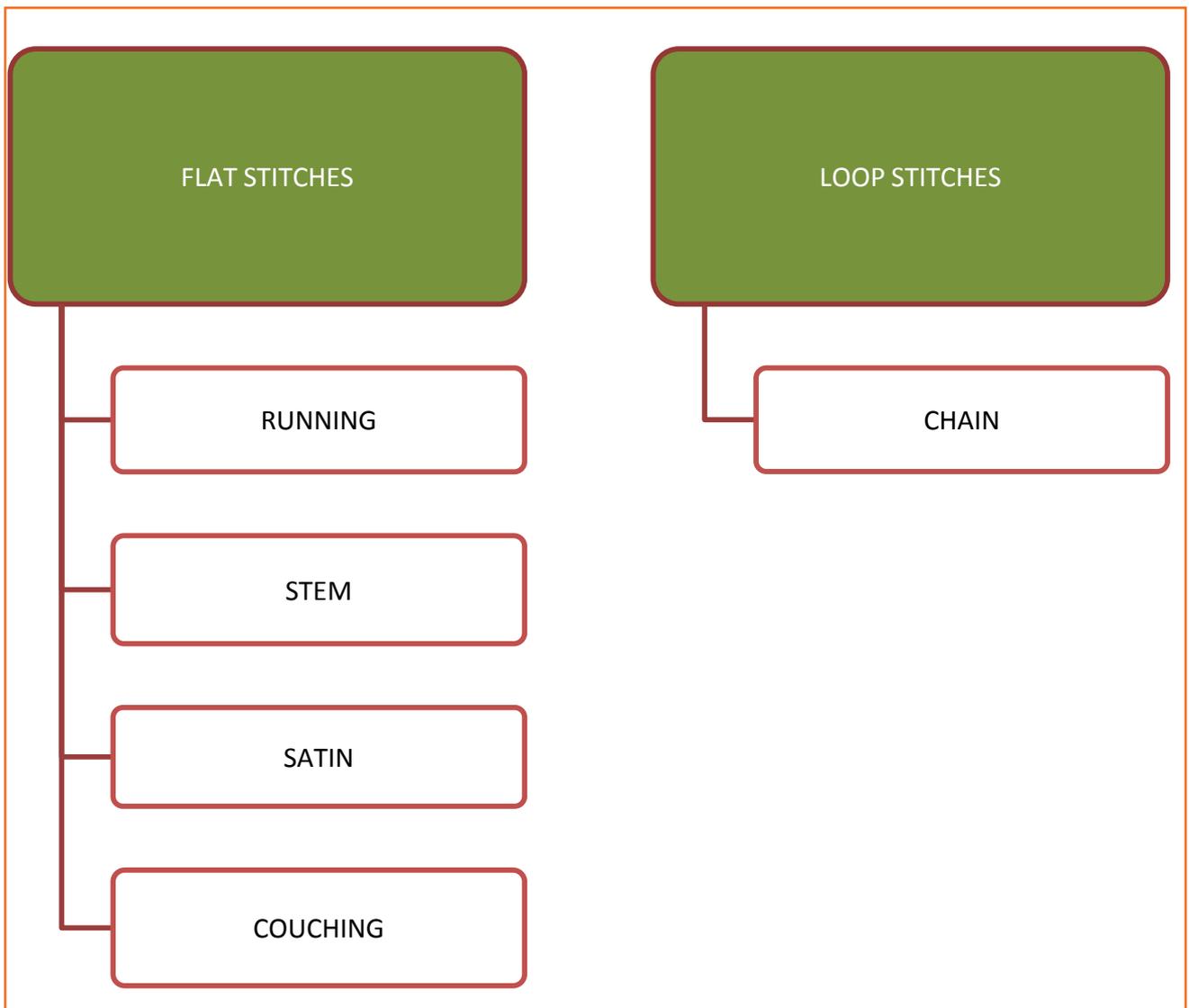
Fig.4.3.12: Zari Stitches

Types of Flat Stitches

S. No.	Types of Stitches & Needle Used	Method	Illustration
1	**Laid /Couching** Couching technique involves laying of yarn or other materials across the surface of the ground fabric. This stitch involves two threads; a thicker foundation thread and a thinner thread called the couching thread. The needle used is #9 & #10 generally.	Pull the needle from A to B and take the long stride B-C, D-E like put G-F, H-J-K. Then for cross-stitch couching, insert the needle at the corner end of dissection of threads take it from above A to B inserting the needle at other end corner C and finishing the loop at D. Continue to the other pair of threads	
	Satin: A satin stitch or damask stitch is a series of flat stitches that are used to completely cover a section of the background fabric. The needle used is #9 & #10 generally.	Pull needle through to and front at A. Make single straight stitches, inserting the needle at B, out again at C. Keep stitches very close together, and continue to fill the area or shape.	
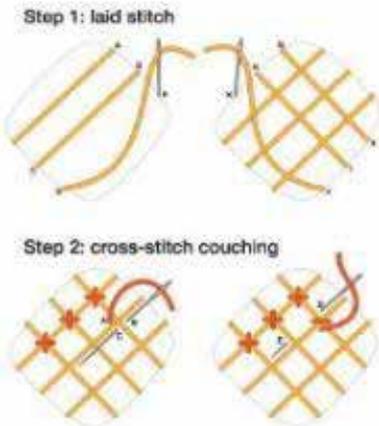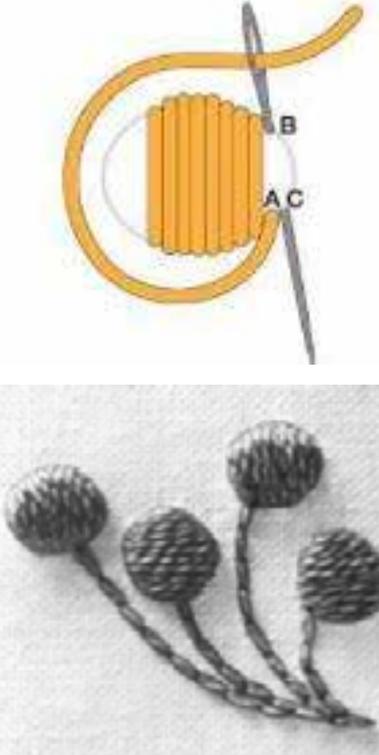
Fig.4.3.13: Flat Stitches - Zari Stitches

Types of Loop Stitches

STEP	Method	Illustration
1	Take a thread with one end knotted and make a loop under the fabric to be hooked in the needle's end.	
2	After being hooked in the needle's end; pull the needle upward.	
3	Pull the needle upward to make a loop and hold the thread gently underneath.	
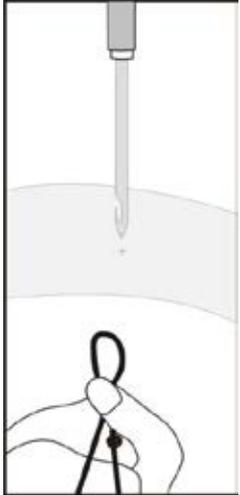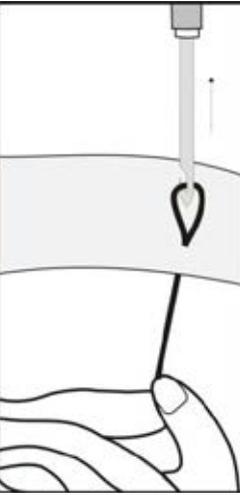
4.	Rotate the needle in opposite direction to move forward.	
5	Move forward to insert the needle in the another spot; hold the threads gently underneath.	
6	Insert the needle and hold the threads gently to make a loop around the needle.	
7	Hook the threads into the needle's end.	
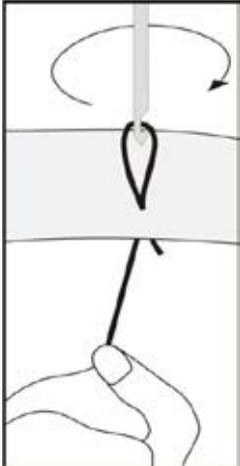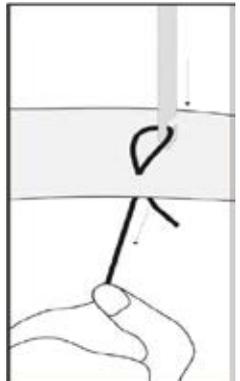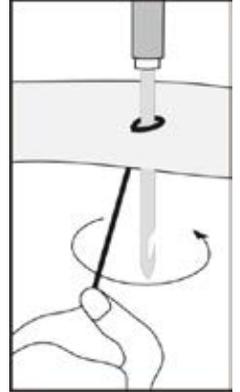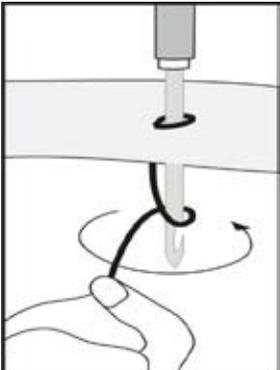
| 8 | After the thread is hooked; rotate the needle in the opposite direction and move the needle upward. | |
| 9 | After moving forward and repeating the same step at another spot getting the chain stitch,hold the thread gently underneath. | |
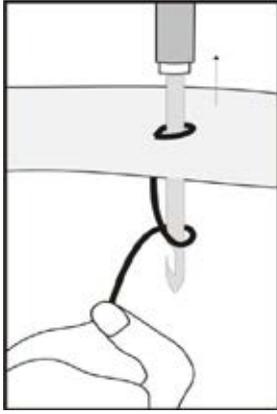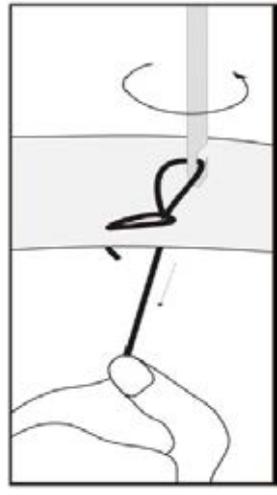
Fig.4.3.14: Loop Stitches - Zari Stitches

UNIT 4.4: Embroidery Defects and Their Rectification

Unit Objectives 🎯

At the end of this unit, participants will be able to:

1. Identify common embroidery defects.

2. Demonstrate how to rectify defects.

3. Describe some important tips for good embroidery.

4.4.1 Common Embroidery Defects

Embroidery defects arise because of faults and problems in the stitches, or fabrics or design, or in all. Some of the basic embroidery defects are as under.

Fabric damage or needle holes

These are caused because of the following reasons:

• The use of incorrect type and size of needle

• Adding a lot of stitches at the same spot

• Not tearing the backing properly

• The fabric getting damaged when the stitches are pulled out

• The damage caused on the fabric because of recurring needle penetration, especially around the corners of the embroidery

Fabric gapping

This defect occurs when the fabric gaps are visible through the embroidery design in the background, either in the middle part of the design or on the edges.

Missed trims

When threads are left on the front side in the embroidery design between the designs, it is called missed trims.

Improper placement of embroidery design

This is a result of the incorrect tracing of the design.

Poor registration of design

When the embroidery design and stitches are not arranged correctly, then this defect can be seen.

Bunching at the corners

When the corners of the embroidery design are not crisp because of gathering up of the thread at a point, it is known as bunching.

Thick embroidery

This defect can be seen when the embroidery is very dense or thick in some places.

Poor stitch density

When the stitch is not dense and done quite apart, the base fabric is visible in the embroidery and is called as poor stitch density.

Poor hooping

Due to poor hooping, the fabric around the embroidery gets hazy or wrinkled, and thus, stops to lay flat on a fabric surface.

4.4.2 Rectifications of Defects

- Sometimes, the spacing does not look correct or some area of the embroidery is unacceptable. Generally, it does not work to reverse the needle out or take the needle out on the backside. If just some stitches are involved, remove the needle and use the blunt end of it to lift out the thread from the offending stitches.

- Rethread the needle and retry. Check the hoop adda and its tension; keep it firm to avoid fabric ruches and use proper backing, like fusing paper, before starting the embroidery.

- Wherever the larger area of stitching of beads is involved, the most time-efficient way to repair the damage is to remove the beads. This is done by cutting the threads in several locations.

- Hoop/adda should not be stretched too much; otherwise, it will damage the fabric. Hoop marks should always be ironed after completion of embroidery work.

- Thread thickness should be chosen as per the base embroidery fabric to avoid fabric damage. Threads should also be selected according to the designs.

- Use pointed small and sharp scissors carefully to cut the trims and extra loops. The leftover threads can be trimmed or glued at the wrong side of the completed embroidery product.

- After understanding the defects, like fabric damage, gapping, thick embroidery, etc., the students can rectify them by doing embroidery stitches correctly. Ensuring the quality of embroidery near perfection in the final product is essential for the overall look of the garment/product.

4.4.3 Tips for Good Embroidery

- Before starting the work on embroidery, wash hands with soap so that the fabric or the material used remains as clean and retains its luster.

- Ensure that the embroidery hoop (ring or frame) is fitted properly before starting the embroidery work. For holding the fabric tight and stretched, wrap a ribbon around the inner ring, if the outer ring is loose.

- The thread should not be very long (i.e. not more than 17 inches). A very long thread pulled too often through the fabric tends to coil or fray towards the end.

- Avoid using a knot when starting or ending an embroidery thread. Bring the needle straight up and start the embroidery, holding the thread on the wrong side of the fabric and hiding it under the working stitches. Remember that it should not be pulled so as to avoid damaging the stitches.

- The finished embroidery work should be neat and even, on the wrong as well as the right side.

- Students in the learning stage can make knots while doing embroidery.

- Make the embroidery in a way that the shape of the design is maintained properly. It should be done gently and the working thread should not be pulled too much. Use small scissors to cut the threads.

- Avoid putting pressure over the fabric, otherwise it may become loose in adda or frame.

- Keep all the embroidery tools and supplies handy in a box.

- Wrap the remains of the yarn and the thread on a piece of cardboard so that they can be reused.

- Keep the embroidery ring in a plastic bag so it doesn't get dirty.

- Cover the incomplete embroidery on the frame with a clean cloth to keep safe and clean.

- Do not use very hot iron over the embroidered portion to avoid damaging it.

- Do not dry embroidered fabric in sunlight; otherwise the colours will fade away.

- Place the samples of the embroidery over the canvas. Attach in the file to preserve them.

- Keep zari work (silver or golden) thread away from perfumes or fragrance; otherwise, they become discolored.

- Practice embroidery continuously to become more efficient and to be able to do a more intricate embroidery work in less time.

- Carry out embroidery, preferably in the daylight, to avoid strain on the eyes.

- Use fast coloured threads for embroidery; otherwise, it will spoil both the embroidery as well as the fabric.

- Use lining material or backing as per the nature of the fabric to be embroidered in order to give it strength, stability and durability.

Use needles of appropriate number to embroider.

- Chenille i.e., a sharp, pointed needle with thin and long eye is appropriate for stem stitches, lazy daisy stitches, straight stitches, mirror work, etc.

- Crewel i.e., a sharp, pointed needle with round eye is used for French knot, bullion knot, etc. A round eye needle is convenient to slip the yarn wrapped around it.

- Tapestry needles are blunt at their point or tip. They are used for matty cloth with cross stitch, open work embroidery, wool embroidery, etc. As the point of the needle is blunt, it does not draw or stretch the thread from the fabric.

Industry Visit

The purpose of visiting an apparel manufacturing unit is to get hands on knowledge about various processes involved in the work of an Hand Embroiderer. During the visit you have to interact with Hand Embroiderers and supervisors to understand how work is done in industry. Make sure that you keep a notebook handy and note down any important points that come up during your interaction at the apparel manufacturing unit. When you go to an apparel manufacturing unit, you should:

- Precisely understand the concept of different embroidery techniques in India like; Chikankari, Phulkari and Zari and also their designs and motifs.

- Ask questions to Hand Embroiderers/supervisors if you have any query.

Resources ⚙️

Scan the QR codes or click on the link to watch the related videos.

Descriptions	QR Codes
3D Rose Flower Embroidery	 https://youtu.be/nlGX5a919t8
Mirror Work Stitch	 https://youtu.be/idd-aIUqCkI
Make a tapestry	 https://youtu.be/47-feKAVF_c

Exercise

1. Which of the these is / are common embroidery defect?

   a) Fabric damage or needle holes

   b) Fabric gapping

   c) Poor registration of design

   d) All of the above

2. How defect can be avoided?

   a) Ensure that the embroidery hoop (ring or frame) is fitted properly

   b) Avoid using a knot when starting or ending an embroidery thread

   c) Avoid putting pressure over the fabric

   d) All of the above

3. A "document" is a collection of data, regardless of the medium on which it is recorded, that generally has permanence and can be read by humans or machines.

   a) True

   b) False

4. Raw Material Inspection is a process of

   a) Checking the Fabric

   b) Checking the equipments

   c) Checking the Thread

   d) All of these

5. Creative decorative designs are_____.

   a) Mirror work

   b) Tapestry stitch

   c) Shadow work

   d) All of these

6. Cut work is used to decorate _____.

   a) Table Linen

   b) Fine hand towels

   c) Curtain

   d) All of these

7. Cut work is usually done on _____.

   a) Silk

   b) Cotton

   c) Chiffon

   d) All of these

5. Contribute to Achieve Quality in Embroidery Work

Unit 5.1 - Contribute to Achieve Quality in Embroidery Work

Key Learning Outcomes 💡

At the end of this module, participants will be able to:

1. Familiarize with the product quality.

2. Coordinate with seniors and others.

3. Inspect stitched products against specifications.

4. Identify, mark and place rejects in the designated locations.

5. Carry out alterations.

6. Maintain workflow and meet production target.

7. Understand and inspect the possible defects.

UNIT 5.1: Contribute to Achieve Quality in Embroidery Work

Unit Objectives ◎

At the end of this unit, participants will be able to:

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3. Inspect stitched products against specifications.

4. Identify, mark and place rejects in the designated locations.

5. Carry out alterations.

6. Maintain work flow and meet production target.

7. Understand and inspect the possible defects.

5.1.1 Product Quality

What is quality? If a product fulfills the customer's expectations, the client are happy and consider that the merchandise is acceptable or even prime quality. If his or her expectations are not fulfilled, the client will consider that the merchandise is of low quality. This means that the quality of a product may be outlined as "its ability to fulfill the customer's desires and expectations".

Quality has to be outlined first off in terms of parameters or characteristics , that vary from product to product. for example, fora mechanical or electronic product these are performance, reliability, safety and appearance. For pharmaceutical merchandise, parameters such as physical and chemical characteristics, medicinal impact, toxicity, taste and period of time may be vital. For a food product they will embrace taste, nutritional properties, texture, shelf life and so on.

Fig.5.1.1: Quality

Fixing product specifications

A specification is the minimum demand according to that a producer or service supplier makes and delivers the product and service to the client. In setting specification limits, the following ought to be considered:

• The user's and/or customer's needs.

• Requirements relating to product safety and health hazards provided for in the statutory andregulatory requirements. Requirements provided for in national and/or international standards.

• The competitor's product specifications, in order to achieve selling advantages.

• In planning the merchandise, the capability of processes and machines ought to be kept in mind.

• it is additionally necessary to keep up a balance between cost and value realization. The clearer the specification , the higher the possibility of making and delivering quality merchandise. Preparing product design.

- The specifications and drawings created by the designer should show customary} standard demanded by the client or marketplace in clear and precise terms.

- every dimension ought to have realistic tolerances and alternative performance necessities.

- Product quality ought to have precise limits of acceptability so the production team will manufacture the product strictly per specification and drawings.

To achieve the above, those accountable for design, production and quality ought to be consulted from the sales negotiation stage onwards. the general design of any product is created from several individual characteristics. For example these could be:

- Dimensions, like length, diameter, thickness or space.

- Physical properties, like weight, volume or strength.

- Electrical properties, like resistance, voltage or current.

- Look, like end, color or texture; practical qualities, like output or metric linear unit per liter.

- Effects on service, like style, feel or noise level.

Manufacturing drawings and specifications are prepared by the designers and these ought to illustrate to the production team exactly what quality is needed and what raw materials ought to be used. Preparation for manufacture once the design, together with the producing drawings, has been reviewed and finalized, it is timeto plan for manufacture.

This will include the following steps:

1. **Preferring the strategy of manufacture:** ways should be devised that let the operators and processes to make the merchandise within the fastest, best and most foolproof approach, as well as preparation of producing instructions, putting in procedures, listing numerous operations then on.

