UNIT 1

Garment Making Principle

Structure

1.0 Introduction

1.1 Drafting Draping and flat pattern designing Definition

1.2 Advantages and Disadvantages of above type

Learning Objectives

After studying the unit the student will able to

• To know the difference between drafting, draping and flat pattern

• Learn about advantages and disadvantages of the above methods

1.0 Introduction

Pattern making is an art of manipulating and shaping a flat piece of fabric conform to one or more curves of the human.

Pattern making is a bridge function between design and production. A sketch can be turned into a garment via a pattern which interprets the design in the form of the garment components (Cooklin). A pattern is flat while the body is not the body has height width and depth with in this roughly cylindrical frame work where are series of secondary curves end bulges, which are of concern to the pattern maker. Darts are the basis of all pattern making they convert the flat piece of cloth into a three dimensional form, which fits the bulges of the body.
A pattern maker typically makes a pattern from a flat sketch with measurement or two-dimensional fashion illustration. The basic pattern is the starting point for flat pattern designing. It is a simple pattern that fits the body with just enough ease for movement comfort (Shoben and Ward).

1.1 Drafting Draping and flat pattern designing: Definition

Drafting is a more technical process altogether and differs from paper folding in many respects. The measurement of the body, or of that part of the body for which a pattern is to be cut, are required and no particular area of paper is needed, although it will, no doubt, be found to be convenient to work on a piece of paper of approximate size. Many patterns, some of which may be of considerable intricacy, can be cut by drafting, more shaping is possible than is the case with paper folding. Also, block pattern must be cut in this manner, as well as the actual patterns of garments.

Fig. 1.1 Drafting Tools

1.1.1 Drafting: Muslin to paper pattern

Tools and Supplies

Paper
1.1.2 Draping

It involves the draping of a two dimension piece of fabric around a form, conforming to its shape, creating a three-dimension fabric pattern. This muslin is transferred to paper to be used as a final pattern (Armstrong). Ease allowances for movement are added to make the garment comfortable to wear. Advantage of draping I that the designer can see the overall design effect of the finished garment on the body form before the garment piece is cut and sewn. However, it is more expensive and time consuming than flat pattern making.

1.1.3 Draping

Tools and Supplies

Draping
• Muslin—light to medium weight
• Twill tape-1/4 wide

Pinning and sewing
• Pins-#17 Dressmaker
• Hand sewing nee
• Cotton thread
• Dressmaker Scissors
• Pin Cushion

Measuring Tools
• Measuring tape
• L-Square ruler
• 2"*18" clear plastic ruler
• 1"*12" clear plastic ruler
• French curve
• Hip curve
Marking

- Pencils
- Blue carbon tracing paper
- Tracing wheel
- Fabric eraser

Work Surface

- Table top-cutting surface

**Flat Pattern Making**: It involves the development of a fitted basic pattern with comfort ease to fit a person or body form. A sloper is the starting point for flat pattern designing. It is a simple pattern that fits the body with just enough ease for movement and comfort (Shoben and Word). Five basic pattern pieces are used for women clothing: they include a snug-fitting bodice front and bodice back with darts and a basic neckline, a sleeve, and a fitted skirt front and back with darts. However, a fashion changes frequently; women's styles fluctuate frequently. These basic sloper are then manipulated to create fashions.

1.2 Advantages and Disadvantages of above type

A new pattern drawing has an advantage that designer can look and feel the garment appearance interactively during the design process, the real pattern draping technique and is easy to adopt for designer. A custom dressmaker methods employs one of three pattern creation methods. The flat-pattern method begins with the creation of a sloper or block a basic pattern for a fitted, jewel neck bodice narrow skirt, made to the wearer's measurements.

Drafting is a more technical process altogether and differs from paper folding in many respects. The measurement of the body, or of that part of the body for which a pattern is to be cut, are required and no particular area of paper is needed although it will no doubt be found to be convenient to work on pieces of paper of approximate sizes. Many pattern some of which may be considerable intricacy can be cut by drafting, more shaping is possible than is the case with paper-folding. Also block pattern must be cut in this way, as well as the actual pattern of garment.

The drafting method is more commonly employed in men's wear and involves drafting a pattern directly onto pattern paper. Using a variety of straightedges and curves, a sloper is created to speed up the production time. A pattern maker would use various tools such as a notcher, drill and awl to mark the pattern in pieces.
The pattern draping method is used for more elaborate and unique designs that are hard to obtain through the flat pattern method this is because it is nearly impossible to account for the way a fabric will drape or hang on the body without an actual 3-dimensional test. It involves creating a muslin mock-up pattern by pinning fabric directly on a dress form, then transferring the muslin outline and marking onto a paper pattern or using the muslin as the pattern itself.

1. Flat pattern making think of it as going from 2D to 3D you draft flat (2D) patterns then you sew them and drape them on the mannequin (3D). You check for error and make small adjustment clothes that are Fairless geometrical (i.e., most clothes) are made using this method templates (a.k.a slopers or blocks) are utilized to speed up the process to learn more about the flat pattern making process, see this.

Cutting a pattern of anything by the “flat” method is really suitable only for beginners to use in order to get some idea of what is meant by a pattern, what is meant by size and shape, and in order that the meaning of term such as long and short, wide and narrow, and so on, may be conveyed, if not fully understood. Children night begin by learning to make a flat whole pattern of simple articles such as bed-curves for dou’s beds feeders, book covers and similarly shaped things.

2. Draping think of it as going from 3D to 2D you work directly on the mannequin (3D) wit pins and scissors, under the breast, cut it pin, etc until you reach a form that type you’re satisfied with them you move on to the flat (2D) pattern to see what you get and to make final adjustment (Some angles night need to be 90 degrees, some lines night need to be equal etc,) clothes that are complex, organic with a lot of draping effects would be made using this method.

Summary

A pattern is a shape made in some pliable material to fit an article requiring to be covered, either wholly or partly, by a drapery of some other material. A pattern is generally drawn from measurement taken on the article, or it may be moulded over the article itself that is made, to fit the article without recourse to measurement. Thus when pattern of garments are required they are either taken on that part of the body to be covered by a particular garment, or modeled by shaping a length of material over the body.

Test Your Understanding - Fill In The Blanks

1. _____ Involves measurement derived from accurate measurement taken on a person dress or body form.

2. _____ Is ore expensive and time consuming than flat pattern making.
3. ______ is a starting point for flat pattern designing.
4. ______ are utilized to speed up the flat pattern making process.
5. Draping work is directly done on the _____ with pins and scissors.

Test Your Understanding (Answer)

1. A. Drafting
2. A. Draping
3. A. Sloper
4. A. Templates
5. A. Mannequin

Short Answer Type Questions

1. What is Draping?
2. What is Drafting?
3. What is flat pattern designing?

Long Answer Type Questions

1. Write in detail about Draping.
2. Explain in detail about Drafting.
3. Write in detail about advantages and disadvantages of drafting and draping.
UNIT 2

Handling Methods for Various Fabric

Structure

2.0 Introduction

2.1 Handling method for various fabrics

2.2 Fabric preparation on techniques – types of layout

2.3 Fabric Cutting methods

Learning objectives

After studying the unit, the student will be able

• Know the laying the fabrics

• How to handle the different types of fabrics

• Know the cutting methods of fabric

2.0 Introduction

Fabric are produced mostly from yarns few fabrics are directly produced from fabrics. Fabric are made from yarns and are constructed mostly either by weaving and knitting. In Indian market, Seventy percent of the fabrics are produced by weaving. Among the other fabric construction, lace making is worth mentioning. Fells are fabric made directly from fibers without making yarns.
2.1 Handling Methods for Various Fabrics

2.1.1 Chiffon

Chiffon fabric are sheer, light weight fabrics made of hard turisted yarns originally these are made in silk fabrics but today they are made from rayon or polyester. They are used for sarees and women’s evening wear. The fabrics encounter with the problem of shrinkage. It is extremely light weight but very strong usually has a soft finish.

2.1.2 Georgette

Georgette is a sheer light weight fabric woven in plain weave. It has a characteristic rough texture produced by hard turisted ply yarn both in warp and weft originally it was made in silk but today it is produced in rayon and polyester to mainly suitable for women evening wear, dresses blouse it is more opaque than cylinder. It comes in solid and printed colours.

Special handling for chiffon and georgette: Chiffon georgette can go anywhere. Ranging in weight. It is suitable for all types of garments light and gently describes the hand for working with chiffon georgette hand for working georgette.

Basting: Hand—baste seams and darts. Avoid temporary machine stitching that must later be removed since chiffon and georgette will slow needle works use a size 8 or 9 a hand sewing needle of appropriate length.