2. **Providing the mandatory machines, plant, tooling and alternative equipment:** Everything that's needed for manufacture should be elect, taking care that each one the weather are capable of achieving the quality of quality demanded.

3. **Getting satisfactory raw materials:** nobody will build a decent product from unsatisfactory raw materials,so each material should have a particular written shopping for specification in order that the business department will buy precisely what's needed. typically purchasers ar expected to shop for from suppliers United Nations agency are assessed and approved by them and once provides arrive the products ought to be checked before acceptance into stores. Quality necessities and producing processes ought to be mentioned with the suppliers, also because the inspection activities to be dole out by the client on the products on arrival.

4. **Getting and coaching operators:** Operators United Nations agency ar willing and ready to do the add a satisfactory manner must be chosen and given no matter coaching they have.

5. **Designing review and work quality control:** Plans for review activities ought to be ready, proper work places provided for review employees, written review.

5.1.1.1 Guidelines

A guide for small and medium-sized enterprises procedures ready, inspection instrumentality provided, checking and calibration of examination instrumentality planned for, inspection personnel selected and trained and prepilot and pilot runs carried out. One ought to never conceive to solve a high quality drawback by closing additional inspections.

The producing will begin only if coming up with|the look} and planning are completed. If the look is carried out systematically, things ought to run smoothly. during manufacture the subsequent are the foremost common factors that can affect quality:

- **Set-up:** Some processes, like punching, cutting, printing and labelling, are thus consistent that, if the initial set-up is correct, the entire ton can change to the specifications. However, the initial set-up should be checked by carrying out first-piece inspection.

- **Machines and tools:** From time to time changes will occur in machine or tool settings, which may then cause defects. Processes of this kind include machining, resistance welding and filling. Here it is necessary to carry out periodic checks by patrol inspection.

- **Operator:** There are some processes wherever the result depends on the ability and a focus of the operator, suchas welding, hand fastening and painting processes. For such processes it is necessary at the manufacture planning stage for the operator's operating strategies to be determined upon.

- **Materials and components:** it is vital to ensure the standard of raw materials and components by undertaking regular checks on the suppliers' processes and additionally wherever necessary by carrying out incoming inspection.

The following are obvious possibilities:

- The shop-floor operators had no clear plan what standard of quality was needed.

- the method was such that it was terribly difficult to induce the work right, but very simple to induce it wrong.

- The machine and instrumentality were incapable of achieving the tolerances needed.

- The incoming materials and components were unacceptable.

- The operators were untrained and not up to the job; Shop-floor internal control was either not properlyplanned or not properly executed, or both.

5.1.1.2 Coordination

It is obvious from the on top of steps that everyone in the company, that is, the salesmen, designers, purchasing,stores and strategies employees, plant engineers, jigs and tool personnel, production planning and production employees,operators, inspection and testing employees, packaging, dispatch and so on, square measure answerable for product quality.Indeed, quality is everybody's business. unfortunately, if care is not taken, it winds up being nobody's business.It is so necessary to ensure that everybody is quality-conscious which all of them work along on matters related to quality.

5.1.2 Ensure Embroidered Products meet Specification

It is essential to analyse the meet specification in terms of labels and trimmings. There should be various quality check points and before sending the product for final finish it should be thoroughly crosschecked that it has correct labels them. The stitched products should be checked in sewing section and well as printing, labeling or finishing section as well.

- **Matching Shade of Thread:** It is essential that the thread's colour should match with base fabric and also according to the design specification

- **Matching Fabric:** It is necessary to ensure that the fabric used in embroidery is according to the type of embroidery needed, type of thread and needle used.

- **Neatness of Embroidery:** One has to ensure that the embroidery is free from any visual defects like needle holes in fabric, thread not properly cut etc.

- **Colour bleeding:** The fabric or thread should be checked for colour bleeding. In this test, the fabric and thread are washed to ensure that there is no colour bleed

- **Measurement of Stitches:** The stitches used in embroidery should be as specified in the design specification. The stitches should be evenly spaced and their width/thickness should also be even or according to specification

- **Labels and Tags:** If there are any labels or tags, they also need to be checked. Texts printed on hang tags, price tags, brand labels, case labels etc. play a vital role. It is significant to ensure that all the material and details must match with the fabric type. The fabric type and the label should not mismatch. Also, the content or text used should be only the one which is approved by the concerned authority. Also, the fibre content printed in care label must match with test report made for fibre content.

5.1.3 Identify Mark and Place Rejects in the Designated Locations

- Always examine your working surroundings and then the work station where you are working. Inspect if there are any unwanted hazardous materials scattered around your work station or the work area.

- Keep the work area clean and tidy all the time, once this is accomplished look for any unwanted or faulty item.

- While looking for a faulty item make sure to identify it properly, mark it clearly and label it promptly as rejected.

- Place the rejected item in the assigned or designated locations only.

- Place the fabric or other rejected items which are torn, damaged broken, stained etc in the rejection box (designated area) of the work-place.

- If we talk about garments in particular then it can be said that the garment can be rejected after been tested and declared failed in terms of conformance and specifications.

- Always check the raw-materials to identify if there are any signs of discoloration or if there are any other defective signs present in the raw material, if yes label it as reject and take it to the designated location for all rejects and place it there.

- Tag items as rejected items so that if possible, they can be reworked on.

- Items tagged as rejects, should be disposed if they can't be re-worked on.

- Always maintain inspection records to compute level of quality control achieved.

5.1.4 Carry Out Adjustments and Alterations

Making a product which is of customer's choice and prospect is the best ways to run the business or an industry magnificently. Hence, it is important to make sure that the material used for making a product should be compatible with that product's specification. Product's accuracy and finishing always depends on what materials are been used on it, what quality fabric is it and are these matching the product's specification or not? Make sure to carry out alterations in the embroidered designs if they are not meeting the design specification.

Many times alterations are required when the fabric is not stitched properly i.e. it contains missing stitches also known as skipped stitches or staggered stitches etc. Below, some of the common issues discussed where the alterations might be required if they are not meeting the customer's requirements.

Some of the common defects which are found during the embroidery are as - incorrect stitch, uneven stitch width or gap, fabric bleed etc. After identifying the defects, it is important to carry out alterations, without a delay. Reworking on the defects is important however it is more important to understand why the defects occurred, so that it can be avoided in future.

5.1.5 Maintain Workflow and Meet Production Target

Here are some of the tips with which work should be carried out so that the work flow can be maintained and production target can be achieved:

- Fabric's pieces and lining must be pinned or sewn together as per the requirement and they should be set in such a way that they are ready for assembly.

- One production's work flow should not affect the work flow of other production, handling of material should be very careful to keep away material from the risk of damage.

- All the production sections should work in synchronization with each other i.e. trimming should work in a way that spreading and cutting can work in sync with stitching and stitching can maintain coordination with embroidery, printing and so on. By doing so, a production target and quality products can be produced.

- Working in sync can improve efficiency in work.

- Always sort your work in such a way that it is in readiness for assembly.

- Each production should sort and place their work in such a way that it can be easily used at the next stage of production for e.g. if you are working at embroidery section then the fabric's embroidery should be placed in such a right order that it should not be a problem for a person in a stitching operation to arrange and stitch the fabric.

- One must be thoroughly aware about the tools, settings and equipment that are required to work on and how to handle materials without damaging them. They should know what a finished product looks like, so that they can have perfection in their working.

- Make sure to check the materials available in the stock, if it is not sufficient inform the concerned department to arrange one; it should not disrupt the workflow of other production.

5.1.6. Embroidery Defects Checklist

S NO	Embroidery Defect Checklist
1	Does the embroidery have the proper registration?
2	Was the fabric hooped properly to minimalize alteration of the fabric that the pattern was sewn in to?
3	Was the embroidery design ranged and situated properly on the stitched product?
4	Does there appear to be extreme "pull" affecting "grin-through" or misrepresentation of the stitched pattern?
5	Are all points clean with corners finished properly?
6	Are any parts of the embroidery too colossal or thick?

7	Are there any filaments or thread that was not trimmed properly? Is there any fabric "grin through" or "gapping"?
8	Are stitches shaped appropriately (not too loose or too tight)?
9	Signs of looping or malformed stitches?
10	Signs of poor tension control?
11	Is there any reparation required, to the fabric caused by the needle size or too many stitches sewn in the same area of the pattern?
12	Extreme wrinkling or illustration of the pattern?
13	Are there unnecessary hoop marks that need to be steamed away?
14	Are there excessive hoop marks that need to be steamed away?

Fig.5.1.2: Defects Checklist

5.1.7. Documentation

A "document" is a collection of data, regardless of the medium on which it is recorded, that generally has permanence and can be read by humans or machines. Documents include both paper and electronic documents. A document is an amount of information on one or more related topics prepared for a specific purpose and presented as a unit. A document may be used in a printed form, Online form or a combination of the two. Examples of documents include: manuals, reports, proposals, letters, faxes and emails. Proper documentation of events is essential for providing the contemporary professionals and future generations the opportunities to know, learn, and benefit from the past knowledge and experience.

Fig.5.1.3 Documentation

Industry Visit

The purpose of visiting an apparel manufacturing unit is to get hands on knowledge about various processes involved in the work of an Hand Embroiderer. During the visit you have to interact with Hand Embroiderers and supervisors to understand how work is done in industry. Make sure that you keep a notebook handy and note down any important points that come up during your interaction at the apparel manufacturing unit. When you go to an apparel manufacturing unit, you should:

- Know about the production system.
- Inspect stitched products against specifications.
- Analyze how Hand Embroiderer:
    » Inspects stitched products against specifications
    » Carryout alterations
    » Sew and apply trims
- Also Understand the inspection and possible alteration.
- Ask questions to Hand Embroiderers/supervisors if you have any query.

Resources

Scan the QR codes or click on the link to watch the related videos.

Descriptions	QR Codes
Embroidery defects & their rectification	 https://youtu.be/Wt2iPKP3Wzo

Exercise

1. A "document" is a collection of data, regardless of the medium on which it is recorded, that generally has permanence and can be read by humans or machines.

   a) True

   b) False

2. Working in sync can improve efficiency in work.

   a) True

   b) False

3. What is quality?

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6. Maintaining Work Premises and Tools

Unit 6.1 - Maintain Work Premises and Tools

AMH/N1004

Key Learning Outcomes 💡

At the end of this module, participants will be able to:

1. Maintain hazard free work environment.

2. Maintain embroidery tools.

3. Adopt safe work practices.

4. Minimize waste.

5. Identify different cleaning substances.

UNIT 6.1: Maintain Work Premises and Tools

Unit Objectives

At the end of this unit, participants will be able to:

1. Maintain hazard free work environment.

2. Maintain embroidery tools.

3. Adopt safe work practices.

4. Minimize waste.

5. Identify different cleaning substances.

6.1.1 Maintaining Hazard Free Work Environment

Effective maintenance of work premises or housekeeping can remove many workplace hazards and help in safe and proper work. On the other hand poor housekeeping can result in accidents by concealing hazards that may result in injuries.

Housekeeping does not only mean cleanliness, it includes neat and orderly work areas, maintaining floors free of slip and hazards and removal of waste materials (e.g., threads, paper, pieces of fabric etc.) and preventing fire hazards. It involves giving attention to details like the layout of the workplace, aisle marking, the adequate storage facilities and maintenance. Good housekeeping also involves accident and fire prevention.

Effective housekeeping is a continuous process. It is not a hit-and-miss clean-up done occasionally. Irregular or last minute clean-ups may prove costly and ineffective.

6.1.1.1 Purpose and Benefits of Maintaining Hazard-free Workplace

Poor housekeeping or ill-maintained workplace can result in accidents like:

• Tripping over loose objects on floors, stairs and platforms

• Being hit by falling objects

• Slipping on greasy, wet or dirty surfaces

• Collision against poorly stacked items or out of place material

• Cutting or tearing of skin on projecting needles, wire or steel strapping

In order to prevent these hazards, a workplace must be maintained regularly. This may require a lot of efforts hand planning but the benefits are many.

Benefits of maintaining hazard-free work place

• Reduced handling for better flow of materials

• Reduction in tripping and slipping accidents

• Decreased fire hazards

- Decreased exposures to hazardous substances (e.g. broken needles, dusts, vapours)

- Better control of tools and materials, including inventory and supplies

- More efficient equipment clean-up and maintenance

- Better hygienic conditions leading to improved health

- More effective use of space

- Reduced property damage by improving preventive maintenance

- Improved morale

- Improved productivity (tools and materials will be easy to find)

6.1.1.2 Planning Workplace Maintenance

A good maintenance program plans and manages the orderly storage and movement of materials from point of entry to exit. It includes a material flow plan to ensure minimal handling. The plan also ensures that work areas are not used as storage areas by having workers move materials to and from work areas as needed. Part of the plan could include investing in extra bins and more frequent disposal.

Housekeeping order is "maintained" not "achieved." Cleaning and organization must be done regularly, not just at the end of the shift. Integrating housekeeping into jobs can help ensure this is done. A good housekeeping program identifies and assigns responsibilities for the following:

- Clean up during the shift

- Day-to-day clean-up

- Waste disposal

- Removal of unused materials

- Inspection to ensure clean-up is complete

6.1.2 Maintaining Tools and Equipment

Maintenance of tools and equipment used in embroidery like needles, threads, scissors, fabric etc. is part of the job responsibility of the hand embroiderer. Even the best quality tools and equipment cannot last long if not properly taken care of. Few key points in tool and equipment maintenance are:

- **Proper Storage:** All tools and equipment should be stored properly in their designated places. Good organization is not just about saving time when you're looking for the proper tool, or even just about saving space in your garage or shed. Good organization can go a long way toward keeping tools in proper working order for longer. Do not leave tools like needles, scissors, hoops scattered around or lying on the work station. After finishing the work, all tools and equipment should be placed in their designated places.

- **Regular Maintenance:** All tools that require lubricant should be regularly lubricated like scissors and hoop locks. Also, regular checks should be done to ensure the tools are working properly and if required repairs should be carried out.

- **Correct Usage:** Most tools are designed to perform specific functions. Using the wrong tool for a job can pose a safety hazard to you and those around you. By using your equipment incorrectly, you can make the tool less effective for its intended use. For instance, proper needles should be used for embroidering depending on the type of stitches and fabrics used.

- **Cleaning tools after use:** Tools like needles, scissors, hoops etc. should be properly cleaned after every use. This can be simply done by wiping them with a clean piece of cloth.

6.1.3 Common Cleaning Products

Cleaning substances are substances (usually liquids, powders, sprays, or granules) used to remove dirt, including dust, stains, bad smells, and clutter on surfaces. Purposes of cleaning agents include health, beauty, removing offensive odour, and avoiding the spread of dirt and contaminants to oneself and others. Some cleaning agents can kill bacteria and clean at the same time.

Common types of cleaning products are detailed below:

Acidic: Acidic cleaning agents are mainly used for removal of inorganic deposits like scaling. The active ingredients are normally strong mineral acids and chelants. Often, surfactants and corrosion inhibitors are added to the acid. Hydrochloric acid (also called muriatic acid) is a common mineral acid typically used for concrete. Vinegar can also be used to clean hard surfaces and remove calcium deposits. Sulfuric acid is used in acidic drain cleaners to unblock clogged pipes by dissolving greases, proteins.

Alkaline: Alkaline cleaning agents contain strong bases like sodium hydroxide or potassium hydroxide. Bleach (pH 12) and ammonia (pH 11) are common alkaline cleaning agents. Often, dispersants, to prevent re-deposition of dissolved dirt, and to attack rust, are added to the alkaline agent. Alkaline cleaners can dissolve fats (including grease), oils, and protein-based substance.

Neutral: Neutral washing agents are pH-neutral and based on non-ionic surfactants that disperse different types of dirt.

Degreaser: Cleaning agents specially made for removal of grease are called degreasers. These may be solvent-based or solvent-containing and may also have surfactants as active ingredients. The solvents have a dissolving action on grease and similar dirt. The solvent-containing degreaser may have an alkaline washing agent added to a solvent to promote further degreasing. Degreasing agents may also be made solvent-free based on alkaline chemicals and/or surfactants.

6.1.3.1 Commonly used Cleaning Substances

Some commonly used cleaning substances are:

- Water, the most common cleaning agent, which is a very powerful polar solvent

- Soap or detergent

- Ammonia

- Calcium hypochlorite (powdered bleach)

- Citric acid

- Sodium hypochlorite (liquid bleach)

- Sodium hydroxide (lye/caustic soda)

- Acetic acid (vinegar)

Fig.6.1.1: Type of Cleaning Substance

- Various forms of alcohol - like isopropyl alcohol or rubbing alcohol

- Borax, Sodium bicarbonate (baking soda)

- Tetrachloroethylene (dry cleaning)

- Carbon dioxide

- Chromic acid

- Trisodium phosphate

- Saltwater soap (a potassium based soap)

Industry Visit

The purpose of visiting an apparel manufacturing unit is to get hands on knowledge about various processes involved in the work of an Hand Embroiderer. During the visit you have to interact with Hand Embroiderers and supervisors to understand how work is done in industry. Make sure that you keep a notebook handy and note down any important points that come up during your interaction at the apparel manufacturing unit. When you go to an apparel manufacturing unit, you should:

- Understand the tools safety and maintenance rules of industry.

- Analyze how HEs:

  » Carry out basic maintenance of machine.

  » Maintain tools and equipments and handle them safely and use materials to minimize waste.

  » Work in a comfortable position with the correct posture.

  » Dispose of waste safely in the designated location.

  » Store cleaning equipment safely after use.

- Ask questions to Hand Embroiderers/supervisors if you have any query.

Exercise ✏️

1. Which of the followings are the key points in tool and equipment maintenance:

   a) Correct Usage

   b) Poor storage

   c) Cleaning tools after use

   d) All the above

2. Which of the followings are the common cleaning products:

   a) Neutral

   b) Acidic

   c) Degreaser

   d) All the above

3. What is waste management?

   ....

   ....

7. Maintain a Healthy, Safe and Secure Working Environment with Gender and PwD Sensitization

Unit 7.1 – Maintain Health, Safety and Security at Work Place

Unit 7.2 – First Aid & CPR

Unit 7.3 – Sensitivity towards People with disability and Gender Equality

AMH/N1904

Key Learning Outcomes 💡

At the end of this unit, participants will be able to:

1. Comply with health and safety related instructions applicable to the workplace.

2. Use and maintain personal protective equipment as per protocol.

3. Maintain a healthy lifestyle and guard against dependency on intoxicants.

4. Follow environment management system related procedures.

5. Identify and correct if possible) malfunctions in machinery and equipment.

6. Report any service malfunctions that can not be rectified.

7. Store materials and equipment in line with manufacturer's and organizational requirements.

8. Safely handle and move waste and debris.

9. Minimize health and safety risks to self and others due to own actions.

10. Seek clarifications, from supervisors or other authorized personnel in case of perceived risks.

11. Monitor the workplace and work processes for potential risks and threats.

12. Carryout periodic walk-through to keep work area free from hazards and obstructions, if assigned.

13. Report hazards and potential risks/threats to supervisors or other authorized personnel.

14. Participate in mock drills/ evacuation procedures organized at the workplace.

15. Undertake first aid, fire-fighting and emergency response training, if asked to do so.

16. Take action based on instructions in the event of fire.

17. Follow organization procedures.

18. Analyze the First Aid & CPR

UNIT 7.1: Maintain Health, Safety, and Security at Work Place

Unit Objectives 🎯

At the end of this unit, participants will be able to:

1. Identify methods to be vigilant for potential risks and threats associated with the workplace.

2. Handle tools and equipment in work area.

3. Check the workplace and work processes for risks like fire, electric shocks, etc.

4. Demonstrate the use of personal protective equipment.

5. Analyze sanitary facility in work place.

6. Analyze the work related facilities and benefits.

7. Explain about safety sign in working area.

7.1.1 Introduction

Features in garment industry that could be improved to prevent injuries include; communication, involvement of employees in decision making, education and training of employees and management on prevention strategies, and the ergonomic conditions at the plant.

The clothing industry is usually considered as a safe place to work. Compared to other industries, there are fewer serious risks in clothing factories. The hazards in clothing industry are different from others. The major health risks in this industry come from more subtle hazards whose effect build up over time.
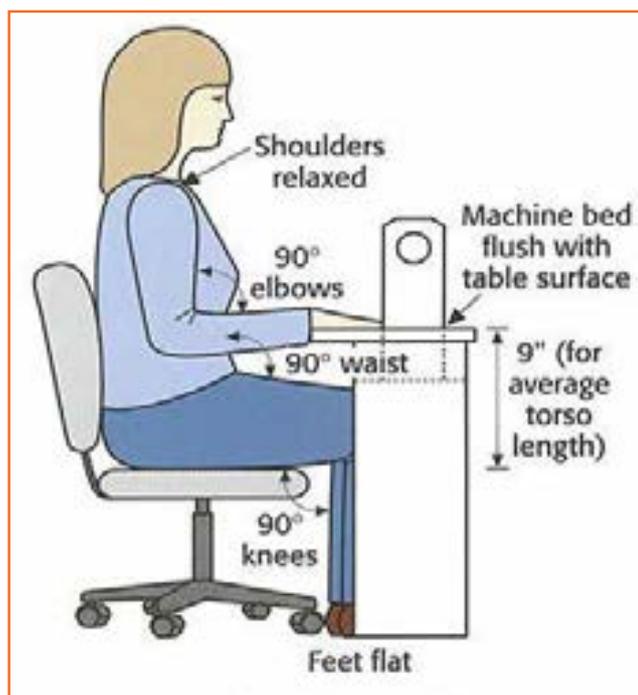
Fig.7.1.1: Body Posture

Workers in this industry face a substantially higher risk of muscle pain and injury than workers in other jobs. Studies also show that frequency of neck and shoulder injuries increases with years of employment. These injuries have a long-term effect on workers' health.

The physical requirements of a job are an important risk factor related to muscle pain and injury. The risks for Boutique Manager have been linked to conditions such as improper work area design, including sitting arrangements.
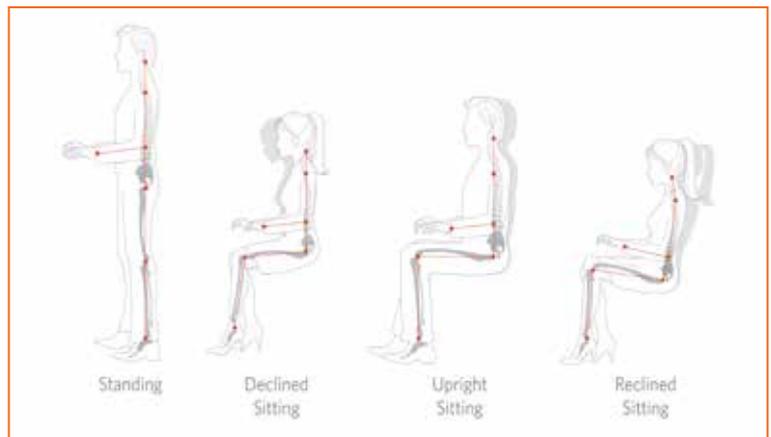
Fig.7.1.2: Body Posture

Factors like repeated motions, force, body-posture are associated with higher risks and rate of injury. There are other factors are linked to injuries. Some of these factors include improper height of work pace, excessive workload, lack of support from co-worker, overall work environment etc. The factors that lead to reduction in injury rates include empowering workforce, following safety protocol, good housekeeping practices and increased support from top management.

7.1.2 The 'Ergonomics'

Ergonomically-designed job ensures that an employee who is tall is given a comfortable space in or near his/her workspace so that the work efficiency is not hindered. Similarly, an employee who is shorter is able to reach all of his or her tools and products without upsetting comfort and safe assortment.

Workers are usually compelled to work in the confinement of the job or workstation that previously was designed with no dynamism or change when they are hired. This leads the workforce to work in difficult postures and positions, all of which may result in work-related injuries/disorders.

The work-place related injuries often start as minor aches and pains but can develop into incapacitating injuries that affect everyday activities. Ergonomics aims at preventing injuries by monitoring the risk factors such as force, repetition, posture and vibration that can cause injuries to develop.
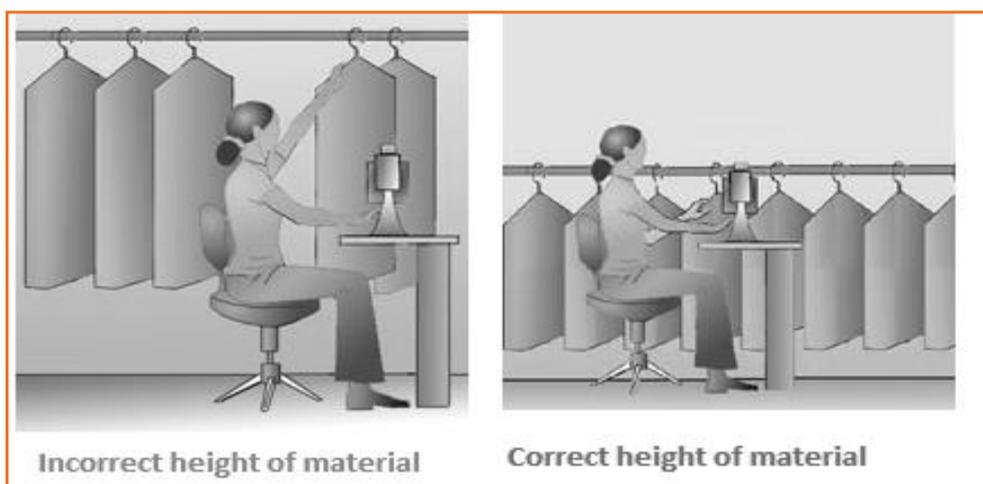
Fig.7.1.3: Situating the material

Injuries and illnesses among textile and apparel workers

• 81% complained CTDs to the wrist.

• 49% of workers is suffering from neck pains.

• 35% report obstinate lower back pain.

• 25% have suffered a compensable increasing trauma disorder.

• 14% reported CTDs to the elbow.

• 5% reported CTDs to the shoulder.

• Absenteeism increases as working conditions worsens.

• High employee turnover is associated with detrimental working conditions.

• Embroidery tasks are associated with pain in the shoulders, wrists, and hands.

• Ironing by hand is associated with elbow pain.

• Fitting fabric in frames like of work, are associated with CTDs of the hands and wrists.

Some fundamental ergonomic principals that should be followed in our workplaces are:

Fig.7.1.4: Cleaning the Tools

• **Proper tools:** Tools and equipment provided at work place should be appropriate for the specific tasks being performed. The apparatus should allow the workers to keep their hands and wrists straight – the position they would be in if they were droopy relaxed at your side. The workers should bend the tool– not the wrist. The tool should fit easily into the hand. If the grip size is too large or too small, it will be uncomfortable and will increase the risk of injury. Tools should not have sharp edges.

• **Keep repetitive motions to a minimum:** Workstations can be restructured to avoid the number of health hazards which chances due to repetitive motions that must be performed. Using a power-driven screwdriver or tools with a notch device can decrease the number of twisting motions with the arm. Work stations should have enough space for the given tasks and provide proper chairs. For deterrence of ergonomic injuries, the labour force should be encouraged to change work and take frequent but short breaks. Some tasks can be mechanical or reformatted to eliminate musculoskeletal injuries. Manufacturing tools and equipment should integrated ergonomic design codes and should not require an extreme amount of force to operate.

• **Avoid awkward postures:** The industry is such that the workforce's job should not require you to work with your hands above shoulder height on a regular basis. Arms should be closer to the body and not raised too high. Bending of their wrists, back and neck should be avoided.

• **Use safe lifting procedures:** The employee should avoid lifting objects that are too heavy. Use more than one person or a mechanical device to reduce the load. The workstation should not require lifting objects above the head or twisting his/her back while lifting. One must keep the load close to his body. Heavy and often lifted objects should be kept between knee and shoulder height and not on the floor or above the head level.

• **Get proper rest:** It is imperative to take frequent breaks to rejuverate the body and mind so that they don't get injuried. The workforce should be groomed to understand that they should take a break from the work not just mentally but physically too. If a person has errand which doesn't allow him to sit, he must take intervals from his work to relax his leg muscles. If he is doing a sitting job, he must go for a walk whenever his work permits.

For example, if you stand all day, while performing your job you should sit down to rest your legs and feet during your breaks. If you sit down, when working you should stand up and walk around during your breaks to give your back a rest and to increase circulation in your legs. By doing this the musculoskeletal injuries can be prevented.

- **Other things to consider:** Chemicals also have a part in garment manufacturing. Dyes, enzymes, solvents and other chemicals are used to create different fabric finishes and provide durability to the product. Proper ventilation and personal protective equipment are important for protection of workers engaged in chemical processing. Similarly, for workers who handle the finished material and may be exposed to excess chemicals and off-gassing, protective equipment should be used.
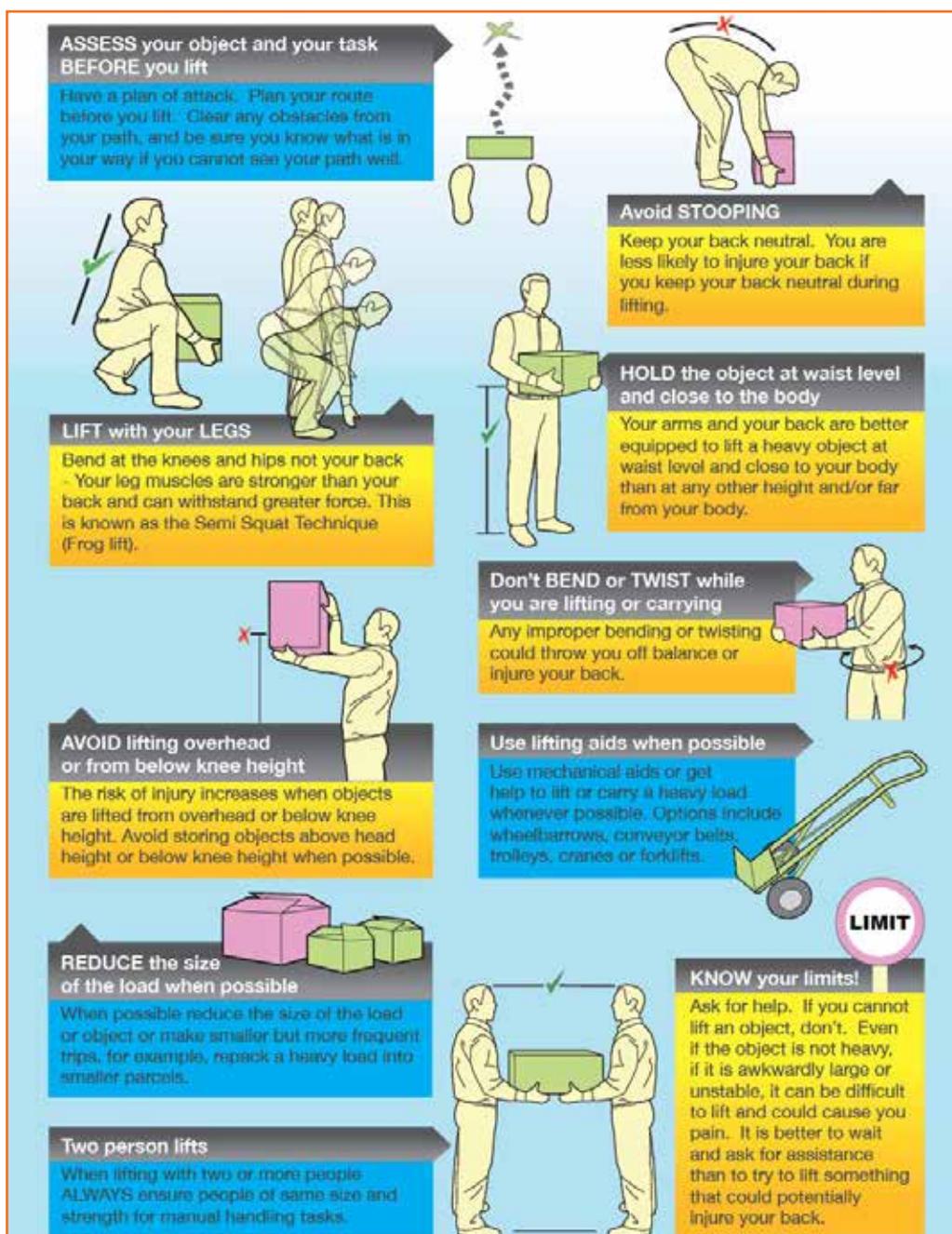
Fig.7.1.5: Do's and Don'ts in material handling

7.1.3 Environmental Control Measures

Hazardous substances in one form or another can be found in almost all small and medium-sized enterprises. The garments industry generates a lot of dust from fabrics being cut and sewn. Some fabrics release chemicals which saturate the air causing difficulties in breathing and eye irritation. Solvents used for cleaning fabrics and garments may cause fatigue, headache and dizziness. Dust and solvents, when breathed, can lead to lung diseases and are very dangerous. Not only will this affect the well-being of your workers, it will also result in a reduction of productivity and product quality, increased absenteeism and turnover of staff. High levels of dust interfere with efficient production and require cleaning operations that may spoil materials and finished products. Improved conditions usually mean increased output, higher productivity and quality. There are simple and inexpensive ways to control most of the environmental problems. Improvements often result in cost savings, productivity benefits and increased safety of workers. The following rules provide a series of low-cost measures for sound environmental control.

7.1.3.1 Clean Regularly and Properly - Don't Spread Dust

Dust originates from fabrics and threads, from cutting and sewing to packing operations. Thus, it is very common to see small clothing enterprises with ceilings and walls full of dusty cobwebs. Even machines which are not regularly cleaned could be full of dust which may cause them to break down.

Dust increases wear and tear on machinery, necessitating more maintenance. It also negatively affects the quality of raw materials and finished products. Dust entering the respiratory system can damage the worker's lungs. Some dust can also cause allergies. Dust should be removed regularly and eliminated from the source. More comprehensive cleaning should be carried out as often as necessary. This cleaning should also include walls, ceilings, storage racks and other areas where dust accumulates. Dust on windows, walls and lamps will significantly reduce the lighting in the workplace.

Fig.7.1.6: Cleaning the Shop Floor

One low-cost cleaning method is sweeping the floor carefully with an appropriate broom and accompanying dust pan to prevent dust from spreading. Spraying water on the floor before sweeping will avoid dust remaining airborne. When dust is moistened it can be easily removed with a broom More effective methods of controlling dust include using a vacuum cleaner or a wet mop.

7.1.4 Make Local Ventilation Cost-effective

Local ventilation should only be considered as a means of reducing chemical hazards when other means have failed. There are cost-effective ways of improving ventilation.

Use proper fans

Apart from those used for ventilating workstations, fans may be utilized to remove dangerous substances from the workplace. Contaminated air can be pushed or blown outside by having more open windows. A few points should be considered:

• There should be no obstacles between the fan and opening. Anything in the way significantly reduces the desired effect.

• The air speed should be low to reduce turbulence. In the garment industry, different fans are used; some use industrial fans or wall fans as shown in Fig. There are advantages and disadvantages for these types of fans. Industrial fans are so powerful that workers near them may be affected. Ceiling fans of the rotary type may lift the cloth being sewn, hence speed should be controlled.

• Contaminated air should not be blown in the direction of other workers on the way to the opening.

Fig.7.1.7: Using Fans

• Care should be taken that air expelled from the workplace does not affect people outside the enterprise.

• A fan may not be sufficient to remove vapours from hazardous fumes such as those sometimes used in silkscreen printing. Extractor systems to remove dust and hazardous chemicals should be installed. These systems may be quite expensive and it may be more economical to replace the hazardous chemicals.

7.1.5 Good Lighting for Quality Products

Good lighting does not mean more light bulbs and more use of electricity. Natural lighting is usually a better option than the bulbs. But if there is a difficulty in arranging for a natural lighting through windows and ventilators, its important that the bulbs and other elements of artificial lights should be well-maintained. A good lighting arrangement is directly proportionate to an efficient workforce.

80% of the absorption of information from our surroundings are from our eye as a sense organ. Bad lighting means wrong or lesser absorption of information, leading to lower productivity. Eye strain in low light can lead to head ache and again decreases the productivity level of the worker.

It is imperative to understand the ways in which we can arrange for a good lighting without increasing the electricity bills. First of all one has to identify if at all you need to work upon the existing brightness level in the work place. Lighting requirements are reliant on three main features:

- The environment of the working area

- The nature of the task

- The sharpness of the worker's eyesight

A sewer needs focused light at needle point, so needle lights should always be fitted. A worker packing garments requires more largely lighting. In many situations, packers work on special tiered work tops, where lights are built into the station. The age group of the workforce is also important factor to determine this. Which means, an older worker may need twice as much light as a younger one. Another way to identify the gap, in lighting problem is going around the workplace, observing the workers and asking them about their visual problems. The plan of improvements may not have much impact if the workers' eyesight is insufficient. An eyesight test for all employees should be carried out. Even if some workers do not follow advice about obtaining glasses. One will be aware of the problem and a possible reason for low efficiency and decreased productivity.

7.1.5.1 Use of Daylight

It is very unfortunate that many corporations undermine the fact that natural light is the best and the cheapest source of illumination. One had to gauge the surface area of the work area and measure the windows and skylights. Ideally the open space that includes the windows, ventilation windows and door should be one-third of the total area of work.

However a determinant of choosing the natural light is the heat that is emitted in the work place.

Fig.7.1.8: Use of daylight

If there is too many machinery omitting heat, it isn't a great idea to allow the natural heat to come in and add up to the temperature.

The higher the window, the more light is in. Skylights can double the light of a low light but if made in a lower level, it faces obstacles ad is blocked by the machineries and storage containers. If the factory doesn't have a skylight, one must consider to replace the opaque roofs with translucent or transparent plastic rooftops.

It is important to paint the walls in lighter shades which not just give a sense of space to a room, but the workstation would look illuminated. It enhances the visual conditions and a pleasant cheerful environment is encouraged.

The matt finish of whitewash is a great idea. Many enterprises are implementing white tile ceilings. To avoid harmful glare, one should avoid gloss paint for walls. Pale colours are better than white. A slightly dimmer colour below eye level is accommodating. But one should maintain cleanliness, since lack of regular cleaning can result in the loss of at least 10 to 20 per cent of light. Special care should be taken to clean skylights, which are sometimes difficult to reach.

These colours are much better than the black formerly used for the bodies or chrome finish for the Figs, which reflect more glare. An unsatisfactory circulation of natural light over the work area, particularly in embroidery rooms, is a problem. Considering the fact, one must change the layout of benches and machines in order to minimize shadow zones. Workstations with high lighting requirements should be moved closer to the windows and possibly be assembled together for the provision of additional lighting. However, if the workstation layout

responds well to your production needs, you may instead reorganize the delivery and height of the lamps or add needle lights which are good options.

Fig.7.1.9: Sunlight in the Shop Floor

7.1.6 Reporting an Accident and an Incident

Your responsibility requires you to be aware of potential hazards and correct reporting processes. If you notice a potentially hazardous situation, eg: a client expressing violent behavior, it is important that you report it immediately to management and fill out the appropriate forms as legally required of you.

If you are injured at work you must:

• Report the injury to management as soon as possible, and certainly within 24hours.

• Seek proper treatment for your injury.

7.1.6.1 Accidents

Always work in a safe manner to prevent accidents from occurring in the first place. Make sure that you have been given adequate information and on-the-job training about the first aid facilities and services available in your workplace, including:

- Where to find first aid kits.

- Location of first aid rooms.

- Complete, up-to-date contact details of trained first aid officers in the workplace procedures for critical accidents – such as who should be responsible for calling.

- The ambulance/doctor/nurse and what is the best method of contact, measures for evacuation of the injured person/s.

- Emergency procedure for the elimination of life-threatening chemicals commonly used in the workplace.

- Universal precautions for the control of infection.

- Who to contact for debriefing/psychological support.

Reporting of incidents and accidents is required under the Work Health and Safety (WHS) legislation. Workplaces tend to have well developed reporting procedures in place, which aim to fully understand the accident/incident and prevent any future occurrences through investment in injury prevention, based upon accurate data. Reporting and recording should also facilitate costing and associated financial loss.

Always report an accident to management immediately. There should be a form at each workplace that you (or the person involved) and any witnesses can fill out, where possible, otherwise. The form should cover the following areas:

- **Description of the occurrence:** What was the event that occurred, which required this report to be completed?