Thread and needle: Machine stitch silk fabric with silk thread as the expert always does use a size machine needle in light weight silk and a size 14 on heavy or rough surfaced silks.

Stitch length and pressure: Use a 15 to 20 stitch length for sheer and soft silks.

Stitching: Medium and heavy silks require guiding only in front of the needle during the machine stitching crope weaves and chiffon require gentle support; when stitching them, hold the seam in back of the presser foot as well as in front of the needle.

2.1.3 Pile fabrics

The insulative property of pile fabrics is based upon the principle of air spaces entrapped between fibers. But the fiber which are usually acrylic mode acrylic, or a combination of them, are held in place by being knitted into a base material the resultant high pile material is converted into imitation for fabric by special processing pile fabric can be made to look very attractive and they give
immediate sensation of warmth on contact. Pile fabrics have an “up” and “down”. To determine of pile fabrics.

**Basting**: Always baste with silk thread. Avoid temporary machine stitching that must later be removed, it will near the pile.

**Thread and needle**: Most of pile fabrics require size 14 needle.

**Stitch length and pressure**: A 12-stitch length is correct the pressure exerted by the pressure foot should be some that lighter for pile than for that woven fabric.

**Stitching**: The rule is to stitch with the pile since the pile runs up, this means that seams are stitched from the bottom to the top. A plain seam, pressed open is preferred.

### 2.1.4 Velvet

It is a warp cut pile fabric originally made from silk. It is also produced in rayon. The dense cut pile makes it very soft. It is used as dress material and also a up holestery and material velvet is fashionable for daytime sports and formal wear, velvet is used primarily for formal wear.

**Handling of velvet fabric**

**Basting**: Always baste with silk thread fit the garment and make all necessary adjustment before machine stitching avoid temporary machine stitching that must later be removed it will mar the pile.

**Thread and needle**: Stitch velvet with silk thread and velvet teen and corduroy with thread on washable velveteen and corduroy that are made into children clothes. Most pile fabrics require size 14 needle.

**Stitch length and pressure**: A 12-stitch length is correct the pressure foot should be the exerted by the pressure for should be somewhat lighter.

**Stitching**: A plain seam, pressed open

### 2.1.5 Lace Fabric

Lace is an open work fabric consisting of a net work of threads or yours formed into intricate design, Laces are developed for beauty and adornment. lace which looks so delicate is made out of strong yarns looped or twisted together in a more complicated manner than any other methods of construction. They are manufactures in many widths, shape and in limitless variety of pattern.
Variety of pattern

Handmade laces are more expensive than machine-made laces. As expensive goods are preferred only by few the machine-made laces are more popular.

Handling of lace fabric

**Basting**: Use a size 8 or 9 hand sewing needle and baste all seams to prevent the lace from slipping during machine stitching.

**Thread and Needle**: Select silk thread for the machine stitching on silk, wool or synthetic lace, and mercerized thread for cotton and linen.

**Stitch length and pressure**: In stitching the fine open work of lace use a 15 stitch length and light pressure—no heavier than needed to carry the fabric evenly under the presser foot without marring the lace guiding only in front of the needle. Machine stitching, soft and silk laces require a little more support.

2.1.6 One Way Design Fabrics

A wide variety of one-way design fabrics are available in today’s market. An average consumer is unaware of many fabrics and their suitability for a specific end use. Corduroy, velvet, napped design etc. come under this one-way design fabrics.

**Corduroy**: It is cut pile fabric available in solid color. The cut pile fibers are seen in the form of ribs on the surface. It is mainly used for pants, jeans and shirts. Corduroy, which is generally less expensive than the other two, is practical for sportswear and children’s clothes.

Handling of corduroy fabric

**Basting**: Always baste with silk thread fit the garment and make all necessary adjustment before machine stitching. Avoid temporary machine stitching.

**Thread and Needle**: Stitch velvet with silk thread and velveteen and corduroy with silk or mercerized thread. Use mercerized thread on washable velveteen and corduroy that are made into children’s clothes.

**Stitch length and pressure**: A 12 stitch length is correct. The pressure exerted by the presser foot should be somewhat lighter.

**Stitching**: The rule is to stitch with the pile since the pile runs up, this means that seams are stitched from the bottom to the top. A plain seam pressed open is preferred.
2.1.7 Satin

Originally silk, now also of filament manmade fibers with a highly lustrous surface and usually a dull black. It is made in different weight according to its uses which vary from lingerie and dress goods to drapery and upholstery fabrics. It may be made with cotton back sometimes double faced for use as ribbon.

2.2 Fabric preparation - Techniques - Types of Layout

Rules to be follow in pattern layout

1. Press the fabric as well as the pattern pieces flat before laying the pattern on the fabric.

2. Use of large table or any hard surface for your work.

3. If an open layout is used, place the fabric right side upon the table for all other layout fold the fabric right side facing and wrong sides out.

4. Decide on the best way to fold your cloth this will depend on the width of the cloth, width of your pattern pieces the types of cloth and design of garment the common methods of folding the cloth for laying out pattern pieces are the following.

2.2.1 (a) Length wise centre fold

Here the fabric is folded down the middle parallel to the selvedges so that the selvedges come together this as the most frequently used fold. The layout for simple frock on the type of fold is illustrated in the figure.

![Fig 2.1 Length wise center fold](image-url)
2.2.2 (b) Off centre use fold

This is used when narrow piece have to be cut on fold to ensure that the fold is parallel to the selvedge mark paints measuring the required distance (Width of the half pattern including seam allowance) from the selvedge at regular intervals and fold along the markings. The layout of for a child panty on this type of layout is illustrated in the figure.

Fig. 2.2 Off Centre wise fold

2.2.3 (c) Crosswise centre fold

This is suitable for material that are too narrow to accommodate the width of pattern pieces when folded length wise.

Fig 2.3 Cross wise center fold

2.2.4 (d) Off centre wise fold

When only a part of the materials required to cut pattern pieces that are too wide for length wise fold layout this type of fold is used.

Fig 2.4 Off center cross wise fold
2.2.5 (e) Double fold

This is used when many pattern pieces that are too wide must be cut on fold. For garments with no opening for front and back sections, this type of fold can be used provided the cloth is wide enough to accommodate the pattern when folded this way.

2.2.6 (f) Combination fold

Here length wise fold and cross wise fold are combined.

2.2.7 (g) Open layout

In this types of layout the fabric is not folded at all this is used especially for designs which require right and left halves to be cut separately.

![Diagram of open layout](image)

**Fig 2.5 Open layout**

2.3 Fabric cutting methods

(i) If the pattern does not have seam allowance make sure that you have drawn cutting lines on the fabric leaving enough seam allowance beyond the edge of the pattern before starting to cut the fabric.

(ii) Hold the fabric flat on the cutting surface with your left hand and cut with long even strokes using your right hand.

(iii) Walk around the table as you cut because of you move the pattern end material the grain may shift resulting on uneven edges.

(iv) Cut accurately and smoothly exactly along the cutting lines.

(v) Notches should be cut where ever necessary. Notches are guides for joining the garment section they indicate which edges are seemed together.
Some prefer to make a short 1/4 clip or slash to mark notches at beginning and termination points of seam lines, darts, etc.

2.3.1 Transferring Pattern markings

After cutting all pattern pieces accurately, you should transfer seam lines and all the pattern marking to the fabric.

The common methods used for marking fabric are:

2.3.2 Tracing wheel and carbon paper

This method is not suitable for delicate fabrics which may get spoilt by the sharp teeth of the tracing wheel. Another drawback is that carbon marks well be left on cloth and may be visible from the right side, especially if the fabric is transparent or if the carbon paper is of bad quality.

In applying this method, you may use pencil (instead of tracing wheel) with carbon paper, but then you should trace only the end (and a few points in between of darts and seams).
2.3. 3 Tailor chalk

If you have cut slashes or holes or inward notches in the pattern for beginning and termination point of darts and seam (or if you have not left seam allowance in the pattern) you can mark directly on to the top layer of fabric with tailor chalk or ordinary pencil.

2.3.4 Common pins

Marking on the top layer of fabric can be transferred to the lower layer by inserting pin through both layer of fabric at the points to be marked. As soon as one pin is inserted turn the fabric and the pin point on the underside with chalk and pencil marks.

If the pattern has seam allowance and no holes slashes near darts and seam lines pin can be inserted through the pattern and double layer of the fabric and the pattern lifted to mark the pin on upper layer of fabric.

2.3.5 Tailor Tacks

This method is especially good for silks and sheer fabric unlike the tack should be worked using double thread of a contrasting colour so that they can be easily seen.

Working of continuous tailors: If the pattern includes seam allowance and has no slashes or holes provided for facilitating transfer or pattern marking tailor tacking is done as follows. Tack through the pattern and double layer of fabric along the seam lines and dart marketing using uneven stitches of 1/2 length on upper side 1/4 length on under side. While making the stitches on the upper side do not pull them light instead leave them as a loops of 1/4 height.
After completing the tacking cut each look along the midpoint as shown, unpin the pattern from the fabric and remove it carefully, making sure that the threads do not get pulled out of the fabric. Now raise the upper layer of fabric slightly and clip the thread between it and bottom layer so that thread tufts will be remaining on both payer of fabric.

![Tailor Tack](image)

2.3.6 Stay stitching

Stay stitching is a raw of regulation machine stitching using matching thread, done on a single thickness of fabric between the cut edge and seam line, about 1/16 from the latter it helps to pressure the lines and grain of the fabric as cut by the pattern. It prevents curved edges like neckline armhole etc. It should be done with the grain.

2.3.7 Ease Stitching

It is done instead of stay stitching where a little extra fullness is needed as in sleeve cap for ease stitching you may use a standard size stitch with loose upper tension or slightly longer hotch than normal stitch.

Summary

The manner in which a fabric is cut in relation to grain line of fabric and its layout determine durability quality fit and appearance preparing the fabric is the preliminary step in garment making by the way it is handled is also very important.

(i) Test your understanding

2. _____ of pile is based on principle of air spaces between fibers.
3. _____ warp cut pile fabric.
4. Length wise fold and _____ are combination.
5. _____ are guides for joining the garment section.
(ii) Test your understanding

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Georgette</td>
<td>Row so regulation machine stitch</td>
</tr>
<tr>
<td>Lace</td>
<td>Marking fabric</td>
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<tr>
<td>Stay stitching</td>
<td>Sheer light weight fabric</td>
</tr>
<tr>
<td>Tracing wheel</td>
<td>Parallel to selvedge</td>
</tr>
<tr>
<td>Length wise fold</td>
<td>Open work fabric</td>
</tr>
</tbody>
</table>

(i) Test your understanding (Answer)

1. Light weight
2. Insulative property
3. Velvet
4. Crown wise fold
5. Notches

(ii) Test your understanding

(1) 3
(2) 5
(3) 1
(4) 2
(5) 4

Short Answer Type Questions

1. What is Stay stitching?
2. How do you Handle chiffon fabrics?
3. Write about Laced fabrics.
4. What is the different between Satin and Velvet fabric.
5. What is one way design fabric?
7. What is Double fold?
8. How do you transfer the pattern marking by tailor tacking.
9. Write about common pins.
10. What are the methods used for marking the fabrics?
11. What is Ease stitching?

Long Answer Type Questions

1. Write in detail about different types of layout.
2. Explain in detail about pattern marking.
3. Write short notes on
   (a) Chiffon (b) Velvet (c) Satin
UNIT 3

Selection of Clothing

Structure

3.0 Introduction

3.1 Selection of Fabric and garment

3.2 Suitability for all Age group

Learning Objectives

After studying this unit the student will able to

• Gain knowledge
• Know the garment suitable for different age group
• Acquire the knowledge of fashion or colour in selection of garment

3.0 Introduction

Clothing is an extremely part in every one’s life they may being joy and pride in receiving and wearing much loved garment clothing is an intimate part of oneself. Clothing have to be designed according to fashion clothes should be created according to their age group and activities. It also gives comfort and satisfaction to the wearer.

3.1 Selection of Fabric and garment

Clothing refers to various articles used to cover the body. Apparel may be divided into two classes. First one the desire for warmth and for protection against elements.
Secondly the desire for satisfaction we receive from wearing clothing that makes us appear to advantage.

The appearance of a garment is greatly influenced by the fabric used for construction not all fabric are suitable for all garments to choose a suitable fabric for a specific end use, should have basic knowledge in fabric construction and types of fabrics available in the market.

3.1.1 Woven Fabrics

Woven fabrics are made by using two or more sets of yarn interlaced at right angles to each other woven fabrics are generally more durable fabrics having more fabric count keep the shape well. Low cunt fabrics are less durable and may snag stretch.

Woven fabrics are manufactured in different width depending on the end use.

3.1.2 Knitted fabrics

Knitting is the construction of an elastic porous fabric, created by interlocking yarn by means of needles, Knitted fabric can be made much more quickly. They are generally light in weight comfortable to wear. Knitted fabric are used for designing active clothing such as sports clothing. Their elastic nature permits for abundant physical activity knitted. Fabrics are produced by two general method. Wrap knitting and weft knitting.

3.1.3 Laced Fabrics

Lace is an open work fabric consisting of network of threads or yarn formed into intercate design. Lace which looks so delicate is made out of strong yarn looped or trusted together is more complicated than any other methods of construction.

Handmade laces are more expensive then machine lace. Laces are produced either in the form of fabric or in a shape suited for a particular end use they are mostly used as trimming apparels and home furnishing.

3.1.4 Blended Fabrics

It is important to observe the production of staple yarn is not limited to composition from one type of fiber the staples of two or more kinds of fiber may be combined for blended at different stages when different types of fibers are blended, the properties of these fibers are also combined in the blended yarn.
3.1.5 The basic factor to be observed while selecting the clothes

Selection should be done on the basis of age, occasion, figure type, fashion, colour.

**Age:** The style and pattern of dress changes according to the age group while selecting the fabric one has to think of the age group of the child the social status of the parents will determine the quality as well as quantity of every one clothing for small children dainty prints in smooth colours. Nursery prints are not suitable for elementary school children.

Boys like masculine colour blue brown grey girls like feminine colour like pink green, red and yellow. Fabrics which are rough textured are for boys and delicate are chosen for girls.

**A line dress are suitable for toddlers and infants.**

**Occasion:** Selection of clothes changes according to occasion. For casual wear, durable dresses with simple design can be chosen, but for festival or occasional wear, new styles with bright pattern are chosen dresses with elaborate timing and decorations are selected with bright colour are also used for special occasion. They are delicate fabrics and require specialize laundering.

**Figure:** It also influence in the selection of clothing. An adolescents are developing physically so they either want to conceal or show off them figure line, colour, sleeves collars etc are factors influence figure of person for e.g. vertical lines make the person to appear taller and thinner where as horizontal lines have the opposite effect on the figure. One should select neckline according to the shape of the face and figure some look tall and thin in one piece dress of one colour. To conceal heavy helps bright tops should be worn with natural skirts or pants the added bulk of jacket or cardigan can do a lot for the figure if a person is tall and slender.

**Fashion:** People are more concerned about fashionableness of a garment than its durability quality they are attracted by the style fabrics and pattern worn by friends. Clothing fads are common this year faded jeans are popular these days. Such fads usually are short lived and whatever may be in the season is likely to be modified or changed completely the next year.

**Colour:** Colour is dynamic it not only appeals to the intellect but also influence our emotions colour can be exciting or relaxing they can create a feeling of warmth or coolness certain colour have great appeal than other. Warm colour tend to convey a feeling a gaiety and cheerfulness cool colours appear dignified but too much make a person feel depressed.
3.2 Suitability for all Age group

3.2.1 Children

Clothing for the new born baby are warmth, comfort and hygienic qualities. Babies heat up and cool off more quickly than of grown ups. The amount and type of clothing which the infant will need will be determined to some extent by the time of the year general climatic condition infant clothes should be selected primarily basic of comfort and ease of care. Clothing should be simple and well made knitted fabric garments stretch with body movement and are easy to put on the infant opening all the way down the front or back make dressing simpler.

Dresses get in the way when the little girl starts creeping overall shield tender knees from floor. Reinforcement in the knees of point legs will provide for greater in cold weather zones a snow suit mittens and hood will be necessary. The toddler needs clothing that provides maximum freedom for as the activity usual at this stage. Again overall are preferred especially if they have wide shoulder straps that are long enough for adjustment as the child grows garments should be flexible, comfortably warm, easily cleaned, soft durably constructed to encourage self reliance, convenient for frequent toileting, adjustable to the rapidly growing body and attractive in design and fabric children of this age also make believe clothing to accommodate their dream world fantasies.

Children garments should be light in weight with maximum warmth and protection. Colour design and texture of the fabrics used should be suitable for the age and size of the child clothes warm next to the body, especially, underclothes should be loosely woven of knit fabric to provide body ventilation and absorb moisture. All fabrics used for children’s clothes should be of loosely woven or knit fabric to provide body ventilation and absorb moisture. All fabrics used for children’s clothes should be preshrunk. Clothing needs for elementary school children vary in some respects from those of the preschool, although many requirement remain the same.