- **Nature of injury or disease:** Select the most appropriate description from a range of options. What injury or disease happened as a result of the occurrence?

- **First aid, medical treatment or hospital admission:** This section asks for a description of what was done to treat the injury or disease.

- **Part of the body affected:** Tick off which part or parts of the body were affected as a result of the occurrence.

- **Source of injury:** What actually caused the person to be injured or acquire a disease? This could be a piece of machinery or other hazardous materials for example.

- **Probable cause or causes of injury:** How was the source listed above actually responsible for the injury?

- **Investigation:** This asks a series of questions that seek to find out why the person has been injured or has acquired a disease.

- **Notification checklist:** This checklist makes sure that everyone who should have been contacted regarding the matter has been contacted and asks whether appropriate action has been taken by the authorities.

- **Preventative action:** This asks whether or not any action has been taken to prevent the occurrence from happening again.

- **Witness details:** This part is to be filled out if someone saw the occurrence happen. It is essential if any sort of legal action is to be taken.

7.1.7 Mock Drills/ Evacuations

Fire safety and evacuation plans sketch staff duties and accountabilities in time of emergency. Continuing training is required to help safeguard that the employees are conscious of those duties and responsibilities. Fire fighting trainings serve as an prospect for staff members to validate, under replicated fire conditions, that they can perform those duties and responsibilities safely and efficiently. It's also a time for them to demonstration that they are aware of defend-in-place strategies and can take advantage of your facility's fire protection features and exit facilities to protect the people in their care.

Fire drills are excellent exercise designed to evaluate staff response to a replicated emergency. They are also a test of your facility's fire safety/ evacuation strategies and staff training programs. It is not essential that all fire drills run smoothly. That's okay, so long as staff and the organization learns from them and correct mistakes made. It's vital, therefore, that there be a analysis of each drill so that any problems met can be addressed. Perhaps the problems are due to unfinished or out-dated fire safety/emigration plans. Perhaps there's a need for additional staff training.

Fig.7.1.10: Fire Safety

The two essential components of a fire preparedness plan are the following:

1.   An emergency action plan, which details what to do when a fire occurs.

2.   A fire prevention plan, which describes what to do to prevent a fire from occurring.

7.1.8 Low-cost Work-related Welfare Facilities and Benefits

Work-related welfare conveniences and facilities are never given heed to. Who cares about toilets, first-aid kits, lunch rooms or lockers? What do they have to do with the hard authenticities of production? One answer is that workforces care. During each working day, workers need to drink water or some other beverage, eat meals and snacks, wash their hands, visit a lavatory, and rest to recover from fatigue. This can be difficult or easy, unpleasant or comfortable, a health risk or an aid to hygiene and nutrition. The essential facilities in the factory show if you care about employees more or the machines.

Another good reason is that extra efforts for better facilities are often appreciated far beyond the time and money capitalized, Work-related facilities benefit workers to overcome problems which are important to them. Let workers express their priorities for improvements and give their feedback. You may be surprised at the results. Giving a hygienic and wel-maintained workplace is indirectly showing yur employees how much you care for them.

A small enterprise can be a community where workers are loyal, with good industrial relations and high morale, It can also be a place where workers look for the first chance to leave and care little about the owner's success. Which kind of initiative do you want? The series of low-cost facilities that trails will help to retain the best staffs.

7.1.10.1 Essential Facilities

Drinking water

Drinking water is indispensable for all workers; if this is not provided, they become thirsty and gradually dehydrated. This greatly increases fatigue and lowers productivity, especially in a hot environment. Place water vessels near each group of workers, or provide taps or cascades with clean water in a central place. This will minimize the time lost in going to get a drink. However, drinking water should not be placed in washrooms or toilets, near dangerous machines or other hazards, nor in places where it can be contaminated by dust, chemicals or other substances.

If there is any doubt about contamination, water must be thoroughly boiled or properly filtered or treated. Unhealthy water will lead to illness and therefore absenteeism from work. Before starting to use a new water source for drinking purposes, it is advisable to have it tested to make sure it conforms to the national standard for drinking water. The design, construction and operation of deep wells for the extraction of ground water should be subjected to the provisions of existing water codes. Piped water should only be used when a hygienic water supply is guaranteed. A clear distinction between potable and non-potable water taps should be made and a "Safe Drinking Water" sign should be put up near to each tap.

Drinking water vessels should be made from materials that can easily be cleaned, Even if the vessels are filled with fresh water, the water inside, if kept for even a short time, can become unhygienic. It should therefore be different frequently. It is also imperative to make sure that drinking water is cool. If a water cooler is too luxurious, the water vessels can be placed in the coolest place in the factory. It will facilitate the water to remain cool throughout the day. They should not be left uncovered, under the sun or in a hot place. Drinking fountains for production areas are very advantageous from a hygienic point of view. They can be fitted with a jet or bubbler outlet and/or goose-neck or other outlet for filling drinking cups. The fountain should be free from sharp angles and designed to prevent unnecessary splashing. Water outlets should be above the rim of overflow level so that they will not be contaminated with waste water. The water outlet should be shielded to prevent the lips of a drinker from being placed on it. Drinking water containers should be attended by a designated person. Containers should be made of impermeable materials. A cooling device would be an advantage. (Unglazed pottery can be used, due to its unique cooling effect, in dust-free places.) Containers should be provided with suitable covers, and kept in a cool place protected from the sun. The water must be changed frequently.

To avoid the possible spread of infection, it is better to use throwaway cups or to provide separate cups for each worker and to arrange for regular washing. When containers are used, it is important to clean them regularly. Cleaning and other necessary conservation tasks should be assigned to a specific person. In addition, the provision of a competence for boiling water will enable people to make coffee or other hot beverage during breaks. Hot water is required if the enterprise has a childcare facility.

7.1.5.2 Sanitary Facilities

There are several reasons why the provision of washing facilities is important:

- Dirt and grime can be ingested and cause sickness or disease; they are, in any case, unpleasant and demoralizing.

- Washing is a necessity when women have their monthly periods.

- Washing is required for basic hygiene after using the toilet.

- Apart from the obvious basic need, sanitary facilities are required by law. Clienteles often create an impression of an enterprise through the quality of its sanitary facilities.

- There should be a sufficient number of hygienic facilities on the work locations and each should be conveniently located to avoid long walks, waiting and hindrance. The law of the country must be monitored, but the following are the minimum requirements:

- One restroom is required for up to five men; two toilets for six to 40 men.

- One separate restroom for up to five women and two toilets for six to 30 women.

- One wash-basin for every 15 workers.

Fig.7.1.11: Signages

Ideally, there would be a separate toilet for men and women. These should be characterized as follows:

- The toilet bowl must be free from stain or odour and function properly.

- The walls of the toilet must be clean and tiles unstained.

- The ceiling of the toilet must be free from cobwebs and dust.

- Floors must be clean and safe (no broken tiles, nor slippery surface).

- Proper illumination must be provided inside the toilet.

- Toilets must have a continuous supply of water; in case water is limited in the area, water should be stocked in containers and refilled regularly.

- Mirrors and rubbish bins should be provided in the washroom.

- Soap and toilet paper should be provided.

- The washroom should provide complete privacy to users and should be fully ventilated.

7.1.9 Be Ready for Emergencies

Misfortunes can happen even if proper defensive measures are installed. So, always be prepared for emergencies and have readiness for disaster management, like cuts and bruises, eye injuries, burns, poisoning and electric shocks. Every enterprise should maintain a well-stocked first-aid box and assign at least one person from every shift to handle emergencies. First-aid boxes should be clearly marked and situated in a place, so that they are readily reachable in an emergency. They should not be more than 100 metres away from any place on the work site. Ideally, such kits should be near a wash-basin and in good lighting conditions. Their supplies need to be regularly checked and replenished. The contents of a first-aid box are often regulated by law, with variations according to the size and the likely industrial hazards of the enterprise. A typical basic kit may include the following items in a dustproof and waterproof box:

Fig.7.1.12: First Aid

- Sterile bandages, pressure bandages, dressings (gauze pads) and slings. These should be individually wrapped and placed in a dustproof box or bag. Adequate quantities of the different sizes should be available at all times to treat small cuts and burns.

- Cotton wool for cleaning wounds.

Ideally, there would be a separate toilet for men and women. These should be characterized as follows:

- The toilet bowl must be free from stain or odour and utility properly.

- The walls of the toilet must be clean and tiles unstained.

- The ceiling of the toilet must be free from torpors and dust.

- Floors must be clean and safe (no broken tiles, nor slippery surface).

- Proper illumination must be provided inside the restroom.

- Lavatories must have a continuous supply of water; in case water is limited in the area, water should be stocked in containers and refilled regularly.

- Mirrors and rubbish bins should be provided in the washroom.

- Soap and toilet paper should be provided.

- The washroom should give complete privacy to users and should be fully aired.

7.1.10 Safety Signs at Workplace

Safety Signs: Sign providing information or instruction about safety or health at work by means of a signboard, a colour, an illuminated sign or acoustic signal, a verbal communication or hand signal.

Signboard: A sign which provides information or instructions by a combination of shape, colour and a symbol or pictogram which is rendered visible by lighting of sufficient intensity. In practice, many signboards may be accompanied by supplementary text, eg 'Fire exit', alongside the symbol of a moving person. Signboards can be of the following four types:

1. **Prohibition sign:** A sign prohibiting behaviour likely to increase or cause danger (eg 'no access for unauthorised persons').

Fig.7.1.13: Prohibition sign

2. **Warning sign:** A sign giving warning of a hazard or danger (eg 'danger: electricity').

Fig.7.1.14: Warning sign

3. **Mandatory sign:** A sign prescribing specific behaviour (eg 'eye protection must be worn').

Fig.7.1.15: Mandatory sign

4. **Emergency escape, Fire and First-aid signs:** A sign giving information on emergency exits, first aid, or rescue facilities (eg 'emergency exit/escape route'.

Fig.7.1.16: Emergency escape

Signs for emergency exits
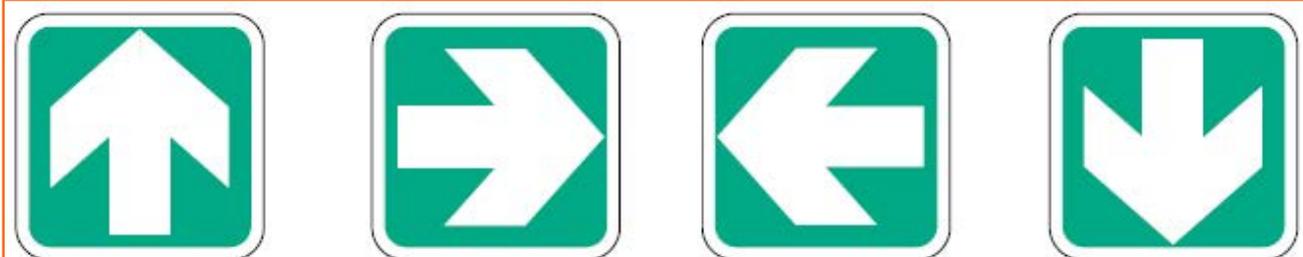
Fig.7.1.17: Signs for emergency exits

Signs for Fire and First Aid

Fig.7.1.18: Signs for Fire

7.1.11 Prevention and Management of Corona Virus

As we all know a new respiratory disease called COVID-19 is spreading across the world. India has also reported cases from states and the government is trying to contain the spread of the disease. We can play a major role in preventing its spread by follow Covid safety guidelines.

COVID-19 is a disease caused by the "novel corona virus". Common symptoms are Fever, Dry cough,Breathing difficulty, Some patients also have aches and pains, nasal congestion, runny nose, sore throat or diarrhea

Fig.7.1.19: Prevention from COVID-19

COVID-19 spreads mainly by droplets produced as a result of coughing or sneezing of a COVID-19 infected person. To protect yourself from Covid-19, follow below guidelines.

• Maintain a safe distance from others (at least 1 metre), even if they don't appear to be sick.

• Wear a mask in public, especially indoors or when physical distancing is not possible.

• Choose open, well-ventilated spaces over closed ones. Open a window if indoors.

• Clean your hands often. Use soap and water, or an alcohol-based hand rub.

• Get vaccinated when it's your turn. Follow local guidance about vaccination.

• Cover your nose and mouth with your bent elbow or a tissue when you cough or sneeze.

• Stay home if you feel unwell.

• If you have a fever, cough and difficulty breathing, seek medical attention. Call in advance so your healthcare provider can direct you to the right health facility.

This protects you, and prevents the spread of viruses and other infections.

Exercise ✎

1. While working at workplace, your waist should be at:
   a) 30º
   b) 60º
   c) 90º
   d) 120º

1. We receive _____ per cent of all information through our eyes.
   a) 75%
   b) 60%
   c) 70%
   d) 80%

2. In case of fire do not use _____.
   a) Lift
   b) Stairs
   c) Ladder
   d) Window

3. The factors that lead to reduction in injury rates include:
   a) Empowering workforce
   b) Following safety protocol
   c) Good housekeeping practices
   d) Support from top management
   e) All of the above

4. Lighting requirements are reliant on:
   a) The environment of the working area
   b) The nature of the task
   c) The sharpness of the worker's eyesight
   d) All of the above

UNIT 7.2: First Aid & CPR

Unit Objectives ⊚

At the end of this unit, participants will be able to:
1. Apply first aid on an injured person.
2. Interpret the procedure of CPR.

7.2.1 First Aid

First aid is the assistance given to any person suffering a sudden illness or injury, with care provided to preserve life, prevent the condition from worsening, and/or promote recovery. It includes initial intervention in a serious condition prior to professional medical help being available, such as performing CPR while awaiting an ambulance, as well as the complete treatment of minor conditions, such as applying a plaster to a cut. First aid is generally performed by the layperson, with many people trained in providing basic levels of first aid, and others willing to do so from acquired knowledge. Mental health first aid is an extension of the concept of first aid to cover mental health.

Fig.7.2.1: First aid Pyramid

There are many situations which may require first aid, and many countries have legislation, regulation, or guidance which specifies a minimum level of first aid provision in certain circumstances. This can include specific training or equipment to be available in the workplace (such as an Automated External Defibrillator), the provision of specialist first aid cover at public gatherings, or mandatory first aid training within schools. First aid, however, does not necessarily require any particular equipment or prior knowledge, and can involve improvisation with materials available at the time, often by untrained persons.

Vital Signs	Good	Poor
Heart Rate	60-100 beats per minute	Less than 60 or greater than 100 beats per minute
Respirations	14-16 breaths per minute	Less than 14 breaths per minute
Skin	Warm, pink and dry	Cool, pale and moist
Consciousness	Alert and orientated	Drowsy or unconscious

Fig.7.2.2: Vital Signs

Awareness	Assessment	Action	Aftercare
• Observe • Stop to Help	• Assess what is required to be done • Ask yourself, 'Can I do it?'	• Do what you can • Call for expert medical help • Take care of your and the bystander's safety	• Once you have assisted the victim, stay with him/her till expert care arrives

Fig.7.2.3: Four A's of First Aid

While delivering First Aid always remember:

• Prevent deterioration.

• Act swiftly, deliberately and confidently.

• Golden Hour – First 60 minutes following an accident.

• Platinum Period – First 15 minutes following an accident.

• Prevent shock and choking.

• Stop bleeding.

• Loosen victim's clothes.

• Regulate respiratory system.

• Avoid crowding/over-crowding.

• Arrange to take victim to safe place/hospital.

• Attend to emergencies first with ease and without fear.

• Do not overdo. Remember that the person giving first aid is not a doctor.

Injury	Symptom	Do's	Don'ts
Fracture	• Pain • Swelling • Visible bone	• Immobilise the affected part • Stabilise the affected part • Use a cloth as a sling • Use board as a sling • Carefully Transfer the victim on a stretcher	• Do not move the affected part • Do not wash or probe the injured area
Burns (see Degrees of Burn table)	• Redness of skin • Blistered skin • Injury marks • Headache/seizures	• In case of electrical burn, cut-off the power supply • In case of fire, put out fire with blanket/coat • Use water to douse the flames • Remove any jewellery from the affected area • Wash the burn with water	• Do not pull off any clothing stuck to the burnt skin • Do not place ice on the burn • Do not use cotton to cover the burn

Bleeding	• Bruises • Visible blood loss from body • Coughing blood • Wound/Injury marks • Unconsciousness due to blood loss • Dizziness • Pale skin	• Check victim's breathing • Elevate the wound above heart level • Apply direct pressure to the wound with a clean cloth or hands • Remove any visible objects from the wounds • Apply bandage once the bleeding stops	• Do not clean the wound from out to in direction • Do not apply too much pressure (not more than 15 mins) • Do not give water to the victim
Heat Stroke/Sun Stoke	• High body temperature • Headache • Hot and dry skin • Nausea/Vomiting • Unconsciousness	• Move the victim to a cool, shady place • Wet the victim's skin with a sponge • If possible apply ice packs to victim's neck, back and armpits • Remove any jewellery from the affected area • Wash the burn with water	• Do not let people crowd around the victim • Do not give any hot drinks to the victim
Unconsciousness	• No movement of limbs • No verbal response or gestures • Pale skin	• Loosen clothing around neck, waist and chest • Check for breathing • Place the victim's legs above the level of heart • If victim is not breathing, perform CPR	• Do not throw water or slap the victim • Do not force feed anything • Do not raise the head high as it may block the airway

Fig.7.2.4: First Aid for different types of injuries

1st Degree Burn	2nd Degree Burn	3rd Degree Burn	4th Degree Burn
Will recover itself in a few days. **Action Required:** Place under running water.	Serious but recovers in a few weeks. **Action Required:** Place clean wet cloth over the burnt area.	Very Serious and will require skin grafting. **Action Required:** Place a clean dry cloth over the burnt area.	Extremely Serious and requires many years with repeated plastic surgery and skin grafting, is life threatening. **Action Required:** Leave open and prevent infection.

Fig.7.2.5: Degree of Burns

7.2.2 Splints and Aids of Torso

A splint is a bandage that immobilizes a broken bone. Sometimes this is done by using rigid objects such as sticks or boards. For some injuries, however, this isn't possible and the only option is to tie the broken limb to the body.

7.2.2.1 Splints

During the application of a splint, it is important to not attempt to straighten the break. This will lead to more injury and pain for the affected. Instead, the splint should be applies to the break the way it was.

When using rigid material

Always use long enough pieces to reach the joints beyond the break. For example, when splinting a forearm, the material should be long enough to touch both the wrist and the elbow. This helps keep the material in place and prevents too much pressure from being applied to the wound.

• Always put padding between the rigid material and the body to keep the victim comfortable.

• Knots should be tied between the body and the rigid material. This is an easier option when it comes to untying them. However, if this can't be carried out, the knots should be tied over the rigid material.

• Padding should always be used between the body and the rigid material in order to provide a comfortable setting to the affected.
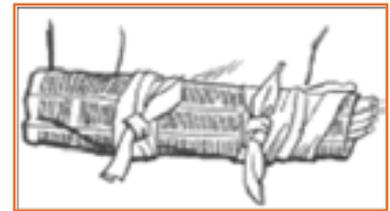
Fig.7.2.6: Splint the Forearm

• Splint the wrist in the same way. The entire forearm should be immobilized.
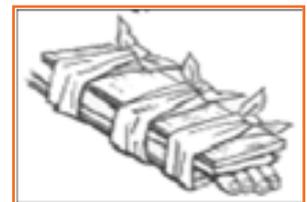
Fig.7.2.7: splint the Wrist
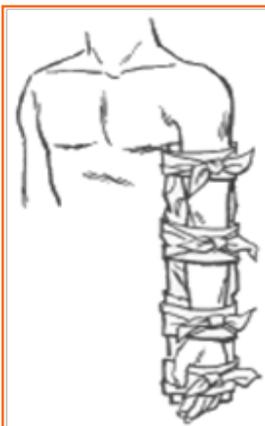
Fig.7.2.8: Splint the Elbow

• To splint the elbow, use enough rigid material to go from the armpit to the hand. The entire arm should be immobilized. Do not attempt to straighten or bend the elbow; splint it in position.

• To splint the upper leg, use long pieces of rigid material that will reach from the ankle to the armpit. Above the hips, tie long straps around the torso to hold the top of the splint in place.