This period is a very active one physically sports rate high in interest for both boys and girls clothing plays an important role in social development as definite ideas likes and dislikes are developing. Durable clothing must be provided which will with and the strains or vigorous exercise children consider fitting of the garment while doing selection poor fit is the most frequent reason given by elementary age children for not wearing their clothes there rapid acceleration in growth, as the body changing and taking on adult characteristics.

The peer group becomes even more important than during elementary school year physiological comfort plays an important role while selecting clothes
Physical comfort is given less importance as compared to previous age groups. Physical comfort is related with the type of clothing whereas physiological comfort indicates the satisfaction of the wearer. The wearer is fully aware of selection of clothing according to complexion height, climate, sex and occupation.

### 3.2.2 Adolescents

For girls, the great acceleration in growth has passed its peak by middle adolescence although boys may still be growing rapidly. They are developing emotionally and mentally, socially but still poised popular adults. They become more conscious of grooming and personal appearance. They want well-filled, fashionable, and expensive garments for the service ability are sacrificed for sake of style and fashion. They seek acceptance and approval of the peer group. They are greatly interested in clothing and concerned with the physical appearance. Clothing becomes a means of expressing personality.

They select their clothes according to the occasion. Some dresses with decorative design and shiny appearance are suitable for party wear. Silk dresses with simple design and easy to wash are mostly chosen for daily wear. Some fabrics, styles, and colour are suitable for particular seasons. Dark colours look cheerful in winter. During summer, light colours are appropriate. The texture of fabrics is also important. Sheer textures are suitable for summer. Silk, fabrics with shiny texture are chosen for winter. For example, Organdie, fabrics with shiny texture are chosen for winter.

### 3.2.3 Adults

A man who is well-dressed for the occasion not only appears capable but also confident. A man’s workrobe includes clothes for business, sports, and formal wear. Planning a workrobe for a man meets demands of the activities, styles, colours, and fabrics suited to him. Judge the fabric for its suitability and bearing quality. Evaluate a garment for its fitting and construction.

The man who generally finals that suits, shirts, ties, and socks which are more or less conservative in colour and style are a wise choice. For informal social affairs, many men choose white shirts and its is a wise choice. A complete wardrobe for a man also includes such accessories as hats, shoes, socks, ties, and gloves. Nightwear and undergarment men select clothing colour according to the present trends. Jacket in basic colour dark blue, grey, brown, and tan etc are the best.

A man who is tall and thin can use colour contrast in shirts and trousers. Designed fabrics, soft pleats at trousers waistline, and interesting pocket details horizontally pattern on ties and shirt with moderate collar spread are suitable. The extent of a woman’s wardrobe depends on her husband income, their social activities, and her ability to sew for herself.
Drip dry fabrics require little or no care. Neat and appropriate house clothes are essential for every housewife. Wardrobe consists of several types of costumes: sarees, suits, etc. The housewife needs at least one special occasion dress per season today. There are increasing numbers of women who have professional outside the home. The clothing requirements of a career wife should be easily washable and those which dry up quickly and need little or no maintenance. The growing requirement for garments service ability depends upon following considerations: the grain of the cloth should follow the line, the seam allowance should be adequate. Fabric should be colour fast. Edge should be cut with pinking shears while stitching principle of design should be followed.

**Summary**

The clothing for children and adolescents should be selected with much care as that for the adult. Good garments are of the size and design that make for comfort in wearing, ease of movement and care of care. Garment can be purchased ready-made or they can be made by the wise home maker who understands the clothing needs of all age groups.

(i) Test your understanding

1. _____ Is an extremely important part in everyone's life.

2. _____ Is an open work fabric consisting of network of threads.

3. _____ Fabrics are made by using two or more sets of yarn interlaced at right angles to each other.

4. _____ and _____ of a dress change according to age group.

5. Clothing for newborn babies are warm, comfort and _____ qualities

(ii) Test your understanding (Matching)

1. Knitted Fabric ( ) a. Two or more fabric

2. Clothing ( ) b. Elastic, porous fabric

3. Feminine colours ( ) c. Peer group

4. Blended fabric ( ) d. Important in one's life

5. Adolescent ( ) e. Pink, green, red

(i) Test Your Understanding (Answer)

1. Clothing

2. Lace
3. Woven fabrics
4. Style and pattern
5. Hygienic qualities

(ii) Test Your Understanding (Answer)

1. (b)
2. (d)
3. (e)
4. (a)
5. (c)

Short Answer Type Questions

1. What is blended fabrics? List and two.
2. Write about laced fabrics. How do you use.
3. What are the factors required in selection of clothing?

Long Answer Types Questions

1. What are the basic fabrics required while selecting the clothes?
2. Write in detail about clothing suitable for children.
3. Explain in detail about selection of fabrics.
4. Explain in detail clothing suitable for adult and Adolescents.
4.0 Introduction

4.1 Basic Sleeve pattern

4.2 Basic sleeve adaptation into different sleeve

4.3 Suitability of sleeve types of figure

Learning Objectives

After studying this unit, the student able to understand

• Knowledge of making plain sleeve

• Modify the basic sleeve into different types of sleeve

• Suitability of sleeve to figures

4.0 Introduction

Sleeves may be classified into two types

1. Set in sleeves cut and stitched separately and seamed to the armhole of the garment this is the commonly used type.

2. Styles in which full bodice of part of bodice is combined with the sleeve. (E.g. Raglan sleeve, Kimono sleeve etc) Sleeveless styles with modified armhole may also be included in this group.
4.1 Basic sleeve pattern

Take a paper with length = sleeve length = 7 “and width = ½ bust - 3=14”. Fold the paper length wise through the middle, in ABCD represent this folded paper with the fold along AD. Hence \( AB = \frac{1}{4} \text{bust} - 1 \) and \( AD = BC = \text{sleeve length} \) mark straight grain line parallel to AD. Mark \( BE = \frac{1}{2} AB = 3 \) 1/2”. Connect AE by a straight line divide AE into 4 equal division and mark a, b, c, shown mark e.g. = \( \frac{1}{2} \). Bf = ¼ an = 5/8 and ae = ¼ in the direction shown connect AGFCE with a bold line it is the back sleeve cap seam line connect AGBDE as shown w2ith dotted cap seam line. This is the front sleeve cap seam line mark C F = 1/2 to 1 connects EF. This is the side seam of sleeve.

Cutting out the sleeve pattern cut both layers of paper along DEF and then along back sleeve cap seam line. Now open out the sleeve and cut the top layer only along front sleeve cap seam line. Label the sleeve pattern.

On back sleeve cap line, mark a point K in such a way that, \( EK = \frac{Y}{3} \) EA similarly on front sleeve cap line mark E1, K1 1/3 E, A. As notch at K and two notches at K1 . As explained the garment correctly marks one notch at centre of sleeve. This notch will be matched to shoulder seam on bodice while construction the garment.

![Fig 4.1 Plain sleeve](image)

4.2 Basic sleeve adaptation in to different sleeve

Puff sleeves and its variation

Puff sleeve gathered at top only this type of sleeve is sometimes sued ion dresses the lower edge of this sleeve has no fullness but the top edge has fullness in the form of gathers. To prepare the pattern, take the basic short
sleeve pattern and draw slash lines as explained earlier. Now slash along these lines from top to almost near the bottom edge keep the slashed pattern on another sheet of paper and spread open the upper edge the required amount of fullness as shown spread the sleeve so that E to F is about 17 (i.e., less than half width of dress fabric so that two sleeves can be cut from ne length of sleeve). Increase the length of the sleeve by “1 to 2” as shown for puffing. Draw the outline of the new sleeve on the new sheet of paper (the top edge is shown with dotted line).

4.2 Puff sleeve at top

4.2.2 Puff sleeve gathered at bottom only

This is also used in dresses the top edge of this sleeve has no fullness. To prepare the pattern cut along the slash lines plain sleeve pattern from bottom upwards and spread open the low edge of length the sleeve about 2 for puffing as shown the lower edge of sleeve can be gathered and finished with a band or bias binding or may be gathered using elastic.

4.2.3 Puff sleeve gathered at top and bottom:

This is the most common type of puff sleeve. In (e,) the sleeve is finished with a band and in(e) with a frill to prepare the pattern draw the straight line EF and then cut right through all the slash lens spread apart the different sections keeping the sleeve cap line EF on a straight line. Red draw adding “1 to 2” extra length at top and bottom as shown this pattern can also be used make a sleeve with gathers at top and bottom finish the edge of lower edge with Bias binding or fold and finish gather with elastic.
4.2.4 Bell sleeve

This sleeve is narrow at the top and flares at lower edge, like a bell the lower edge is finished by narrow hemming or whipping to get bell effect.

**Drafting:**

Square lines is 0 fold at 2-0 1-0 = one eight chest plus 6.5 cm (2½).

2-0 = Sleeve length plus 1cm (¼)

3-2 = Same as 1 to 0. Join 3-1

4-1 = One-eight chest

5-0 = 2.5 cm (1’) join 4-5

6 is mid way 4 to 5

7-6 = 2cm (3½’)

Shape back – side 4-7-5-0 as shown square up from 4 to 8. 8-4 = 5cm (2”) for ladies and 4cm (1½ “) for girls garments. Join 8-5 taking 1 cm (¼”) above point 4 shape front – side 4-8-9-0 as shown.

10 - .2 = 5cm (2”) . 11 - 3 = 2.5 to

5 cm (1 to 2). Join 11-4

12-11 = about 2.5 cm (1”)

Shape 12-10 as shown.
4.2.5 Bishop sleeve

This is full length or three quarter length sleeve with gather at lower edge set into a band or cuff for this prepare a basic long sleeve pattern using the instruction given under full sleeves shirt, draw slash lines and cut along them form bottom upwards and spread the lower part apart as shown.

Fig 4.5 Bishop sleeve

4.2.6 Kimono sleeve

Trace the blouse front pattern on a large sheet of paper to lower the armhole (for ease on movement of arm without danger of tearing at the under arm) Mark f1 below E. Cut the sleeve pattern length wise section (LMNY). So that centre length wise line LM becomes an extension of shoulder seam NS. 9L should be kept ½ higher them S and NL connected as shown. Connect FY with a curved line. DFYN is the side seam of the kimono blouse. For a very loose sleeve like batwing sleeve connect DXN as shown. Cut out the bodice pattern with the sleeve extension repeat this procedure with blouse back sleeve section to to prepare the kimono blouse back pattern.

Fig 4.6 Kimono sleeve
4.2.7 Raglan sleeve

On the back bodice pattern mark D a little above underarm point mark A, 1/2 to away from N. Connect AD and draw a gently curved line ABD over it. Mark a matching notch on this curve as shown. Following the same procedure draw curved line EH on the front pattern and mark a double notch on this curve cut away raglan section from the bodice pattern by cutting along ABD and EFH. Trace the sleeve pattern on large paper and mark L, midpoint of sleeve cap seam line keep the cut raglan sections over the top of the sleeve with shoulder tips 3 touching L and points D NSN, form a large dart, the original sleeve pattern for the added will be the pattern for the raglan sleeve. The finished appearance of a raglan blouse is shown.

4.7 Raglan sleeve

4.2.8 Circular sleeve

This sleeve, when cut, looks like a circle without a seam at circumference the approximate length of this sleeve should be one fourth chest or to fast. While joining this sleeve to the armhole a little fullness should be given to the inner side 6-10-3 draft this sleeve as follows, square liens form 2 with fold at 0-4 bias side.

1-0 = Sleeve length
2-0 = Same as 1 to 0 or less 1-5 cm (y2)
3-1 = One - eight chest plus 6.5 cm (2 ½)
4-3 = About 5 cm (2).
5-2 = Same as 4 to 00.

Join 5-4, 6-1 and 7-3 = each 1.5 cm (1/2) 8/7 = about 4 cm (1 y2).
Join 6-8 9 is midway 6 to 8 10-9 = about 2.5 cm (1")
Shape 6-10-3 as shown
Mark point 11 as shown
Join 2-1
12-1 = same as 1 to 0.

Fig 4.8 Circular sleeve

4.2.9 Leg-o-Mutton sleeves

This is a long sleeve which is tight fitting below the elbow, and puffed above with gather at the top edge prepare a long sleeve pattern and draw line x y (elbow line) as shown in figure now draw MN through middle of sleeve slash along X Y and M N and spread to top edge apart as shown in figure

Fig 4.9 Leg-o-Mutton sleeve
4.3 Suitability of sleeve types of figure types

Slim figure should use puff sleeves and their variation also and bell sleeves they hands looks plumpy and stout.

Short figure should wear long sleeves ¾ sleeves. Tall figure should select puff sleeves and short sleeve such as petal, cap and Magyar.

Vertical stripes tend to increase height and reduce width horizontal stripe sleeves tends to decrease height and add width. Diagonal lines tend to emphasize sleeves. The cut of sleeves in important too narrow shoulder are at their best in raglan sleeves that avoid the set in arm holes. The added bulk of a jacket or cardigan can do a lot for the figure of a person it tall and slender.

Summary

Sleeves must be accurately cut, set and fitted if they are to be comfortable in wear. They should be cut on proper fabric grains and care must be taken to fit them in such a way that arm can move quite easily.

(i) Test Your Understanding

1. _____ is the example for style in which fill bodice or part of bodice is combined with sleeve.

2. Circular sleeve is called _____

3. _____ is along sleeve which is tight fitting below the L bow and gathers at the top.

4. _____ sleeve have a cuff.

5. ____ sleeve is narrow at the top flares at lower edge.

(ii) Test Your understanding (Matching )

1. Bishop sleeve (   ) a. Long sleeve which is gathered at top

2. Bell sleeve (   ) b. At top

3. Kimono sleeve (   ) c. sleeve which is flare at lower edge

4. Lego-mutton sleeve (   ) d. Sleeve cut in one with bodice

5. Umbrella sleeve (   ) e. 3/4th sleeve

(i) Test your understanding Answers

1. Kimono sleeve / Raglan sleeve
2. Umbrella sleeve
3. Leg-o- Mutton sleeve
4. Bishop sleeve
5. Bell

(ii) Test your understanding Answers
1. (e)
2. (c)
3. (d)
4. (a)
5. (b)

Short Answer Type Questions
1. List out various parts of sleeve.
2. List out the types of puff sleeves.
3. What are the measurement required for the sleeve?
4. What is bishop sleeve? where do you use it.
5. What us Bell sleeve?
6. Illustrate circular sleeve.
7. List out the sleeves suitable for children garment.
8. What is raglan sleeve?

Long Answer Type Questions
1. Draft and develop Kimono sleeve.
2. Explain in detail about different types of puff sleeves.
3. Explain the drafting procedure of sishop sleeve.
4. How do you convert plain sleeve into Bell Sleeve.
5. Write about the suitability of sleeve types of figure types.
5.0 Introduction

Yokes are generally used as an attachment for the skirts, frocks etc. A yoke is defined as a segment of a garment and attached to the garment there are different types of yokes such as midriff yoke, partial yoke etc. The yoke may be used to support the fullness or to release the fullness. The with the plain edges are finished with the plain and the yokes with the curved edges are finish with the plain seam and the yokes with the curved edges are finished with the lapped seams.
5.1 Definition of Yoke

A yoke is a segment of garment usually placed at the shoulder, above the waistline (at midriff) or below the waistline (at hi) for controlling and supporting fullness needed over the bust, chest, hips.

5.2 Types of yokes for preparing pattern

(a) Partial yoke

(b) Yoke with or without pattern

(c) Midriff yoke

5.2.1 Partial Yoke

A yoke does not extend across the entire garment is referred to as “Partial yoke”

![Fig 5.1 Partial Yoke](image)

The design shown in the above figure serves much the same purpose as a yoke but is somewhat similar to a dart in its construction. As the dart same line does not extend across the entire garment, it is sometimes referred to as partial yoke. To make the pattern for this style, first of all shift the waistline and side seam darts to the shoulder line.

**Construction of Partial Yoke**

Reinforce corner D with machine stitches close to the seam line. Gather the seam line CD of fig so that s becomes equal to CD fold the upper part of the garment down, right sides facing and pin the two seam lines DC and X together as shown in fig - the dotted lines show the position the upper part of the garment stitch as you would stitch a dart with gathered side up.
5.2.2 Yokes without fullness

In figure shows a triangular yoke design without fullness to make the pattern, trace the basic bodice pattern and extend the basic darts till the bust point P as illustrated mark matching notches and cut apart along the yoke line. Label the yoke as section I and the lower part of the bodice as section II Figure 5.3 In section II close the darts as shown.
5.2.3 Yoke with fullness

The shoulder yoke shown in fig has fullness in the form of tucks within it. Instead of tucks you can design the yoke with pleats shirring or smocking. Cut the required amount of fabric and stitch the tucks according to the design keep the paper pattern on the tucked fabric and cut in the correct shape including seam allowance Fig.

5.2.4 Midriff yoke

Midriff yoke is also referred to as for or waist yoke and is a good device for securing fullness over the bust and smooth and trim fitting around the waistline.