Fig.7.2.9: Splint the Upper Leg

- The pieces used should be long enough to reach the joint beyond the break. For instance, when a forearm is splinted, the material should be long enough in such a way that it includes both the wrist and the elbow. This helps in preventing too much pressure to the wound and also helps in keeping the material in place.

Fig.7.2.10: Splint the Lower Leg

7.2.3 CPR

Basic life support (BLS) is a level of medical care which is used for victims of life-threatening illnesses or injuries until they can be given full medical care at a hospital.

First aid is as easy as ABC – airway, breathing and CPR (cardiopulmonary resuscitation). In any situation, apply the DRSABCD Action Plan.

DRSABCD stands for:

- **Danger:** Always check the danger to you, any bystanders and then the injured or ill person. Make sure you do not put yourself in danger when going to the assistance of another person.

- **Response:** Is the person conscious? Do they respond when you talk to them, touch their hands or squeeze their shoulder?

- **Send for help:** Call ambulance.

- **Airway:** Is the person's airway clear? Is the person breathing? If the person is responding, they are conscious and their airway is clear, assess how you can help them with any injury.

Fig.7.2.11: Basic life support chart

  If the person is not responding and they are unconscious, you need to check their airway by opening their mouth and having a look inside. If their mouth is clear, tilt their head gently back (by lifting their chin) and check for breathing. If the mouth is not clear, place the person on their side, open their mouth and clear the contents, then tilt the head back and check for breathing.

- **Breathing:** Check for breathing by looking for chest movements (up and down). Listen by putting your ear near to their mouth and nose. Feel for breathing by putting your hand on the lower part of their chest. If the person is unconscious but breathing, turn them onto their side, carefully ensuring that you keep their head, neck and spine in alignment. Monitor their breathing until you hand over to the ambulance officers.

- **CPR (cardiopulmonary resuscitation):** if an adult is unconscious and not breathing, make sure they are flat on their back and then place the heel of one hand in the centre of their chest and your other hand on top. Press down firmly and smoothly (compressing to one third of their chest depth) 30 times. Give two breaths. To get the breath in, tilt their head back gently by lifting their chin. Pinch their nostrils closed, place your open mouth firmly over their open mouth and blow firmly into their mouth. Keep going with the 30 compressions and two breaths at the speed of approximately five repeats in two minutes until you hand over to the ambulance officers or another trained person, or until the person you are resuscitating responds.

- **Defibrillator:** For unconscious adults who are not breathing, an automated external defibrillator (AED) is applied. An AED is a machine that delivers an electrical shock to cancel any irregular heart beat (arrhythmia), in an effort get the normal heart beating to re-establish itself. Please ensure that a trained person is there

to apply the AED. If the person responds to defibrillation, turn them onto their side and tilt their head to maintain their airway.

1. **Airway**

    Once you have assessed the patient's level of consciousness, evaluate the patient's airway. Remember, if the patient is alert and talking, the airway is open. For a patient who is unresponsive, make sure that he or she is in a supine (face-up) position to effectively evaluate the airway. If the patient is face-down, you must roll the patient onto his or her back, taking care not to create or worsen an injury. If the patient is unresponsive and his or her airway is not open, you need to open the airway. Head-tilt/chin-lift technique can be used to open the airway.

    Head-tilt/chin-lift technique

    To perform the head-tilt/chin lift technique on an adult:

    - Press down on the forehead while pulling up on the bony part of the chin with two to three fingers of the other hand.

    - Tilt the head past a neutral position to open the airway while avoiding hyperextension of the neck.
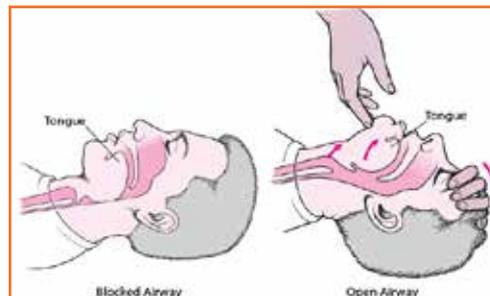
Fig.7.2.12: Airway

2. **Cardiopulmonary resuscitation**

Cardiopulmonary resuscitation circulates blood that contains oxygen to the vital organs of a patient in cardiac arrest when the heart and breathing have stopped. It includes chest compressions and ventilations as well as the use of an automated external defibrillator.
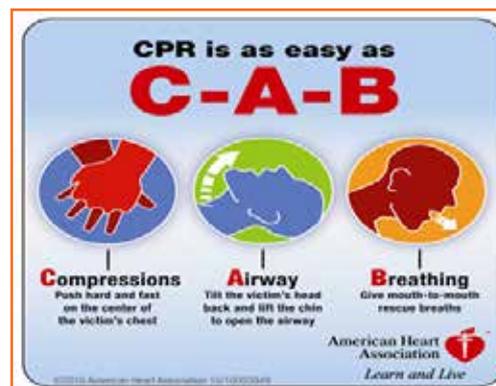
Fig.7.2.13: CAB

- **Compressions:** One component of CPR is chest compressions. To ensure optimal patient outcomes, high-quality CPR must be performed. You can ensure high-quality CPR by providing high-quality chest compressions, making sure that the:

    » Patient is on a firm, flat surface to allow for adequate compression. In a non- healthcare setting this would typically be on the floor or ground, while in a healthcare setting this may be on a stretcher or bed.

    » The chest is exposed to ensure proper hand placement and the ability to visualize chest recoil.

    » Hands are correctly positioned with the heel of one hand in the center of the chest on the lower half of sternum with the other hand on top. Most rescuers find that interlacing their fingers makes it easier to provide compressions while keeping the fingers off the chest.
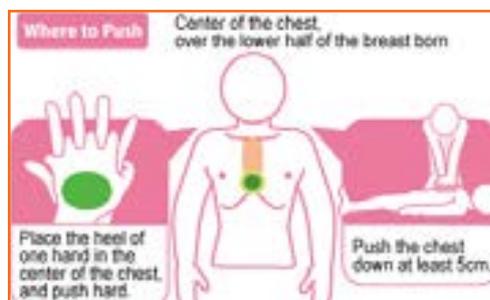
Fig.7.2.14: Compressions

» Arms are as straight as possible, with the shoulders directly over the hands to promote effective compressions. Locking elbows will help maintain straight arms.

» Compressions are given at the correct rate of at least 100 per minute to a maximum of 120 per minute, and at the proper depth of at least 2 inches for an adult to promote adequate circulation.

» The chest must be allowed to fully recoil between each compression to allow blood to flow back into the heart following the compression.

» For adult co-workers, CPR consists of 30 chest compressions followed by 2 ventilations.

• **Ventilations:** Ventilations supply oxygen to a patient who is not breathing. They may be given via several methods including:

Mouth-to-Mouth

• Open the airway past a neutral position using the head-tilt/chin-lift technique.

• Pinch the nose shut and make a complete seal over the patient's mouth with your mouth.

• Give ventilations by blowing into the patient's mouth. Ventilations should be given one at a time. Take a break between breaths by breaking the seal slightly between ventilations and then taking a breath before re-sealing over the mouth.

Pocket mask

CPR breathing barriers, such as pocket masks, create a barrier between your mouth and the patient's mouth and nose. This barrier can help to protect you from contact with a patient's blood, vomitus and saliva, and from breathing the air that the patient exhales.

• Assemble the mask and valve.

• Open the airway past the neutral position using the head-tilt/chin-lift technique from the patient's side when alone.

• Place the mask over the mouth and nose of the patient starting from the bridge of the nose, then place the bottom of the mask below the mouth to the chin (the mask should not extend past the chin).

• Seal the mask by placing the "webbing" between your index finger and thumb on the top of the mask above the valve while placing your remaining fingers on the side of the patient's face. With your other hand (the hand closest to the patient's chest), place your thumb along the base of the mask while placing your bent index finger under the patient's chin, lifting the face into the mask.

7.2.4 Performing CPR for an Adult

• **STEP 1: Check the scene for immediate danger:** Make sure that you are not compromising your own safety by administering CPR to someone else. Is there a fire? Is the person lying on a roadway? It is important to do whatever is necessary to move yourself and carry the other person to safety.

• **STEP 2: Assess the victim's consciousness:** Gently tap his or her on their shoulder and ask, "Are you OK?" If the person responds in affirmative in a loud or clear voice, CPR is not required. Instead, one should undertake basic first aid and take measures to prevent or treat shock and assess whether there is a need to contact emergency services. If the victim is not responsive, the following steps should be undertaken.

• **STEP 3: Do not check for a pulse:** Unless you're a trained medical professional, odds are you'll spend too much valuable time looking for a pulse when you should be doing compressions.

- **STEP 4: Check for breathing:** Make sure that the airway is not blocked. If the mouth is closed, press with your thumb and forefinger on both cheeks at the end of the teeth and then look inside. Remove any visible obstacle that is in your reach but never push your fingers inside too far. Put your ear close to the victim's nose and mouth, and listen for slight breathing. If the victim is coughing or breathing normally, do not perform CPR.

Fig.7.2.15(a): Performing CPR for an Adult

- **STEP 5: Place the victim on his or her back:** Make sure he or she is lying as flat as possible-this will prevent injury while you're doing chest compressions. Tilt their head back by using your palm against their forehead and a push against their chin.
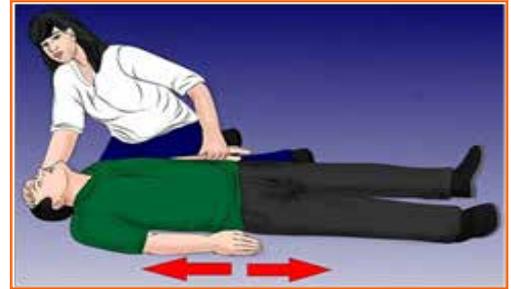
Fig.7.2.15(b): Performing CPR for an Adult

- **STEP 6:** Place the heel of one hand on the victim's breastbone, 2 finger-widths above the meeting area of the lower ribs, exactly in the middle of the chest.

Fig.7.2.15(c): Performing CPR for an Adult

- **STEP 7:** Place your second hand on top of the first hand, Palms-down, interlock the fingers of the second hand between the first.

Fig.7.2.15(d): Performing CPR for an Adult

- **STEP 8:** Position your body directly over your hands, so that your arms are straight and somewhat rigid. Don't flex the arms to push, but sort of lock your elbows, and use your upper body strength to push.

Fig.7.2.15(e): Performing CPR for an Adult

- **STEP 9:** Perform 30 chest compressions. Press down with both hands directly over the breastbone to perform a compression, which helps the heart beat. Chest compressions are more critical for correcting abnormal heart rhythms (ventricular fibrillation or pulseless ventricular tachycardia, heart rapidly quivering instead of beating). You should press down by about 2 inches (5 cm).

Fig.7.2.15(f): Performing CPR for an Adult

- **STEP 10:** Minimize pauses in chest compression that occur when changing providers or preparing for a shock. Attempt to limit interruptions to less than 10 seconds.
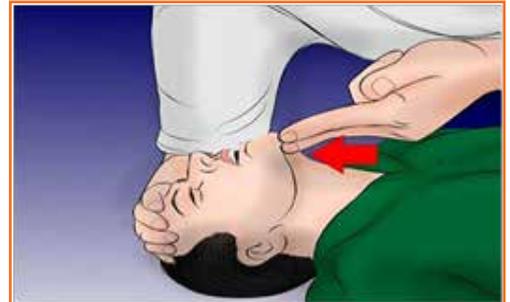
Fig.7.2.15(g): Performing CPR for an Adult

- **STEP 11:** Make sure the airway is open. Place your hand on the victim's forehead and two fingers on their chin and tilt the head back to open the airway. If you suspect a neck injury, pull the jaw forward rather than lifting the chin. If jaw thrust fails to open the airway, do a careful head tilt and chin lift. If there are no signs of life, place a breathing barrier (if available) over the victim's mouth.

Fig.7.2.15(h): Performing CPR for an Adult

- **STEP 12:** Give two rescue breaths (optional). If you are trained in CPR and totally confident, give two rescue breaths after your 30 chest compressions. If you've never done CPR before, or you're trained but rusty, stick with only chest compressions.
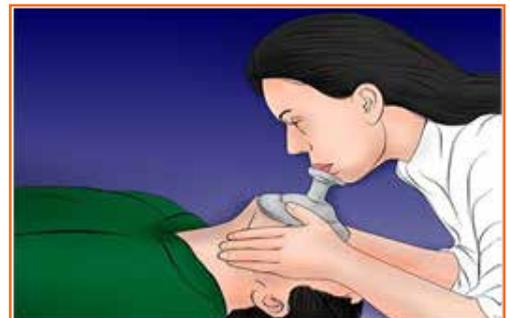
Fig.7.2.15(i): Performing CPR for an Adult

- **STEP 13:** Repeat the cycle of 30 chest compressions. If you're also doing rescue breaths, keep doing a cycle of 30 chest compressions, and then 2 rescue breaths; repeat the 30 compressions and 2 more breaths. You should do CPR for 2 minutes (5 cycles of compressions to breaths) before spend time checking for signs of life.

7.2.5 CPR Using AED

- **STEP 1:** Use an AED (automated external defibrillator). If an AED is available in the immediate area, use it as soon as possible to jump-start the victim's heart. Make sure there are no puddles or standing water in the immediate area.

Fig.7.2.16(a): Performing CPR for an Adult

- **STEP 2:** Fully expose the victim's chest. Remove any metal necklaces or underwire bras. Check for any body piercings, or evidence that the victim has a pacemaker or implantable cardioverter defibrillator (should be indicated by a medical bracelet) to avoid shocking too close to those spots. Make sure the chest is absolutely dry and the victim is not in a puddle. Note that, if the person has a lot of chest hair, you may need to shave it, if possible. Some AED kits come with razors for this purpose.

Fig.7.2.16(b): Performing CPR for an Adult

- **STEP 2:** Attach the sticky pads with electrodes to the victim's chest. Follow the instructions on the AED for placement. Move the pads at least 1 inch (2.5 cm) away from any metal piercings or implanted devices. Make sure no one is touching the person, when you apply the shock.

Fig.7.2.16(c): Performing CPR for an Adult

- **STEP 8:** Press analyse on the AED machine. If a shock is needed for the patient, the machine will notify you. If you do shock the victim, make sure no one is touching him or her.

- **STEP 9:** Do not remove pads from the victim and resume CPR for another 5 cycles before using the AED again. Stick on adhesive electrode pads are intended to be left in place.

Fig.7.2.16(d): Performing CPR for an Adult

7.2.6 Chain of Survival

Chain of Survival is a sequential process for providing treatment to victims of SCA outside of a hospital setting. More people can survive SCA if the following steps occur in rapid succession:

- Cardiac arrest is immediately recognized and the emergency response system is activated.

- Early cardiopulmonary resuscitation (CPR) is started with an emphasis on chest compression.

- Rapid defibrillation occurs.

- Effective advanced life support is begun.

- Integrated post-cardiac arrest care is provided.

- Quick execution of each step is critical because the chances of survival decrease 7 to 10 percent with each passing minute.

UNIT: 7.3: Sensitivity towards People with Disability and Gender Equality

Unit Objectives 🎯

At the end of this unit, participants will be able to:

1. Elaborate the details about PWD Sensitization.
2. Explain gender sensitization and equality.

7.3.1 What is sensitization?

The process of becoming highly sensitive to specific events or situations (especially emotional events or situations) Sensitization doesn't always mean feeling the same pain the other person is feeling. It means knowing that the pain exists and there is a different way of living. Despite how the person lives, he or she has a right to exist in a society. It's an attitudinal change and very much required in current time.

Sensitivity to People with Disability

According to the Oxford Dictionary, a disability could be described as an impairment which can be Intellectual, limitations, cognitive, improvement, sensory, exercise or the mixture of all these. Incapacity impacts a person's activities and may happen at birth. Sometimes, it could happen in adulthood. In the medical model, individuals with certain physical, intellectual, psychological and mental impairments are taken as disabled. According to this, the disability lies in the individual as it is equated with restrictions of activity with the burden of adjusting with environment through cures, treatment and rehabilitation.

People with disabilities are subject to multiple deprivations with limited access to basic services, including education, employment, rehabilitation facilities etc. To work towards an inclusive, barrier free society by raising awareness and policy actions, there is a need to have comprehensive reliable statistics on people with disability and their socio-economic conditions

The Constitution of India ensures equality, freedom, justice and dignity of all individuals including persons with disabilities and mandates an inclusive society for all.

The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation Act, 1995) came into force on February 7, 1996.This was an important landmark and was a significant step in the direction of ensuring equal opportunities for persons with disabilities and their full participation in the nation building. The Act provides for both preventive and promotional aspects of rehabilitation like education, employment and vocational training, job reservation, research and manpower development, creation of barrier-free environment, rehabilitation of person with disability, unemployment allowance for the disabled, special insurance scheme for the disabled employees and establishment of homes for persons with severe disability etc.

In order to give focused attention to Policy issues and meaningful thrust to the activities aimed at welfare and empowerment of the Persons with Disabilities, a separate Department of Empowerment of Persons with Disabilities (Divyangjan) (DEPwD) under Ministry of Social Justice & Empowerment was set up in May 2012.

Empowerment of persons with disabilities is an inter-disciplinary process, covering various aspects namely, prevention, early detection, intervention, education, health, vocational training, rehabilitation and social integration.

The disability community is very diverse. Some individuals with a disability may be employed, while others may rely on public benefits as their main sources of income. Some of the public benefits they receive might have limitations. Income, resource and savings limits often prevent individuals from enhancing their financial wellbeing and self-sufficiency as they concentrate efforts on retaining their benefits

Rather than charities, disabled people need sensitivity of the society and initiatives to make their life easy.. New and existing programs are available to help people with disabilities develop skills in financial management and self-sufficiency. Government keeps trying to support in every possible manner so that they can earn their livelihood.

We learn so many virtues from disabled people like patience, courage, positive thinking etc .Hence; this gives us all the more reasons to have a developmental approach towards them. With so many technological breakthroughs happening all over the world, the Governments have spent in Research and development and innovations which would make the life of disabled people happier and easier.

For example, the invention of artificial limbs caused a revolution. They are available to the most disabled people and they can reap benefits from them.

Also, educating them and giving them jobs based upon their physical condition will make them feel a "sense of achievement" and increase their happiness quotient.

Also, disabled people should be trained by specialists in their fields so that they can try and overcome their shortcomings to the maximum extent possible and lead a life which is satisfactory and happy.

7.3.1.1 Myths and Stereotypes

We are all individuals with commonalities and differences and that is true for persons with disabilities as well. As an instructor, it is important to remember to not show pity or put an individual up on a pedestal – everyone should be treated as equals regardless of one's abilities. When working with people with disabilities, it is important to avoid stereotypes. To debunk common stereotypes and myths, below are some key items to note about persons with disabilities:

- Persons with disabilities are all ages, come from diverse cultures and financial backgrounds.
- People with disabilities work.
- People with disabilities have families.
- Not all persons with disabilities are on or receive benefits such as ESI, Medicaid, etc.
- People with disabilities have goals and dreams.
- All people with disabilities do not necessarily want or need assistance.
- People who are blind or have low vision may wear glasses.
- People who are deaf may use their voice and may be able to read lips, but not all.
- Not all people who use wheelchairs are completely paralyzed – some may be able to walk short distances.
- Delayed or slow speech is not necessarily a sign of a slowed mental process.
- Persons with learning disabilities can be highly intelligent individuals; they simply have a different way of learning.

7.3.1.2 People's first language

Positive language empowers people and helps them feel respected and important. When writing or speaking about people who have a disability, it is important to put the person first, usually addressing them by name or including them as a member of a group, such as a student or co-worker. Group designations such as "the blind," "the retarded" or "the disabled" are inappropriate because they do not reflect the individuality, equality or dignity of people with disabilities.

Here are some general tips to keep in mind:

• **Offer to shake hands when introduced.** People with limited hand use or an artificial limb can usually shake hands and offering the left hand is an acceptable greeting.

• **Treat adults as adults!** Address people with disabilities by their first names only when extending that same familiarity to all others.

• **Ask First.** If you offer assistance (always ask before assisting someone), then wait until the offer is accepted. Then ask the individual with a disability for instructions on how you may assist them.

• **Relax.** Don't be embarrassed if you happen to use common expressions such as, "See you later" or "Did you hear about this?", that seem to relate to a person's disability

• **Give them respect** as any other individual.

7.3.2 Gender Sensitization

What is Gender?