To make the pattern for this design trace the basic bodice pattern and short the side seam dart also to the waistline. Now draw the yoke line ABCD as shown in fig 5.5. For normal figure marked B and C ½ below the bust point P.D. can be marked an about above the level of B, and A 1/2 below the level of B since the blouse with midriff yoke fits more snugly than the basic blouse the yoke is to be tightened by marking the darts 1/4 wider on either side of B and C on the yoke line as shown by the dotted line EP and FP. Mark notches to indicated the beginning and ending of gathers now cut the pattern apart along the yoke line, and close the dart on the yoke. Label the upper blouse and yoke as shown. (Length the upper blouse slightly where it is to be gathered as illustrated by dotted line. If more fullness is desire than the dart equivalent is slash the upper blouse along SP (See fig and spread apart the required amount at the lower edge.)
5.3 Selection of yoke design for different dresses

The yoke design to be used on a garment will depend on various factors.

5.3.1 Design of the fabric

There should be harmony between the shape of the yoke and design of the fabric. For example, material with large checks or strips are not really appropriate for yokes with round or curved shapes as in Fig 5.6.

5.3.2 Design of the garment

The design of the yoke should harmonize with the design of the garment. You can design a yoke which repeats the shape of the dress and of design detail such as collar, cuff pockets, etc. but with slight variation to avoid monotony. Fig 5.7 shows a dress design with a scalloped yoke, round collar, puff sleeves, and matching pockets.
5.3.3 Purpose and use of the garment

Or school uniform home wear garments etc select simple yoke styles for party wear garment you can design yokes of novel and decorative shapes.

5.3.4 Sex and Age of the wearer

Round and curved yokes are more suitable for girls while straight yokes are more suitable for boys.
Figure and personality of the wear deep narrow yoke with vertical decoration induce vertical eye movements giving an impression of added height and less width. Thus making a person look taller and slimmer. Hence select such yoke designs for a short plump figure. Horizontal lines in yokes make a person look short and fatter and are suitable for thin figures.

5.4 Creating Variety

Variety in shape and size: You can designs yoke with various such as square round, straight lines, scalloped, triangular etc some time part of yoke may extend to the full length of the garment. This type of yoke is referred to as yoke with panel sometime the yoke may extend into the sleeve or it may extend only part of the way across the garment.
5.4.1 Variety in material and grain

If the garment of light colour, the yoke made out of a contrasting colour fabric, for a dart colour garment the yoke may be hile or light colored. A yoke the prints on an other wise plain garment or vice versa would give good appearance.

5.4.2 Designing decorative seaming

The yoke can be joined to the body of the garment in a decuratives way by insertion of reuffles.

(a) Lace or ric rac (b) Binding

(c) By working fraggating or decorative stitches.
Designing fullness or duration within the Y ork the York can be beaded, quitted, embroidered, shirt smoked tucked to pleated.

Introducing the yoke at different position on the garment, The yoke may be introduced at the top of the dress (Shoulder yoke shown) above the waistline (Midriff yoke as in) or below the waistline (hip yoke as in).

Designing yokes which release fullness in various form( gather, pleats, tucks etc) Fullness is released in the form of gather in the design shown on inverted pleat end in the form of tucks.

Summary
Yoke helps to keep the upper area or the waistline of garment time and smooth. The attachment of yokes with seam is also used as decorate fro particular design the same purpose may be applied for different design.

(i) Test your Understanding
1. ____ is segment of a garment.
2. A yoke which doesn’t extend across the entire garment refer to _____
3. Midriff yoke is also refer to _____ and _____ yoke.
4. You can design yoke with a variety in _____.

(ii) Test your understanding
1. Midriff Yoke ( ) a. Does not extend entire garment
2. Partial ( ) b. Segment of garment
3. Yoke ( ) c. Tucks
4. Yoke with fullness ( ) d. Waist yoke

(i) Test your understanding (Answer)

1. Yoke
2. Partial
3. Torso and Waist
4. Shape

(ii) Test Your Understanding

1. (d)
2. (a)
3. (b)
4. (c)

Short Answer Type Questions

1. What is Yoke?
2. How do you decorate yoke.
3. What is partial yoke?
4. What is Midriff yoke?
5. What is Yoke without fullness?

Long Answer Type Questions

1. Write in detail about types of yoke.
2. Explain about Midriff yoke.
3. How do you create variety in yoke.
4. What are the factor required selection of yoke design?
6.0 Introduction

A collar is a decorative and functional feature of a garment. The collar style should suit the face shape, hairstyles and remaining part of the garment most collars are cut separately and sewn to the neckline of the garment except shawl collar which is part of the bodice.

Introduction to different of collars

Collars are classified according to the various factors such as

Learning objectives

After studying this unit, you will be able to understand and:

- Different types of collar
- Creating variety in collar
- How to decorate collars
- Collar suitability according to age group
(a) Width of the collar
(b) Shape of its outer edge
(c) Neckline shape
(d) Roll of the collar etc.

The following are the example of collar differing in width and shape of the outer edge

Eg

1. Peter pan collar is narrow collar with rounded end
2. Sailor collar is a wide collar having a square shape at the back and V shape in front.

Various types of collar

![Various types of collar](image)

**Flat collar**: Regardless of width this collar rolls over from the neck seam and either ripples or lies flat on the body (i.e. shoulder). It has a sufficient “stand” to control the neckline seam (1 cm i.e. ⅛ or less). The collar may be of the same width all around or wider at the front or back as required the ends may be point or rounded or of desired shape.
**Flat peter pan collar**: This collar has rounded ends at front and back, with opening at the back.

![Fig 6.2 Peter pan collar](image)

**Rolled Peter Pan Collar**: It is a rounded turned down collar with a rolled effect at the neckline.

![Fig 6.3 Rolled Peter Pan Collar](image)

**Plain open collar**: By using the neckline and back bodice at the shoulder.

![Fig 6.4 Open collar](image)

**Convertible collar**: It is pointed collar, applied double, to the normal neckline. It is worn open or closed.
Stand Collar: This collar is upright in line, setting from the neckline upward, toward the chin. It should always be interfaced if it is to retain the smart appearance of its upright line. For men the opening is always kept at the front, but in ladies garment the opening is either at the front or at the back.

Frilled stand collar: As per picture, frill is joined to a stand collar, hence the name this collar is useful for thin necked figures.

Frill Collar: If frill is directly attached to the neckline instead of joining it to the stand it is known as frill collar.
Fig 6.8 Frill collar

**Rolled stand collar**: This collar extends upwards from neckline to the point where it rolls of folds over. It is higher at the back than in front hooks and eyes are attached at the back.

Fig 6.9 Rolled stand collar

**Stand collar with a knot**: As per picture this straight cut stand collar has a knot, with loose ends at front.

Fig. 6.10 Stand Collar with knot

**Tie-Stand collar**: It is combination of the and stand collar. It is useful for girls wearing frocks, shirt, blouses, masses etc.
Ruffle collar: The outer curve of this collar is for more, compared to the neck edge of the dress. So it does not touch the bodice, but always lies in a swing position at front and back as per picture use pattern to cut this collar.

6.1 Drafting of following collar

1. Peter pan collar
2. Scalloped collar
3. Sail or collar
4. Mandarin collar

6.1.1 Peter pan collar

This is flat collar with rounded ends widely used on children’s garments. It may be given a slight roll if desired.
(a) **One piece peter pan collar**: This is used for front open dresses. At the back the collars is continuous in some dresses front it is divided with rounded ends. To make the pattern for this collar, first of all duplicate the neckline area of the garment as explained below keep the front and back together. Bodice pattern together on a paper with neck points of shoulder lines touching and with the patterns overlapping 1/4 near the armhole as illustrated. Trace the outline of the upper part of the bodices. Label the front neckline as TS and back neckline as SR. Now mark X, Y, Z, 1 ½ to 2 away from T, S and R respectively. Join XYZ as shown, and round off the collar in form through p., Mark a notch at s, to indicate shoulder point label the collar as shown and cut out the collar pattern.

![Fig 6.13 Peter pan collar](image1)

6.1.2 **Two piece peter pan collar**

This is used for back open dresses and has rounded ends at back and front. To prepare pattern, to take the one piece peter pan collar pattern and round off the collar at the back through point P, as shown label the collar as shown.

![Fig 6.14 To piece peter pan collar](image2)
6.1.3 Scalloped collar

Draft collar of 2 to 3 width following the instruction given above for cope collar. Modify the shape of the outer edge of collar to scallops.