The socially constructed and culturally defined roles, responsibilities, attributes, and entitlements assigned to people based on their sex assigned at birth in a given setting, along with the power relations between and among the assigned groups.

Gender equality is the concept that all human beings, irrespective of their sex or gender identity, are free to develop their personal abilities and make choices without the limitations set by stereotypes, rigid gender roles, or discrimination.

What is Gender Bias?

• Gender bias is the tendency to make decisions or take actions based on preconceived notions of capability according to gender. People with disabilities have families.

• Not all persons with disabilities are on or receive benefits such as ESI, Medicaid, etc

It is the process of raising awareness and inculcating empathy about one's own and the other gender. Since one of the most common area of discrimination is based on gender, there is a great need to sensitize the youth on gender related issues. This would strongly contribute in ensuring that equal roles, responsibilities, opportunities, and expectations are assigned to both men and women. Training on gender sensitization will help break the stereotypes around job roles, women's participation in particular trades, and would support in equal participation of men and women in the decision-making process.

7.3.2.1 Why is the Need for Gender Sensitivity

1. **Couple communication and decision-making**

   The role of men and women in household decisions about finances, food consumption, childcare, healthcare or travel often reflect power relations in the home. When power relations are unequal, it results in not only

one sided biased decision but also can increase risky sexual behavior and intimate partner violence. While it is important for women to play a larger role in important household decisions, such as financing, men should also become more involved in healthcare and household decisions around health.

Couple communication and joint decision-making have a positive impact on health outcomes.

2. **Access to opportunities and resources**

Gender-related factors also affect health outcomes through differential access to opportunities and resources like education, employment and healthcare.

• **Education:** Gender roles often restrict both boys' and girls' access to education which can have long-term effects on health outcomes. For example, more educated women and formally employed women are more likely to use family planning, which reduces the risk of unwanted pregnancy and potentially, the need for abortion

• **Employment:** In many contexts, women's traditional responsibilities are primarily domestic and they do not work outside the home. When they do, they are often part of the informal economy, in lower-paid and less-skilled jobs without opportunities to join unions or trade organizations that advocate for better pay or rights

• **Healthcare:** Women's mobility may limit their access to health services and existing programs intended to increase knowledge of family planning or other health information. Men often do not go to health clinics for their own care or with their partner because pregnancy and child health are seen as a "woman's domain.".

3. **Social, cultural and gender norms**

Norms related to gender, such as gender preference, masculinity and fertility, also influence health outcomes.

• **Gender Preference:** In India, China, and to a certain extent in some African countries, there is a gender bias in child healthcare. Preference for boys can lead to financial resources for education and other services, like healthcare, being differentially allocated within households. Reasons for this preference vary, and include the perception that boys will financially support their parents when they are older, and that families are obliged to pay dowries when their daughters marry.

• **Fertility:** In many areas, a woman's value is often measured by her ability to have children. This can lead women to put their own health or the health of their family at risk by starting pregnancy too early, when not yet physically matured, and giving birth without proper spacing or having more children than the household can support. For couples facing fertility issues, women often bear the brunt of household and community-level stigma and abuse for failing to conceive.

• **Masculinity:** Masculine ideas associating men with strength, virility, dominance and power may increase the number of sexual partners and inhibit the use of condoms, thereby increasing the risk for unwanted pregnancy or the transmission of STIs or HIV through unprotected sex or sexual violence. These masculine norms also may promote or normalize violence against women

Summary of Need for Gender Sensitization

• To provide balance to the society

• To provide equal opportunities to women and men

• To gauge views of all sections of society

• To distribute resources evenly

• To allow same personal freedom for men and women

• To even out the gender bias present in the society

How to stop gender bias

- Education that helps create attitudinal shifts towards gender bias and activities to spread awareness.

- Continuous efforts towards breaking myths and stereotypes around gender.

- Ensuring State accountability to implement various schemes, policies, laws, constitutional guarantees and international commitments.

- Institutionalizing gender sensitive processes within various systems such as law and programmes.

- Encouraging community ownership in preventing violations based on gender discrimination.

Sexual harassment at workplace is an extension of violence in everyday life and severely affects. Women's right to work in a safe and secure environment. While it is the responsibility of every employer to ensure safety of women at the workplace, it is also important for the trainees, both men and women, to be aware of all aspects of sexual harassment at the workplace. Skill training for both male and female trainees and professionals in the skilling ecosystem is centered around the following issues:

- What constitutes workplace sexual harassment?

- Where can the aggrieved complain about the same?

- What are the rights of the aggrieved?

- What is the redressal mechanism?

- Which are the bodies involved in addressing these complaints?

- What are the possible actions that can be taken against the accused?

Resources

Scan the QR code or click the link to access the videos or e-book.

Description	QR Code
Health related threats in apparel industry and control on them	https://youtu.be/POlQ27GQZp0
First aid	https://youtu.be/DQ7JPNgU8Wg

Gender sensitization	 https://youtu.be/Wi1exdO1lig

Industry Visit

The purpose of visiting an apparel manufacturing unit is to get hands on knowledge about various processes involved in the work of a Boutique Manager. During the visit you have to interact with hand embroiderer and supervisors to understand how work is done in industry. Make sure that you keep a notebook handy and note down any important points that come up during your interaction at the apparel manufacturing unit. When you go to an apparel manufacturing unit, you should:

- Know about the production system.
- Understand the machine safety and maintenance rules of industry.
- Analyze how Boutique Managers:
  » Use and maintain personal protective equipment as per protocol.
  » Maintain a healthy lifestyle and guard against dependency on intoxicants.
  » Follow environment management system related procedures.
  » Identify and correct (if possible) malfunctions in machinery and equipment.
  » Store materials and equipment in line with manufacturer's and organizational requirements.
  » Minimize health and safety risks to self and others due to own actions.
  » Monitor the workplace and work processes for potential risks and threats.
  » Carryout periodic walk-through to keep work area free from hazards and obstructions, if assigned.
  » Report hazards and potential risks/threats to supervisors or other authorized personnel.
  » Participate in mock drills/ evacuation procedures organized at the workplace.
  » Take action based on instructions in the event of fire.
- Ask questions to Boutique Managers/supervisors if you have any query.

Exercise

1. Heart rate of a healthy person should be:

    a) 40-60 beats per minute

    b) 70-110 beats per minute

    c) 80-100 beats per minute

    d) 60-100 beats per minute

1. What is not in Four A's of First Aid:

    a) Awareness

    b) Assessment

    c) Action

    d) Attitude

2. The symptoms of fracture:

    a) Pain

    b) Swelling

    c) Visible bone

    d) All of the above

3. Which degree of burn is explained as; Extremely Serious and requires many years with repeated plastic surgery and skin grafting to heal?

    a) 1st Degree Burn

    b) 2st Degree Burn

    c) 3st Degree Burn

    d) 4st Degree Burn

4. .... is a level of medical care which is used for victims of life-threatening illnesses or injuries until they can be given full medical care at a hospital.

    a) Basic life support (BLS)

    b) CPR

    c) ABC

    d) All of the above

8. Comply with Industry, Regulatory and Organizational Requirements and Greening of Job Roles

Unit 8.1 - Follow Regulatory and Company's Rules

AMH/N0104

Key Learning Outcomes

At the end of this module, participants will be able to:

1. Carryout work functions in accordance with legislation and regulations, organizational guidelines and procedures.

2. Seek and obtain clarifications on policies and procedures, from your supervisor or other authorized personnel.

3. Apply and follow these policies and procedures within your work practices.

4. Provide support to your supervisor and team members in enforcing these considerations.

5. Identify and report any possible deviation to these requirements.

6. Explain the effect and importance of Greening of Job roles.

UNIT 8.1: Follow Regulatory and Company's Rules

Unit Objectives 🎯

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5. Identify and report any possible deviation to these requirements.

6. Explain the effect and importance of Greening of Job roles.

8.1.1 Defining Compliance for Your Organization

According to Merriam Webster the dictionary definition of compliance is as follows:

1. The act or process of complying to a desire, demand, proposal, or regimen, or to coercion.

2. Conformity in fulfilling official requirements.

3. A disposition to yield to others.

4. The ability of an object to yield elastically when a force is applied.

Fig.8.1.1: Regulatory Compliance

Supervisory compliance for industries, world- wide falls under the second definition. There are many managers, general councils, and policy officers that would consent in agreement at any of the other definitions as well. Let's discuss, what is compliance? Whether an organization is confronting an external regulatory compliance from a government agency, or seeks to comply with its own organizational mandates, policies or procedures, compliance in actuality means conforming to requirements and a proof that your organization has done so. This is usually attained by the scheming and development of managerial policies that will map out the projected code of conduct.

From a policy's point of view, there are many aspects that impact an organization's policies, including legislative and regulatory requirements, organizational best practices, and the market demands. If we look at government/public sector agencies, financial service businesses, and healthcare providers - we find that they are controlled and must develop internal policies in order to ensure compliance. The actual trial comes from the juncture of practice with the laid policy.

After that, they must adopt ways to enforce those policies and measure their effectiveness. Initially this may seem to be an easy and convenient task. But the dilemma is creating a policy – without any mechanism, may it be manual, automated, or third-part, to measure and monitor compliance of the policies is very difficult. In order to build effective policies, we must not only have an understanding of the statutory requirements that will shape

the policy within our organizations, but how these policies relate to the business practices, the workforce, the methodologies of operations and the technologies within the corporation.

Irrespective of the requirements to which an organization must obey, a well-planned model is essential which will be one that assimilates strategies with their people, processes, and technology. This includes education, monitoring, and enforcement. Organizations should look to use machineries and to develop procedures that make it easier to do the right thing or to simply disregard the policy all together. In conducting performance audits, an assessment should be made of compliance with applicable laws and regulations when necessary to satisfy the audit objectives. The auditor should design the audit to provide reasonable assurance of detecting illegal acts that could significantly affect audit objectives. The auditor also should be alert to situations or transactions that could be indicative of illegal acts that may have an indirect effect on the audit results.

8.1.2 Significance of Compliance in Indian Garment Industry

Compliance is the standard for the product which ensures that it is aligned to its industry's qualitative demands. This also includes audits and inspections which are crucial to a proper and formal work environment. Compliance and its demand is rapidly growing in today's industrial scene since globalization of manufacturing standards has also created a demand for ethically created products. This standard of compliance is crucial because of the increase in export of garments from India.

Social Compliance

The treatment of the employees by its business constitutes social compliance. This also includes their environment and their personal perspective on social responsibility as an employee. The treatment of employees regarding wages, work conditions and working hours. A compliance audit is necessary in order to determine if the company meets standard environmental laws.

Compliance Audit

Process Safety Management, Risk Management Programs, and Process Security Management are all organised and provided by audits and assessments. Compliance and its verification is carried out with audits that focus particularly on these policies and procedures. The design and implementation of these audits ensures this compliance. Additionally, all sorts of deficiencies can be addressed and solved through corrective action.

In India, compliance audit consists of a thorough examination of orders, regulations, rules and directions for dealing with prudence, legality, transparency and adequacy. It is the job of auditors to collect information by reviewing documents, visually observing the site and staff interviews. This data is cross checked with applicable regulations and permits to ensure how well the operation is when sieved through applicable and required legalities.

There are three main phases of compliance audit in India:

1. **Pre-audit:** It includes planning and organising the audit; establishing the audit objectives, scope and etiquette; and reviewing the design of the program by inspecting documentation

2. **On-site audit:** It includes conducting personnel interviews, reviewing records, and making observations to assess program implementation

3. **Post-audit:** It includes briefing the management on audit findings, and preparing a final report

Therefore, Indian apparel manufacturers need to follow Government guidelines, and social compliance standards not only within their sphere of operations, but also insist their vendors, distributors, and other collaborators involved in the supply chain to do the same.

8.1.2.1 Core Labour Standards

International labour standards have grown into a wide-ranging system of gadgets on work and social policy, backed by a administrative system intended to address all sorts of complications in their submission at the national level

• Removal of Discernment in Employment and Occupation

• Freedom of Association

• Right to Collective Bargaining

• Elimination of all Forms of Forced or Compulsory Labour

• Effective Abolition of Child Labour

Apparel industry players would ensure that labour contractors don't involve forced labour or child labour and get the supply chain of the suppliers audited. Apparel Export Promotion Council (AEPC), a top organization of Indian apparel exporters, has envisioned a garment factory compliance program 'Disha' -Driving Industry towards Sustainable Human Capital Advancement. The prime objective of this body is to make India a global benchmark for social compliance in apparel Industrial. This Common Compliance Code design will prepare the Indian apparel industry on a mutual platform towards a more social and ecologically compliant industrial atmosphere.

8.1.3 India Adopting Universal Standards on Child Labour

The compliance level of garment factory is very high for Indian exporters. To ensure that all standards are being complied with, the big international companies, mindful of their branding, often generate and follow their own compliance standards. Numerous U.S. companies have incorporated "child labour" in their code of conduct, due to tenacious signal of child exploitation in the industry.

8.1.3.1 Common Compliance Code

There is a compliance exhaustion in the Apparel Industry,. Although they are trading with the global brands, the apparel sellers still don't consent that compliance is an integral management practice. The Indian apparel export industry has been indisputable to implement zero tolerance on child labour and cleanse the supply chain.

"This common compliance code will not only give the opportunity for the industry to negate international claims against child labour promotion in the garment industry, but will also help to improve the image of the industry and win more international businesses," as per PremalUdani, Chairman, Apparel Export Promotion Council (AEPC).

8.1.4 Role of AEPC in Indian Garment Industry

The apparel industry of India is one of the significant export segments. It enjoys a good global ranking because of its quality and price affordability. But there is an emerging need to increase effectiveness in the social domain as the industry faces various labour, compliance and background situations.

Being a labour rigorous industry, social compliance is becoming an integral issue for this sector. The apparel export promotion council of India (AEPC) under the textiles ministry is plateful domestic textile trade to follow the global norms through development and application of tools to help workshops certify, monitor and improve universal standards.

Fig.8.1.2: AEPC Logo

AEPC's assistance to garment exporters

AEPC brings about invaluable backing to Indian garment exporters and also the international buyers who select India as their favoured tracing terminus for garments. The body today has grown-up to become the most powerful connotation for promotion and facilitation of garment exports. With an objective of structuring a strong ground for Indian exporters, AEPC is devoted to provide various podiums which would help in increasing garment exports.

Role of Apparel Export Promotion Council in India

In India, the Apparel Export Promotion Council (AEPC) is committed to legal compliance and principled business Practices. It encourages members/exporters to comply with all applicable laws and regulations of the country to meet international compliance standards. Further, the council has designed a garment factory compliance program 'Disha' (Driving Industry towards Sustainable Human Capital Advancement) that aims to spread awareness regarding the importance of compliance among garment exporters.

8.1.5 Indian Garment Industry and Social Responsibility

The apparel industry of India, is one of the biggest segments among the various industries existing. It is also one of the oldest and an eminent industry in terms of output, investment and employment. A sector which has a global market share and has earned reputation for its permanence, worth and magnificence. The industry is growing at a fast pace with change in customer taste and inclinations. There are numerous factors impacting a change in customer preferences. Few of them are here:

- Rise in disposable incomes

- Government policy focused on fast-track growth

- Convenience of shopping at departmental stores and shopping malls

- Increasing demand for branded apparels and fashion accessories

- Boom in the retail industry

8.1.5.1 International Labour Standards

The Indian apparel industry had established itself substantially not just in the domestic but global market too. The improved density from international apparel buyers to comply with labour principles and rights in Indian garment factories has resulted into a vast number of labels and code of conduct.

8.1.5.2 Corporate Social Responsibility

Corporate social responsibility (CSR) fundamentally connotes that the establishment should work in a principled way. It should work in the best interest of the parties associated with it. The notion of social accountability and responsibilities in Indian apparel sector is fastening acceptance. Increasing number of companies are tiresome to work in a mode to defend the interests of the workforce, clients, contractors and the society.

8.1.5.3 Social Responsibility in the Garment Industry

Garment firms have social responsibility associated with workforce and the surroundings. Social responsibility in the global clothing industry gives a deep examination of labour practices and values. But the ways by which the various organisations takes up to accomplish their social accountability may be different. A garment factory can fulfil its social responsibility in the following manner:

- By creating and providing a challenging environment to the workforce.
- Creation and provision of fair book of policies for any kind of employee dispute, if any.
- Affirm a safe and positive working environment for the employees.
- Prohibit child labour and abolish any kind of child abuse.
- Provision of equal opportunities to the employees to voice their feedback and have an effective policy for the solution of dispute.
- Ensure ethical recruitment, training, remuneration, appraisal and other policies.

8.1.6 Indian Apparel Trade and Compliance Standards

With the increasing globalisation, a lot of prominence has been placed on global compliance standards in the garment industry. Factories involved in the international trade must keep a proper check of the garment factory compliance at regular interludes. Therefore, every apparel export business needs to have a proper understanding of compliance rules for foreign trade.

8.1.6.1 Why Code of Ethics is Required

The code of ethics is concerned with the quality of the products and services from the workstations along with the working environment that should meet the provisions of audits and assessments. If followed sincerely, these ethics will result into:

- Cumulative national affordability in terms of social compliance.
- Growing competitiveness of small scale industrialists.
- Dropping burden on manufacturers.

Some of the compliance codes in Indian garment industry are listed below.

8.1.6.2 Working Hour & Wage Rate Compliance

- Garment workshops should ensure a confirmation that employees should get minimum wages as per the domestic law and according to their working hours spent by them in the industry.
- Employer should confirm an equal wages to both men and women employees who are performing the same work or work of a similar nature.
- Workforce employed for more than nine hours on any day or for more than 48 hours in any week, shall be qualified to wages at premium legal rates for such overtime work.
- Every employee must be entitled to one holiday in a week. Whenever a worker is required to work on a weekly holiday, he is to be allowed a compensatory holiday for each holiday so lost.

8.1.6.3 Workplace & Work Environment Compliance

• Businesses units should see that they are providing a proper clean, hygienic, well-ventilation, sufficient light and air to provide the workforce with standard work environment. A comfortable workstation with a clean and neat workplace is a mandate.

• Indian garment industries should ensure that the workers are given a comfortable sitting chair with back support and proper leg space.

8.1.6.4 Non-discrimination Compliance

Under federal and state laws, it is in contradiction of the law for proprietors to differentiate staffs and job applicants and/or harassment to occur with their organizations. It is also against the law to treat people unethically or bother them because of the age, disability, homosexuality, marital or domestic status, race, sex or transgender status of any relative, friend or colleague of a job applicant or employee Employers, managers and supervisors must treat all their job applicants and employees on the basis of their individual merit and not because of irrelevant personal characteristics. They must also do their best to make sure that their employees are not harassing any other job applicant or employee.

8.1.6.5 Social Compliance in India

Religion, community, culture or belief characteristics should never be the basis of distinction among employees by the organisation. All the terms and conditions of employment should be based on a person's ability to do the job. The mandate for social compliance is growing every day. One can accomplish a dynamic and vigorous compliance system only when the workforce is provided with an equal stand to voice their concern and have consultative instrument at the workplace.

The Apparel Export Promotion Council of India (AEPC), a summit framework of Indian apparel exporters, runs all social compliance services to meet international global standards. This council trains and monitors industrial unit to upgrade the factory conditions and labour values and standards.

8.1.7 Health and Safety Compliance in Indian Garment Industry

Apparel industry has won increased attention from consumers, social workers, welfare organisations and trademarked international buyers. Many global players are demanding that their "code of conduct" should be complied to, before entering into an agreement. Nowadays, continuous observance to quality standards and employee contentment have become significant bounds for gauging the company's performance.

Apart from the growing quality of outputs that meet transnationally recognised standards, it is essential for the suppliers to improve safety and health compliance code and provide proper working atmosphere in their work locations.

Numerous overseas countries have established various international compliance standards on safety and health compliance. Exporters should follow these codes to live on in the global market. One should not under-estimate the benefits drawn from regular drilling of compliance codes of conduct which can bring higher price of yields, less employee turnover rate, smooth trade relation as well as global image & status.

8.1.7.1 Need for Compliance Codes

There is prominent impact of social compliance on company's economic outcomes. Companies should adopt compliance code to protect their goodwill and brand name in the market. The Indian apparel industry needs to be hard-hitting on compliance rather than opposing with other developing countries manufacturing low-cost garments.