The finished appearance of the collar

![Fig 6.15 Scalloped collar](image)

6.1.4 Sailor collar

This collar is suitable for baba suits and little girls dresses. It has a V shape in front and square shape (Similar to the illustration given) at the back. First of all modify the bodice front neckline to V shape by marking X, “3 to 4” below T and connecting SX. Now trace on a sheet of paper the neckline area of back and modified front bodice patterns after overlapping the shoulder points near arm hole by ½ to 1. Draw the style line ZPX for the outer edge of the collar as shown.

![Fig 6.16 Sailor collar](image)
6.1.5 Mandarin Collar

This is a narrow collar (about 1 wide) that stands up above the neckline of the garment all around. It is usually applied to front open garments.

![Mandarin Collar Diagram]

Square lines from 0, fold at 0-1
1.0 = 4cm (1 ½) or to faste
2.0 = half neckline plus 1 cm (1 ¼)
3.2 = same as 1 to 0 Join 3-1
4 = is midway 2 to 0
5.2 = 1.5 cm (1 ½) shape 5-4
6.3 = 1cm (1 ¼)
Join 5-6 and extend to?
7.5 = 1 to 0 less 0.75 cm (1 ¼”)
Shape 7.1 as shown

6.2 Terms used in collars

**Neckline edge**: The edge of the collar that is stitched to the neckline of the garment.

**Collar edge**: The outer edge or style line of the collar.

**Collar stand**: The underneath part for the collar that supports the folded-over section. Its is described by its height (the distance from neckline edge of collar to roll line at centre back). The shape of the neckline edge neckline
edge control the collar by either allowing it to lie flat or forcing it upward to form a stand. Collar and stands can be developed in one or two pieces.

**Roll Line**: The place where the collar folds over dividing the collar into stand end outer collar section.

![Fig. 6.18 Collar](image)

### 6.3 Creating variety in collar design

Collars can be designed in various shapes and size to create variety. A simple collar design can be made to look decorative and individual by introducing suitable trimmings such as scallops frills tucks gathers, smocking, buttons, lace, bows ricrac, embroidery etc. A collar may be cut out of material differing in colour design texture and grain from the rest of the garment to procedure interesting effects. For example, a printed dress may be designed with a plain collar or a plain dress with a printed collar, a white or light collar may be used on a dark coloured dress or vice versa, etc. For a checked fabric the collar will be effective if it is cut on bias while the rest of the garment is cut on straight grain.

### Summary

A colour is added to the neckline of a garment on order to enhance its appearance it also serves to finish the raw edges at the neckline – covers are made of double layer of fabric (with or without an inter forcing). With the outer edge hanging free. Since collars form a background for the face great care has to be taken in designing collar styles which suit the wearer.

### (i) Test your understanding (True of False)

1. Peter pan collar is a standing collar.
2. Mandering collar is called chin ease collar.
3. Collar can be decorated with yokes.
4. Frill collar is suitable for Boys.
5. A colour is a decorative and functional feature of a garment.
(ii) Test your understanding

Match the following

1. Peter pan collar (  ) a. Standing collar
2. Mandarin collar (  ) b. Suitable for frock
3. Sailor collar (  ) c. Flat collar
4. Scalloped collar (  ) d. Decorative functional
5. Collar (  ) e. V-Shape in front

(i) Test your understanding (Answer) ii) Test your understanding (Answer)

1. F 1. (c)
2. T 2. (a)
3. F 3. (e)
4. T 4. (b)
5. T 5. (d)

Short Answer Type Questions

1. What is Collar?
2. How do you decorate collar?
3. Mention the term used in collar.
4. Write about frill collar.
5. What is Ruffle collar.
6. Illustrate sailor collar.
7. What is scalloped collar?

Long Answer Type Questions

1. How do you draft peter pan collar.
2. Draft and develop sailor collar.
3. Write in detail about term related with collar.
4. Draft and develop mandarine collar.
5. With the help of the diagram explain scalloped collar.
Structure

7.0 Introduction
7.1 Grading principle
7.2 Methods of Grading
7.3 Grading machine
7.4 Grading procedure for Basic Slopers.

Learning Objectives

After studying this unit student will be able to

- Identify different grading techniques
- Selection of grading techniques
- Grading procedure for different size

7.0 Introduction

Grading is the of proportionally increasing or decreasing a master pattern according to a prescribed set of body measurement. Each piece of pattern is shifted and traced step by step while at the same time the original styles lines of pattern are maintained for instance of changing a size 10 into well fitting size 14, without losing the style proportions established by the designer.
7.1 Grading Principle

The two principle frequently used for applying are

1. The draft or multi size grade
2. The track or single size grade

7.1.1 The draft grade

This term applies when the pattern is returned to its original block or when the increment is applied to the actual pattern draft. This result in entire size range being super imposed on top of one another and can also be described by the term “nested” or “Stacked”. The individual pieces of pattern for each size are then spiked or traced off on to card. A draft grade can be either two or three dimensional draft grade is considered to be the ultimate method of applying grade increments. This is the system that will give the best results if it is used properly, and pre supposes the use of the correct increment it is the only way the front bodice suppression and the front and the bust point can be controlled minimizes the mistakes in calculating grade increments, i.e. only one set of calculation is necessary facilities any change in suppression. It permits the grading of a full size range from 10 to 22, incorporating different girth measurement if needed, Eliminates the needs to change to different blocks as the size increase to outsize. The exact grade that is applied can be seen and any error become apparent right away.

It helps the grader to become very accurate because it is drafting situation. The draft can be kept as a reference, and is thus readily available for easy style changes. Facilities easy styles proportioning of the grade because it provides an overview if the total patterning process. The draft can be graded by the pattern technician, and then handed over to an assistant to be spiked off and cut out into sizes. Vertical and horizontal increment application for a cardinal point has an obvious computer grading application.

7.1.2 The Track Grade

The term is used when grade increments are applied to individual pieces of pattern by moving the base pattern piece along predetermined tracks, making around the pattern section by section and thus altering its size. This system is usually two dimensional but can with difficulty be adapted to a three dimensional system. It require little knowledge are of pattern construction the basic instruments are easy to learn and follow. The method of applying the grade increments along tracks is simple. The idea behind the method is easy to understand.
7.2 Methods of Grading

- Grading can be classified into the following two methods
  - Three dimensional grading
  - Two dimensional grading

7.2.1 Three dimensional grading

Three dimensional grading is used not only to increase or decrease suppression.

Body Landmarks

1-2 Center front, neck to waistline
2-3 Waistline to hip
3-4 Hip to hemline
5-6 Side seam to waist
6-7 Side sea to hemline
5-8 Underarm seam
9-10 Over seam
11-12 Centre Back, neck to waistline

Fig 7.1 Length Measurement
Circumference and width Measurement

a. Neck circumference
b. Bust circumference
c. Waist circumference
d. Hip circumference
e. Bicep circumference
f. Elbow circumference
g. Wrist circumference
h-i Cross shoulder width

The following areas

a. Bust to shoulder
b. Hip to waist
c. Elbow to waist

• A good three dimensional system will closely follow the indication of the national survey data on body size and figuration. If the balance and fit of the stock size garment is to be retained suppression qualities must be adjusted per size. A three dimensional system will take this increase into account.

• Three dimensional grading is the optimum system and should be used whenever possible, particularly when grading close fitting or skin-tight garment and garments that progress in size from 10 to 22.
• The most important garment area is the bust to shoulder suppression. This controls the shape and balance of the bodice coupled with this is the movement of the bust point which has an effect on the bust to shoulder suppression quantity.

• The survey indicates that the bust point moves progressively close to other waist with the increase of the girth. A good working knowledge of pattern cutting is necessary to be able to use a three-dimensional grading system.

7.2.2 Two dimensional grading

• Two dimensional grading system only grades a pattern for girth and height and this application is therefore limited to loose or semidrape type garments because it retains the stock size suppression throughout the size.

• This system is never fully recommended by author because fitting and balance fault will automatically occur to the graded garment range when the suppression are not adjuster to cater for each size.

• However, a very loose fitting garment such as a shirt or a batwing blouse with a limited size range of say 10 – 12-14 may be supply graded using a two dimensional system. If however these garment need to be graded up to size 16 and beyond suppression may need to be included in the pattern and graded three dimensionally.

7.3 Grading Machines

A machine is not a substitute for grading knowledge, but if it is used properly it will enable grader to have greater speed and accuracy there are various hand machines available in market, but in general they all have same format and are simple in use.