8.1.7.2 Compliance Code Guidelines

Apparel factories ought to contemplate the below mentioned guidelines when complying with safety and health compliance code standards:

- Trades should comply with international standard code, such as ISO or importing countries standard code to become competitive in international markets.

- It is necessary for workers involved in loading and unloading operations.

- Young aduls (between 15 to 18 years) are not allowed to work on any dangerous machine without sufficient training and supervision.

- Ear plugs or muffs should be given in places with excessive sound such as generator rooms and embroidery rooms.

- Factories should have effective fire extinguisher with proper usage instructions.

- Eye-wear and face shields should be a must, providing in areas with danger of flying objects, sparks, glare, hazardous liquids and excessive dust.

Code to protect their goodwill in the market

This industry needs to be tough on compliance rather than challenging with other developing countries manufacturing inexpensive garments. In India, the Apparel Export Promotion Council (AEPC) is committed to legal compliance and ethical business practices and encourages members/exporters to comply with all applicable laws and regulations of the country to meet international compliance standards.

The council has designed a garment factory compliance program 'Disha' (Driving Industry towards Sustainable Human Capital Advancement) that aims to spread awareness regarding the importance of compliance among apparel exporters.

8.1.8 Compliance Code Guidelines for Indian Garment Industry

The Indian apparel industry supports considerably to India's export earnings. India has industrialised as a major following destination for various buyers. The USA and the EU endure to be the most domineering markets for Indian apparel industry, bookkeeping for about two-third of India's textiles exports. These countries have been demanding upon compliance to certain social, environmental and safety standards and norms by the manufacture units involved in export business. Corporate codes of conduct that discourses labour standards vary from corporation to corporation and location to location. Some of the common Indian Garment industry compliance code guidelines are:

- Exporters must not be intricate in unfair labour practices but limited to interferences in matters regarding freedom of association.

- Exporters shall recompense workforce for all hours operated. Workers on a piece rate payment scheme or any other incentive scheme should be paid according to that.

- Exporters shall not illogically restrain the liberty of movement of workers, including movement in canteen during breaks, using toilets, accessing water, or to access necessary medical attention, as a means to maintain work discipline.

- Exporters are about to offer workers with paid annual leaves as required under local laws, guidelines and processes. Exporters shall not impose any undue limitations on workers' use of annual leave or taking any type of sick or maternity leave.

- There shall be no alterations in workers remuneration for work of equal value on the basis of gender, race, religion, age, nationality, sexual orientation, social political opinion, disability or ethnic origin.

- Exporters shall not threaten female workers with firing or any other employment conclusion that adversely distresses their service status in order to avert them from getting married or becoming pregnant.

- Exporters shall confirm that proper ventilation systems are installed within their premises to prevent airborne exposures which may affect the health of workers.

- Members shall not custom any form of physical or mental, emotional violence, threats, harassment, or abuse against workers seeking to form organisations or participating in union activities, including strikes.

- Workers shall be permitted to at least 24 successive hours of rest in every seven-day period. If workers must work on a rest day, another successive 24 hours rest day must be provided.

- Exporters shall pay workers at least the legal minimum wage or the usual industry wage, the one that is Higher. This indeed is the most essential code of compliance for Indian Industry.

- Garment exporters must ensure that the minimum age requirement to unsafe employment shall not be less than 14 years. This is the most significant concern in the country. Each worker has the right to enter into and to terminate their employment freely. Indian apparel makers need to follow all the compliance rules to comply with global standards. Often companies adopt industry compliance codes to project a positive image and protect their goodwill in the market. The Indian garment industry needs to be strong on compliance instead of competing with other developing countries manufacturing inexpensive garments.

Indian apparel makers need to follow all the compliance rules to comply with global standards. Often companies adopt industry compliance codes to project a positive image and protect their goodwill in the market. The Indian garment industry needs to be strong on compliance instead of competing with other developing countries manufacturing inexpensive garments.

8.1.9 India Complying with International Standards on Child Labour

Child labour has been a grave crime in India. It still exists. Children are in poverty, ignorance, and corruption due to illiteracy. Child labour superfluities under many conditions such as discernment (based on gender, ethnic, or religious issues), inaccessibility of educational and other substitutes, weak enforcement of child labour laws, etc. Large global firms, conscious of their image, often set up their own compliance standards for the exporters to ensure that all standards are being complied with.

Various companies of U.S originality have included child labour in their code of conduct, due to tenacious evidence of child exploitation in the industry. In worldwide market, the buyer's compulsory requirement is to have an audit. As India is a leading garment exporter, the level of garment factory compliance is very high for Indian exporters. The child labour issue is one of the very important aspect that the audit checks. Therefore, all the export units must be highly compliant on issues related to child labour.

8.1.6.1 Code of Conduct for Garment Exporters

- Garment exporters must safeguard that the bottom limit of the age requirement to non-hazardous employment should not be less than 14 years. Moreover, all young workers (between 14 to 18 years) must be sheltered from doing any work that is likely to be dangerous or that may be injurious to their health and physical, mental, social, or moral development. Exporters must detect all legal necessities for work being performed by lawful young workers.

- Further, the trainees or occupational students shall not be under the legal age for employment (as provided under the applicable laws). They cannot be used on regular production lines as long as they are trainees and unless their pay and other benefits are at par with the regular workforce.

- A proper process is followed for checking the age of the workers. The minimum certification and credentials required to be maintained shall include- proof of age certificates by registered/ licensed dentists, birth certificate, school leaving certificate, national identity like passport, driving license, voter card etc. or any other document required under the applicable laws.

Apparel industry players would now make sure that labour contractors don't engage child labour and get the supply chain of the suppliers audited. Apparel Export Promotion Council (AEPC) has intended a garment factory compliance program 'Disha' (Driving Industry towards Sustainable Human Capital Advancement) to make India a global benchmark for social acquiescence in apparel manufacturing and export. This Common Compliance Code project will prepare the Indian apparel industry on a mutual platform towards a more social and environmentally accommodating industrial environment.

8.1.10 Green Jobs

"'Green jobs' are defined as jobs that reduce the environmental impact of enterprises and economic sectors, ultimately to levels that are sustainable."

Green jobs can produce goods or provide services that reduce environmental impact, such as green buildings or clean technology adoption. An important section of green jobs lies in sustainable or clean manufacturing. India has already begun preparation towards a green transition by institutionalizing capacity buildings for green jobs through jobs, including legal regulations and skill mapping. The country is accelerating the expansion of green jobs in large industries like automotive, textile, brick manufacturing, power sector, and green buildings. It is gradually expanding its coverage to hard-to-abate sectors such as steel, thermal power plants, and manufacturing SMEs.

India will soon be the most populous country in the world – and home to one of the youngest populations. India is the world's third-largest energy consuming country, with 80 per cent of demand met by coal, oil and solid biomass. Despite its efforts, India is predicted to be among the top three emitters by 2030. Millions of Indian households are set to buy new appliances, air conditioning units and vehicles.

Rapid growth is expected in building stock, other infrastructure, and construction materials. In recent years, India created a massive expansion in renewable energy. India's efforts at promoting LED lighting are a huge success story. Over 367 million LED bulbs, 7.2 million LED tube lights and 2.3 million energy efficient fans have been distributed. This has brought big savings in power use, greenhouse gas emissions and household bills.

India has also taken steps to control plastic pollution, including bans on single-use plastic and strengthening extended producer responsibility. India has also committed to restoring 26 million hectares of degraded land by 2030. But India, like every nation, must do more. And doing more is in the best interests of the entire nation. A recent World Economic Forum estimate suggests that India's decarbonization journey represents a USD 15 trillion economic opportunity by 2070. This journey could create as many as 50 million net new jobs.

Fig.8.1.3: Diversified green jobs

About sustainability and sustainable workplace

Sustainability, greening the corporation, environment management are gradually becoming a part of the corporate vocabulary. The way the natural resources are extracted and consumed from earth, it is going to be very difficult to replenish them timely. It is often discussed in various forums that for generating the resources we spend in one year; earth takes around 1.5 years for the re-generation. Hence, it can be assumed that there will a requirement of the capacity of almost two Earths by 2030 to keep pace with the present natural resource consumption, and the requirement will be of three planets by 2050.

The current requirement is towards developing long-term, meaningful relationships, and self-discipline for attaining effective results. Thus, the design of the workplace is such that supports the basic and core idea in a more accommodating and comprehensive manner.

A Green workplace is an eco-friendly and focused organisation and leans towards the adoption of business practices that are justifiable in nature, energy efficient, and well suited to the complex as well as the ever changing world of business. It advocates the model based on 3Rs — reduce, reuse, recycle. It encompasses green competencies, green attitude, and green behaviour, which is combined synergistically to help the organisation become green or sustainable. Values are the essential characteristic that both employees and organisations uphold and operate at multiple levels (societal, organisational and personal), thus playing a fundamental role in shaping the organisation's culture with regard to a shift towards greater sustainability.

The idea of introducing green initiatives into the workplace can feel a little daunting at first. And while it may feel overwhelming trying to figure out where to start, there are actually lots of ways we can be more green in the office without bringing the whole forest inside, without huge cost implications and with long-term benefits to the company, employee well-being and future spend. Implementing a few simple changes for a more sustainable, green workplace can be really effective in reducing your business' impact on the environment.

Sustainability is now counted as one of the major pillars of apparel export business and a growth tool. Though its key areas involve saving of energy, water, more greenery in the factories, maximum use of natural resources, green factories, there are many other initiatives which are being taken by various companies as per their need, priorities, and with the changing sustainability landscape, bench marks and issues are also evolving. All these efforts are generating great results, bringing buyers closer to them and creating a sense of profitability and responsibility amongst the companies towards the people and the planet.

A Few Green workplace initiatives

1. Discourage food and water wastage
2. Switch off the lights or power when not in use
3. Switch off the sewing machine when not in use
4. Stop using Single use Plastic
5. Segregate waste as per waste management/disposal policy
6. Any sort of wastages like empty glasses/bottles/plastics/containers etc should be kept in a specific area to be recycled
7. Throw waste only in the allocated basket or trolley
8. Minimise use of paper
9. Use of LED lights
10. Installation of solar panels

Encourage similar practice at home also.

9. Soft Skills

Key Learning Outcomes

At the end of this module, participants will be able to:

1. Interpret the basic meaning of Soft Skills, their components and their benefits.

2. Interpret Work Readiness and its significance.

3. Explain communication process.

4. Explain about verbal and non- verbal communication.

5. Explain about the barriers in communication process.

6. Maintain cleanliness and hygiene.

7. Identify specific uniform guidelines

8. Maintain positive body language while speaking.

9. Interpret good eating habit and their impact on health.

10. Develop a positive attitude and behavior.

11. Explain team dynamics.

12. Explain how to manage relations.

13. Learn about Stress and anger management skills.

14. Learn to develop leadership qualities.

15. Explain about what is social interaction and what are social interaction behaviors.

16. Practice Self introduction in public.

17. Participate in group discussions in the class.

18. Identify the importance of team building and team work.

19. Explain about the time management.

20. Develop time management skills.

21. Learn about effective time planning.

22. Interpret the importance of resume.

23. Learn how to prepare a resume.

24. Explain the procedure of interview.

25. Practice mock interview.

26. Identify how to present themselves during an interview.

UNIT 9.1: Introduction to the Soft Skills

Unit Objectives

At the end of this unit, participants will be able to:

1. Interpret basic meaning of Soft Skills, their components and their benefits.
2. Explain the components and their benefits.

9.1.1 What is a Soft Skill?

Soft skills are personal attributes that describes an individual's ability to interact with others. Soft skills is a term often associated with a person's EQ, the cluster of personality traits, social graces, communication language, personal habits, friendliness and optimism that characterise relationship with other people. Soft Skills complement hard skills which are occupational requirements of a job and many other activities. They are related to feelings, emotions, insights and an inner knowing.

Soft skills have more to do with who we are than what we know. As such soft, skills encompasses, the character traits that decide how well one interact with others and are usually a definite part of one's personality.

According to a survey the long term success in job is 75 % due to soft skills and 25 % due to technical knowhow. Soft skills also determine how satisfied and happy one remains in professional and personal situations.

Fig.9.1.1: Soft skills

9.1.2 Components of Soft Skills

- Adaptability
- Emotional Strength
- Leadership Quality
- Team Playing Ability
- Decision Making
- Interpersonal Communication
- Negotiation Skills

9.1.3 Benefits of Soft Skills

Some of the benefits of Soft Skills are as:

- Increased credibility with customers.
- Increased customer satisfaction.
- More productive employees.
- Out service the competition.
- Recognition from the industry, employer and peers.
- New employment opportunities.
- Increased ability to perform on the job.

UNIT 9.2: Effective Communication

Unit Objectives 🎯

At the end of this unit, participants will be able to:

1. Explain the meaning of Communication and process of communication.
2. Elaborate about the types of communication.
3. Identify the barrier in effective communication.

9.2.1 Introduction

In the information age we have to send, receive and process huge number of messages everyday. But effective communication is more than just exchanging information, it also about understanding the emotion behind the information. Effective communication can improve relationship at home, work, and in social situations by deepening our connections to others and improving teamwork, decision making and problem solving.

Effective communication skill is a learned skill, it is more effective when it's spontaneous than formula.

9.2.2 The Communication Process

The process of conveying information through the exchange of thoughts, ideas, feelings, intentions, attitude by speech, gesture, writing etc. is known as communication. It is the meaningful exchange of information between two or more participants.
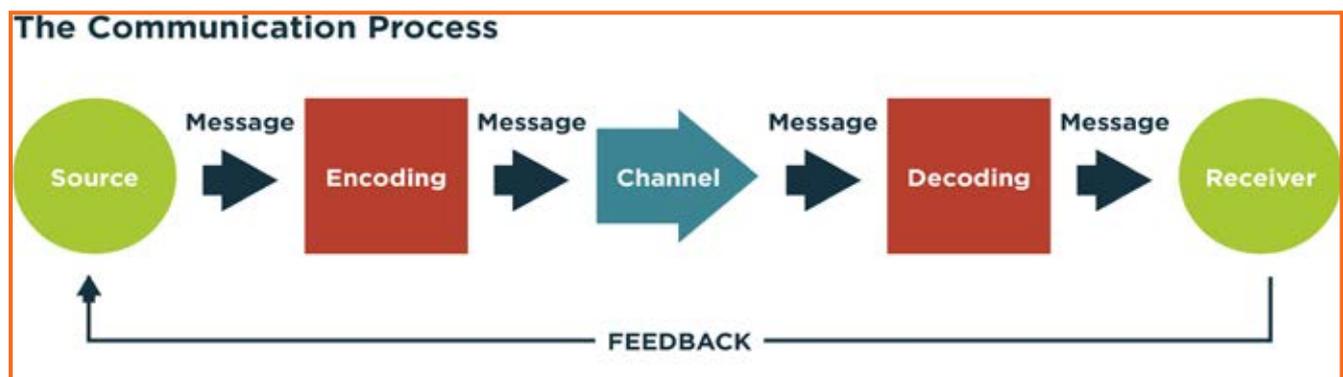

Fig.9.2.1: The Communication Process

Communication requires a sender, a message, a medium and a recipient. Communication process is complete only when a receiver understands the sender message.

Communication with other involves three steps:

1. **Message:** First information exists in the mind of the sender. It can be a concept, idea, formation and feeling.

2. **Encoding:** A message is sent to the receiver in words or other symbols.

3. **Decoding:** Lastly the receiver translates the words or symbols into a concept or information that a person can understand.

9.2.3 Verbal and Non-Verbal Communication

Communication can be categorized into three basic types. These include:

1. **Verbal Communication:** It means you listen to a person to understand their meaning. Verbal communications have the advantage of immediate feedback, are best for conveying emotions and can involve storytelling and crucial conversations.

2. **Written Communication:** letters, books, newspapers are printed messages in which you read their meaning. They are asynchronous, can reach many readers and are best for conveying information.

3. **Nonverbal Communication:** It means you observe a person and infer meaning. Both verbal and written communications convey nonverbal communication and are also supported by body language, eye contact, facial expression, posture, touch and space.

9.2.4 Communicating Effectively Identifying Barriers

There are many reasons why communications fail. These failures are the result of barriers in communication which may occur at any stage in the communication process. Barriers may lead to one's message becoming distorted and therefore risk wasting both time and money by causing confusion and misunderstanding. Effective communication involves overcoming these barriers and conveying a clear and concise message.

Fig.9.2.2: Barriers in Communication

A skilled communicator must be aware of these barriers and try to reduce their impact by continually checking understanding or by offering proper feedback.

Dealing with Barriers

• Use simple, easily understood word. Overcomplicating makes things confusing

• While speaking in other language always prepare beforehand

• Always give or take feedback to ensure the effectiveness of communication

• Be alert to cues

• Listen, listen, listen …

9.2.5.1 Some Tips for Active Listening

- Concentrate what the person is talking about and not on noise or other external distractions.

- Understand his emotions and you get it all right. Is the speaker angry, happy or plainly inquisitive?

- When the speaker is saying or telling something, don't break the chain of his thoughts.

- Don't avoid completing sentences of the speaker. Let them speak and speak only after they finish.

- It's alright if you haven't understood at first chance. Request to repeat the information.

- Practice makes a man perfect. Listen intently, focus and ignore other noises. Listen more and talk when required.

It takes a lot of concentration and determination to be active listener. Old habits are hard to break and if you're listening habits are not good then you have to break those. Start listening deliberately and remind yourself frequently that your goal is to hear truly what the other person is saying.

UNIT 9.3: Grooming and Hygiene

Unit Objectives

At the end of this unit, participants will be able to:

1. Maintain cleanliness and hygiene.
2. Keep their dress clean and tidy.
3. Maintain positive body language while speaking.
4. Enable to perform more of the do's than the don'ts.
5. Avoiding bad things such as gutkha and alcohol.

9.3.1 Personal Grooming

Personal Grooming is the term for how people take care of their body appearance. Once you enter your store/ department you need to be dressed in full uniform as per company norms, and also properly groom yourself as per the service standards.

Personal grooming not only makes us presentable to other people but good personal hygiene is essential for good health. Habits that are considered personal grooming include, bathing, dressing, applying makeup, hair removal and taking care of one's teeth and skin.

9.3.2 Positive Body Posture and Language

- Clean hands at all times as they mostly will be handling merchandise and customers.
- Avoid biting nails on the floor.
- Manage body odour & bad breath to be under control as they are offensive to the customer.
- Maintain straight & upright posture on the shop floor.
- Slouching on the floor, hands in pockets, hands on the hips are not courteous to the custome.
- Keep your hands out of your pocket
- Don't Fidget. Fidgeting is a clear sign of nervousness
- Keep your eyes forward. This indicates that you are interested in communication with other.
- Stand up straight with your shoulders back. It communicates confidence.
- Don't cross your arms when meeting other persons.

9.3.3 Personal Hygiene

Personal Hygiene is the set of practices to follow to preserve one's health. Maintaining a high level of personal hygiene will help to increase self-esteem while minimizing the chances of developing infections. Poor personal hygiene can have significant implications on the success of job applications or chances of the promotion.

9.3.4 Physical Fitness

Apart from following these hygienic practices, one should also be physically fit. Physical fitness is an outcome of regular exercise. Exercise may be of many different forms. Jogging, morning-walk, weight-lifting, gym, swimming, cycling, yoga and many more.

Things to be avoided

There are certain habits that have severe ill-effects on one's health. Such habits should be avoided for a healthy life.

• Alcoholism

• Tobacco / Smoking

• Gutkha

UNIT 9.4: Development of Interpersonal Skill

Unit Objectives

At the end of this unit, participants will be able to:

1. Develop a positive attitude and behaviour.
2. Describe the goal setting.
3. Motivate for team participation at work.
4. Practice relations and stress management at work.
5. Develop leadership qualities.

9.4.1 Introduction

Interpersonal skill development is the blend of different traits of day to day life that play an important role in creating our impression in other's mind. It starts from inside. The role of interpersonal skill development is to help us understand how to make choices about our attitudes and actions.

These include various traits like:

- Positive Attitude
- Motivation
- Goal Setting
- Team Work
- Managing Relations
- Etiquette
- Stress and Anger Management
- Conflict Resolution

9.4.2 Goal Setting

Goal setting is a powerful process for thinking about your ideal future. The process of setting goals helps you to choose where you want to go in life.

Goal setting involves establishing specific, measurable, achievable, and realistic and time targeted goals. Goal setting helps people work towards their own objectives. Goals are a form of motivation that sets the standard for self-satisfaction with performance. Achieving the goal one has for oneself is a measure of success and being able to meet job challenges is a way one measures success in the workplace.

1. Financial
2. Education
3. Family
4. Health
5. Public Service

9.4.3 Team Dynamics

A team comprises a group of people associated for a common purpose. Teams are especially appropriate for conducting complex tasks. A team is a special instance of a group in which shared goal is the common thing. This creates a dynamic between team members and because they are dependent on each other for success. For example a sports team wins or loses as a whole.

Factors of Team Dynamics

• Tolerance and Cooperation

• Set aside feelings of caste, creed, profession

• Put up with each other

• Identify strengths of each

• Who can do what

9.4.4 Managing Relations

We all have different personalities, different wants and needs, and different ways of showing our emotions which affects people around us.

70% of the workplace learning is informal, when people talk to each other at work they actually are learning to do their job better. Friendlier workers are effective communicators, more productive and trusted more by employers and co-workers.

Stress and Anger Management

Anger is a normal and a healthy emotion. Managing anger can be a problem for some people who find it difficult to keep their anger under control. There are many health issues related to a unresolved anger such as high blood pressure, heart attack, depression, anxiety, colds and flu and problems related with digestion.

Always remember:

• Avoid unnecessary stress, learn to say no and take control of your environment.

• Express your feelings instead of boiling them up.

• Accept the things you can't change.

• Learn to forgive.

• Don't react immediately.

• Post pone for a few seconds whatever you wish to say or do.

• Take a deep breath.

• Speak when you have calmed down.

9.4.5 Etiquette

Etiquette are the customs or rules governing behaviour regarded as correct or acceptable in social and official life. It includes:

• Making Positive Impression

• How you treat with people

• Communicating at Workspace

• Work Ethics

• Discipline

• Commitment to work:

• Punctuality

• Ownership and responsibility

• Striving to excel:

9.4.6 Conflict Resolution

What is a Conflict?

A problem or a situation that may be difficult to understand or to deal with.

Why do we need to resolve conflicts?

• If a problem is not solved or addressed at the right time it may blow out of proportion

• An unsolved problem can be like Cancer which spreads and translates itself into all other areas in life

• Unsolved problems may lead to increased levels of bitterness and frustration

• It may foster bad habits like back-biting, gossiping, etc.

• Persons involved in conflict may lose focus and target each other's character instead of the specific behavior to be modified.

How to work out Conflicts?

• **STOP** - before you lose control of your temper and make the conflict worse.

• **SAY** - what you feel is the problem. What is causing the disagreement? What do you want?

• **LISTEN -** to the other person's ideas and feelings.

• **THINK** - of solutions that will satisfy both of you.

If you still can't agree, ask someone else to help you work it out.

9.4.7 Leadership Skills

The ability to lead effectively is based on a number of key skills. These skills are highly sought after by employers as they involve dealing with a number of people in such a way as to motivate, enthuse and build respect. Some of the qualities that every good leader should possess are:

• Honesty

- Ability to delegate
- Ability to take initiative
- Good communications skills
- Confidence
- Commitment
- Positive Attitude
- Creativity
- Be decisive
- Focus on the big picture

UNIT 9.5: Social Interaction

Unit Objectives

At the end of this unit, participants will be able to:

1. Analyze the social interaction.
2. Define duties and responsibility.
3. Explain about the team work.

9.5.1 Social Interaction

Social interaction is the process by which we act and react to those around us. It includes those acts people perform toward each other and responses they give in return. Social interaction includes a large number of behaviours. They are:

- Exchange
- Competition
- Cooperation
- Conflict
- Coercin

9.5.2 Self- Introduction

Everyone in their lifetime, have to introduce themselves to the audience or a class. It is a speech which lies around 3 minutes to 5 minutes. It is very important that it gives the first impression to other about us. It has a great impact on your self-esteem and self-confidence. It's helpful in:

- Feeling better about yourself
- Boosting your confidence
- Building your self esteem
- Making friends
- Feeling in control

Points for Self Introduction

- Wishes
- Purpose
- Name
- Father's Name
- Family
- Profession

- Location
- Hobbies/Habits
- Life Aim
- Achievements
- Favourite Person's or Ideal
- Your Strengths and Weakness

9.5.3 Cooperation

Cooperation is the process of groups of organisms working or acting together for their mutual benefit. Cooperation among family members, friends and peers is very common and healthy. It is the backbone of any society.

Family cooperation provides an avenue for a family to come closer. It increases coping skills and decision making. **Experiential Knowledge:** contributes to solving problems and improving quality of life.

* **Emotional support:** Esteem, attachment and reassurance

* **Instrumental Support:** Material goods and services.

How to be a cooperative person

For being a cooperative person following things needs to be done:

* Listen carefully to others and be sure you understand what they are saying.

* Share when you have something that others would like to have.

* Take Turns when there is something that nobody wants to do, or when more than one person wants to do the same thing.

* Compromise when you have a serious conflict.

* Do your part the very best that you possibly can. This will inspire others to do the same.

* Show appreciation to people for what they contribute.

* Encourage people to do their best.

* Make people needed. Working together is a lot more fun that way.

* Don't isolate or exclude anyone. Everybody has something valuable to offer, and nobody likes being left out.

UNIT 9.6: Group Interaction

Unit Objectives

At the end of this unit, participants will be able to:

1. Participate in group discussions in the class.
2. Give speech in the public.
3. Paraphrase the importance of team building and team work.

9.6.1 Group Interaction

Every day we meet with groups of people socially and professionally. How we interact plays a large role in the impressions we create. Interaction that occurs while a group completes a cooperative task describes how the group works.

Everything you do in a group setting makes an impression on everyone in the group. Don't ever think something doesn't matter. Everything matters. Take every opportunity to take part in informal and formal group interactions. Start by making small contributions to discussion, prepare a question to ask or agree with another person's remark. Ask for other persons opinion.

Dos and Don'ts of Group Interaction

Do's	Don't
• Speak pleasantly and politely to the group.	• Lose your temper. A discussion is not an argument.
• Respect the contribution of every speaker.	• Shout. Use a moderate tone and medium pitch.
• Remember that a discussion is not an argument. Learn to disagree politely.	• Use too many gestures when you speak. Gestures like finger pointing and table thumping can appear aggressive.
• Think about your contribution before you speak. How best can you answer the question/ contribute to the topic?	• Dominate the discussion. Confident speakers should allow quieter students a chance to contribute.
• Try to stick to the discussion topic. Don't introduce irrelevant information.	• Draw too much on personal experience or anecdote. Although some tutors encourage students to reflect on their own experience, remember not to generalize too much.
• Be aware of your body language when you are speaking.	
• Agree with and acknowledge what you find interesting.	• Interrupt. Wait for a speaker to finish what they are saying before you speak.

Fig.9.6.1: Dos and Don'ts of Group Interaction

9.6.2 Teamwork

Teamwork is a very important part of working life. They can have a big impact on:

• The profitability of an organisation

• Whether people enjoy their work

• Staff retention rates

• Team and individual performance

Importance of Team Building

Team building activities not only boost morale of the team members, but it can also increase the success rate of the teams. Team building is an important activity as it:

• Facilitates better communication

• Motivates employees

• Promotes creativity

• Develops problem-solving skills

• Breaks the barrier

UNIT 9.7: Time Management

Unit Objectives

At the end of this unit, participants will be able to:

1. Describe the concept of time management.
2. Develop time management skills.
3. Explain effective time planning.

9.7.1 Time Management

Time management is the act of process of planning and exercising conscious control over the amount of time spent on specific activities, especially to increase effectiveness, efficiency or productivity. It is an activity with the goal to maximize the overall benefit of a set of activities within the boundary condition of a limited amount of time.

Some effective time management

- Delegate tasks.
- Identify time wasters.
- Combine activities – Plan for them.
- Break down big tasks down to the smallest task possible.
- Accomplish them one by one.
- At the end of the day conduct a simple analysis to see which activity took time.

9.7.2 Pareto Analysis

- According to this 80% of the tasks can be completed in 20% of the time. The remaining 20 % of the tasks take 80 % of your time. And the task which should fall in first category should be given a higher priority.

- Time also depends on the method adopted to complete the task. There are always simpler and easier ways to complete the task. If one uses complex ways then it will be time consuming. One should always try to find out alternate ways to complete a task.

Urgent Important Matrix

1. The Urgent and Important Tasks	2. The Non Urgent but Important Tasks
DO NOW	PLAN TO DO THEM
• Emergencies, complaints and crisis issues	• Planning, preparation
• Demands from superiors	• Scheduling
• Planned tasks or project work now due	• Designing, testing
• Meetings with superiors/colleagues	• Thinking, creating, modelling the data

3. The Non Important but Urgent Tasks	4. The Non Important and non-Urgent Tasks
REJECT AND EXPLAIN • Trivial requests from others • Apparent emergencies • Misunderstandings appearing in work • Pointless routines or activities	RESIST AND CEASE • Comfort' activities, computer • Games, net surfing, excessive • Cigarette breaks • Chat, gossip, social • Communications • Reading irrelevant and useless material

Fig.9.7.1: Urgent Important Matrix

This matrix helps you understand:

• What should be done

• What should be planned

• What should be resisted

• What should be rejected

The simplest method of managing time is to create a general to do list. Prioritize the task list:

• A daily list of things to do, numbered in the order of their priority

• Start with the most unpleasant and difficult task first latter will completed easily and quickly.

• Map out everything while making a task list

• Learn to say "No" to unimportant things

• Strikeout the things completed so that you are familiar what have been completed and what needs to be completed.

Prioritize the above mentioned activities in the following heads.

Important Tasks	Unimportant Tasks	Urgent Tasks	Not Urgent Tasks

UNIT 9.8: Resume Preparation

Unit Objectives ⌖

At the end of this unit, participants will be able to:

1. Explain the importance of resume.
2. Discuss basic steps for the preparation of a resume.

9.8.1 Introduction

A resume is a self-advertisement that, when done properly shows how your skills, experience and achievements match the requirement of the job you want. The resume is a tool with one specific purpose to win an interview. It convinces the employer that you have what it takes to be a successful in the new career or position.

It also establishes you as a professional person with high standards and excellent writing skills based on the fact your resume is written well. It also helps you clarify your direction, qualifications and strengths, boost your confidence or to start the process of committing to a job or a career change.

One must know about a resume that:

*   Your resume is to get you an interview not a job

*   Your resume will be screened by an employer for just 15-20 seconds. That's all the time your resume has to make an impact.

There are different sections on the resume in the same order as mentioned under:

Section	What is the employer looking for
Header	Your identity and to contact you
Objective	To check if their requirement and your objective match
Education	To check if you have the basic qualification for the job/internship you are applying for
Practical Experience/Projects	To see if you have done anything that reflects your potential capability. Also to see how different you are from your peers.
Skills	How equipped you are in terms of your personality traits as well as occupational skills
Interests	Professional aspects apart, how meaningful is your life?
Other	Is there anything else significant and relevant you want to showcase, that will add value to your resume.

Fig.9.8.1: Different sections on the resume

9.8.2 Points to Remember

- Make sure that the length of your resume does not exceed 2 pages.

- Do a thorough recheck and make sure there are absolutely no errors in your resume. No grammatical errors, no spelling mistakes, no punctuation errors.

- Run through your resume time and again for to make improvements and wording sentences better.

- Choose a professional font in a size 11 or 12. You can use multiple fonts for different parts of resume, but try to limit it maximum of two fonts. Instead changing between fonts, try making specific sections bold or italicized instead.

- The font size of your header and the introduction to a section may be a size 14 or 16.

- Your text should always be printed in solid black ink. Make sure to deactivate any hyperlinks so that they don't print in blue or other contrasting colour.

- Your page should have one inch margin all the way around with 1.5 or 2 point line spacing. The body of your resume should align left and your header should be centred at the top of the page.

UNIT 9.9: Interview Preparation

Unit Objectives

At the end of this unit, participants will be able to:

1. Explain the procedure of an interview.
2. Prepare for interview.

9.9.1 Interview

An interview is a conversation between two or more people (the interviewer(s) and the interviewee) where questions are asked by the interviewer to obtain information from the interviewee. An interview is the first and last hurdle you need to cross in order to get a job.

Common Types of Interview

1. **Traditional HR Interview:** Most interviews are face to face. The most traditional is a one-on-one conversation with the HR Executive where the candidate's focus should be on the person asking question. You are advised to maintain good eye contact, listen keenly and answer promptly.

2. **Panel Interview:** In this situation, there is more than one interviewer. A panel ranging from two to ten members may conduct this part of the selection process. This is an ideal chance for you to display group management and group presentation skills.

3. **Technical interview:** The objective of this interview is to basically evaluate technical knowledge. Majority of the questions will be based on the skills sets mentioned in the candidate's resume.

4. **Telephone Interview:** Telephone interviews may also be used as a preliminary interview for candidates who live far away from the job site.

Before going for an interview, it is important to have clarity of the role you are applying for. It's also important that you know where you are applying and who will you be talking to. Your answers should tell the employer that you are the match they are looking for.

This requires you to do a small research on the following fields:

• Company & Field

• Job Description

• Yourself (Skills, Values & Interests)

• Resume (Experience)

It is important that you dress professionally. It is a proven fact that the way we dress makes a huge difference in the way we are perceived. 90% of the way you communicate with other people is through body language (gestures, expressions, etc.) and the first Impression we make. It is very simple to make a great first impression.

For a good first impression it is important those we:

• Smell good

• Have a professional appearance

- Pay attention to your grooming
- Make eye contact
- Know what and how you speak
- Our overall personality contributes to our complete perception.

How to dress for Interview

Men	Women
Long-sleeved buttoned shirt (clean and pressed)	Conservative pump, no stilettos
Dark shoes (cleaned and polished) and dark socks	Jewellery -One set of earrings (preferably knobs)
Get a haircut (short hair is always best)	No bangles
No Jewellery (chains, earrings, piercing)	Minimal use of makeup
No beards or Tattoos	

Fig.9.9.1: Dress for Interview

9.9.2 The Do's and Don'ts in an Interview

Some of you might have faced an interview and some of you might not have. However, by now, you definitely have a better understanding what are the accepted standards of a professional behaviour. Read the sentences given and mark them as do's or don'ts, in relation to an interview:

Sentence	Do's	Don'ts
Be yourself		
Burp while talking!!!		
Just out from a 'powder factory' (worn too much make-up)		
Reach just about the right time for the interview		
Just barge in the cabin/ office		
Forget to greet the receptionist/ don't respond		
Think before you speak		
Do your homework- Visit the company website		
Take time to think (TTTT)		
Wear bright colour clothes on the D-day		
Emphasis on your strengths		
Argue/ Debate with the interviewer		
Chew gum during the interview.		
Review your educational and work experiences		
See your documents flying out of the file (Being clumsy)		
Thank the interviewer		
Have the 'they need me' attitude		

Maintain eye contact and good body language		
Only give monosyllabic answers(depends on the kind of questions asked… in-between)		
Carry a copy of your resume		

Fig.9.9.2: Do's and Don'ts in an Interview

9.9.3 During the Interview

- Be confident, not arrogant
- Sell yourself - Keep your energy up
- Maintain your posture
- Be positive, don't complain
- Know your resume and accomplishments.

It isn't sufficient to have ideas. They have to be expressed effectively in the interview. The parameters that the candidates are assessed on during the interview are very simple. These are the parameters that this training program has prepared you for.

10. Employability Skills

APPAREL MADE-UPS HOME FURNISHING
SECTOR SKILL COUNCIL

Unit 10.1 - Employability Skills – 30 Hours

Key Learning Outcomes

At the end of this module, participants will be able to:

1. Explain employability skills.
2. Paraphrase constitutional values for citizen.
3. Become a professional in the 21st century.
4. Demonstrate the basics English skills.
5. Demonstrate the communication skills.
6. Recognise the essential digital skills.
7. Identify the diversity and inclusion.
8. Interpret financial and legal literacy.
9. Illustrate the career development and goal-setting.
10. Understand the customer service.
11. Get ready for apprenticeships and jobs.

UNIT 10.1: Employability Skills – 30 Hours

Unit Objectives

At the end of this unit, participants will be able to:

1. Explain employability skills.
2. Paraphrase constitutional values for citizen.
3. Become a professional in the 21st century.
4. Demonstrate the basics English skills.
5. Demonstrate the communication skills.
6. Recognise the essential digital skills.
7. Identify the diversity and inclusion.
8. Interpret financial and legal literacy.
9. Illustrate the career development and goal-setting.
10. Understand the customer service.
11. Get ready for apprenticeships and jobs.

10.1.1 Employability Skills

To read the e-book on Employability Skills scan the QR Code below.

Employability Skills

11. Annexure-Resources

Module No.	Unit No.	Name of Subject	URL	QR Code
1. Introduction and Orientation	Unit 1.1 – Introduction to Hand Embroidery and Apparel Sector	Apparel industry in India	https://youtu.be/tN5oLGSjepQ	
1. Introduction and Orientation	Unit 1.1 – Introduction to Hand Embroidery and Apparel Sector	Traditional Embroideries of India	https://youtu.be/Q1tb_q1i6lA	
1. Introduction and Orientation	Unit 1.2 - Role and Responsibilities of Hand Embroiderer (Addawala)	Role and Responsibilities of Hand Embroider (Addawala)	https://youtu.be/hmVQB6Xs8SY	
2. Plan and Organize the Process of Hand Embroidery (Adda)	Unit 2.1 – Introduction of Materials and Equipment Required for Hand Embroidery	Basic Hand Embroidery Materials and Tools	https://youtu.be/qK6HNiBecQI	
2. Plan and Organize the Process of Hand Embroidery (Adda)	Unit 2.2 – Knowledge of Design & Color	Basic Elements of Design	https://youtu.be/MshxnTQW4qU	
2. Plan and Organize the Process of Hand Embroidery (Adda)	Unit 2.2 – Knowledge of Design & Color	Principles of Design	https://youtu.be/9EPTM91TBDU	
2. Plan and Organize the Process of Hand Embroidery (Adda)	Unit 2.3 – Preparation for Embroidery	Transfer The Embroidery Pattern Onto Fabric	https://youtu.be/pxqdHBQfAw0	

3. Carry out the process of Hand Embroidery (addawala)	Unit 3.1 – Carrying out Different Types of Stitches – Flat Stitches	Hand Embroidery Stitches	https://youtu.be/BlpnAN6x394	
3. Carry out the process of Hand Embroidery (addawala)	Unit 3.4 – Introduction to Adda Work	Adda work embroidery	https://youtu.be/DPMB56gzgMg	
3. Carry out the process of Hand Embroidery (addawala)	Unit 3.7 – Waste Minimization	Waste minimization	https://youtu.be/uHFIHxUH_gw	
4. Embroider Decorative Designs using a Combination of Stitches & Work Styles	Unit 4.1 – Use Different Types of Hand Embroidery Techniques	3D Rose Flower Embroidery	https://youtu.be/nlGX5a919t8	
4. Embroider Decorative Designs using a Combination of Stitches & Work Styles	Unit 4.1 – Use Different Types of Hand Embroidery Techniques	Mirror Work Stitch	https://youtu.be/idd-aIUqCkI	
4. Embroider Decorative Designs using a Combination of Stitches & Work Styles	Unit 4.3 – Common Embroidery Techniques in India	Make a tapestry	https://youtu.be/47-feKAVF_c	
4. Embroider Decorative Designs using a Combination of Stitches & Work Styles	Unit 4.4 – Embroidery Defects and Their Rectification	Embroidery defects & their rectification	https://youtu.be/Wt2iPKP3Wzo	

7. Maintain a Healthy, Safe and Secure Working Environment with Gender and PwD Sensitization	Unit 7.1 – Maintain Health, Safety and Security at Work Place	Health related threats in apparel industry and control on them	https://youtu.be/POlQ27GQZp0	
7. Maintain a Healthy, Safe and Secure Working Environment with Gender and PwD Sensitization	Unit 7.2 – First Aid & CPR	First aid	https://youtu.be/DQ7JPNgU8Wg	
7. Maintain a Healthy, Safe and Secure Working Environment with Gender and PwD Sensitization	Unit 7.3 – Sensitivity towards People with disability and Gender Equality	Gender sensitization	https://youtu.be/Wi1exdO1lig	

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