A grading machine can grade one size at a time without removing original pattern from the machine. Greater speed can be achieved by grading two parts of the pattern at the same time. For ex: back and from bodice can be graded in be movement as shown in the diagram. Knobs control a set of scale that represent the girth and length measurement and mechanically shift the pattern in horizontal and vertical movements to obtain the larger size, the measurement are multiplied when all the size are graded the pattern must be removed from the machine to blend or join points on curves and angles.
7.4 Grading procedure for basic slopers

7.4.1 Grading the front bodice

When grading the front bodice the bust line is extended to both sides. 3/8 inch is added beyond center front and 1/8 inch beyond side seam for each size increase. There is no grading around the armhole the shoulder lengthens by 1/8 inch rises ¼ inch for each size increase. The neck grade rises 1/8 inch and extends 3/8 inch outward on the center front.

Take the 32 inch front bodice pattern and trace its outline on a larger sheet of paper. Extend waistline AB beyond B and work 4 points 3/8 inch apart. Label the last point a C similarly extend the bust line LM to n and work the points 3/8 inch part on MN connect CN corresponding points and extend these 4 lines upwards as shown these are the center front lines of various sizes. On the shoulder line, rule vertical lines upward from G and H mark off 4 points at 1/4 inch interval along each of these lines label the highest points as P and Q respectively.

Connect PQ and extend it on the either side by 1/2 inch and work points 1 and k. 1k is a shoulder line of size 40 connect G1 and H k as shown.

Extend centerline front line upwards and marks off 4 points 1/8 inch apart. Label the highest point as F and connect KF as shown.
corresponding points to form the neckline and extend the lines to meet the center front lines.

![Fig 7.4 Front bodice](image)

### 7.4.2 Grading the Back Bodice

Take the 32 inch size back bodice pattern and trace its outline on a large sheet of paper. Extend the center back line A1A by one inch and mark 4 points 1/4 inch interval label the last point as A2. Mark C=1 inch above B. mark CD = 0.5 inch and connect DB divide DB into four equal parts, then connect these points to the points marked above the center back line as shown. Now draw SF parallel the shoulder line BE, with DF = BE +1 inch.

This will be shoulder line for 40 inch size connect F to the original shoulder point E.

Mark 3 points which divide EF into 4 equal parts, and join them to the corresponding points on DB by lines which will be parallel to DF. Next draw the horizontal line Lm from the underarm point and outward and mark 4 points 1/4 inch apart.

Now extend bust line LM points 1/4 inch part and mark points 1/2 inch apart connect all the point marked as shown.
7.4.3 Grading the sleeves
Take the sleeve pattern of bust size 32 inch and trace it on a sheet of paper. Extend line AB one inch beyond B to B1 and one inch beyond A to A1. Between AA1 and BB1 mark points at 1/4 inch individual extend the center line one inch beyond C to C1. On CC1 mark points at 1/4 inch apart. Extend line EF one inch beyond F to F1 and one inch beyond E to E1. Between EE1 and FF1 also mark points 1/4 inch apart. Now connect respective points. The outer must pattern is 40 inch size, next one 38 size and soon.

**Summary**

With the help of grading we can easily alter the sizes suppose it bust size is 32 inch, with the help of grading we can easily change 32 inch to 34 inch to 36 inch. Even we can alter the sleeve sizes according to the bust size.

**(i) Test your understanding**

1. _____ is process of proportionally increasing or decreasing master pattern.
2. _____ is multi size grade.
3. Two dimensional grading system only grade a pattern for ____ and _____.
4. Track grade is ____.
5. Three dimensional system follow ______ data.

**(i) Test your understanding (Answer)**

1. Grading
2. Draft
3. Girth and height
4. Single size grade
5. National survey data

**Short Answer Type Questions**

1. What is grading?
2. Mention the methods of grading.
3. Illustrate grading machine.
4. How many types of methods of grading are classified.
5. Write any two grading principle.
6. How do you grade a sleeve sloper.
7. What us draft grade c ?
8. What is track grade ?
9. In which body measurement three dimensional grading is used.
10. Write about two dimensional grading.

Long Answer Type Questions

1. How do you grade part basic sloper.
2. Write about the methods of grading.
3. What are the principle required for grading.
4. Explain in detail about grading machine with diagram.
5. Write the procedure for back body sloper.
8.0 Introduction

The apparel industry is massive business structure spanning the globe petition. In today’s international markets requires levels of spreading using a travelling machine efficiency and omy never before attempted by apparel firms. Production costs tend to higher in the united states because of higher labor rates
but service quicker turnaround times and better quality products “12 quick Response” strategies utilizing high technology can reduce merchandise cycle times, increase sales, and reduce inventory investment thus increasing profits.

### 8.1 Importance of Garment Industry

The organizational structure of the apparel industry can be divided into four levels, beginning with production and distribution of material at the mill production level and ending with the consumer. At the mill level (Level 1) material, such as fabrics (including piece goods and interlining), zipper, thread, trims, and buttons are manufactured and sold to apparel firms.

At the apparel manufacturing level (Level 2) apparel firms are responsible for the marketing, merchandising, and production of products.

**Apparel**

**Organization of the Apparel Business**

![Organizational Structure Diagram]

Manufactures have two types organizational structures

1. Those that perform all or nearly all of their manufacturing within their own facilities and by their own employs.

2. Those that contract some or all of the manufacturing functions to other firms.
Contractor are firms that make a profit by providing sewing or specially or specially services to one or more apparel manufacturers, retailers or government agencies.

Retailers are also identified by stores type in their traditional roles in level 3, the retail level. Apparel firms that hire contractor services often buy material, design, and sell the products produced sewing contract may use the material and pattern provided by manufactures or retailer and provide equipment and labor to produce the finished garments according to the manufactures or retailer specification.

Many manufactures and retailer hire specialty contract to perform process or which they lack skills equipment.

Level 4 represent consumer, who are the target and purpose of the entire textile and apparel industry satisfied consumer make business growth and profitability possible.

8.2 Laying

The commonest form of spread in bulk production is one where all the plies of fabric are the same length underlying the complete marker plan. Through this plan can contain the parts for only one garment style, it is normally scrambled that is it contains the pattern pieces for a number of garments, usually in different sizes, interlocked together in the most economical manner.

An alternative type of spread is the stepped in which series of separate, usually single-size marker are positioned on top of varying. Number of plies this was shown in fig spreading of stepped lay may take less time than the alternative of several scrambled lays.

![Fig. 8.1 Laying](image)

The methods of spreading which the industry uses can be divided into
1. Spreading by hand

2. Spreading using a travelling machine

1. Spreading by hand

Despite the advent of spreading machinery which will cope with a wide variety of fabrics, there is still a frequent need to spread fabrics by hand. It is a time-consuming method, requiring an operator at each of the table.

The fabric is drawn from its package which, if it is roll may be supported on a frame, and carried along the table where the end is secured by weight, or a clamp. The operator work back from the end, aligning the edges and ensuring that there is no tension and that there are no wrinkles. The play is normally cut with hand shears or with a powered circular knife mounted on a frame, through a few fabrics are ripped at the end of the ply of discover the exact weft grain and enable some straightening of slightly crooked fabric to take place. Typical fabric which must be spread by hand are checks.

Crosswise stripes and other regularly repeating pattern, as well as those with a repeating design at intervals of garment length. If accurate “Stacking up of design vertically through the speed is necessary the fabrics may be spiked on to a series of sharp spikes set vertically on the spreading table.

The cost of hand spreading is partly offset by the ability to cut a fabric in bulk which might otherwise have to be cut in single garments.

2. Spreading using traveling machine

Spreading machine carry the piece of fabric form end to end of the spread, dispensing one ply at a time on the spread. Their basic elements consist of frame of carriage, wheels travelling in guide rails at the edge of the table, a form fabric support and guide collar to aid the correct unrolling of the fabric. In the simpler versions, the operator the free end of fabric in line the end of the spread pushes the spreader to the other end, cut of the ply in line with end, clamps the beginning of the next ply pushes the spreader to the end and so on.

More advanced spading machines may include a motor to drive the carriage a platform on which the operator rides, ply cutting device with automatic catcher to hold the ends of the ply in place, a ply counter an alignment shifter actuated by a photo electric edge guides a turntable and direct drive on the fabric support synchronized with the speed of travel to reduce tension in the fabric being.
8.3 Cutting machine

Introduction

A crucial stage in manufacture of any garment is CUTTING, and much
spade work is involved in actual cutting out of garment parts to ensure good
quality and satisfy the required specification of garment style/design.

Numerous attempts have been made over the years to develop methods
of cutting fabric other than by means of same kind of metal blades.

There are two basic type of cutting machine

- Continuous, and
- Intermittent

Cutting Machine

<table>
<thead>
<tr>
<th>Continuous</th>
<th>Intermittent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical blade</td>
<td>Hand</td>
</tr>
<tr>
<td>Reciprocating cutting machine</td>
<td>Hand shears</td>
</tr>
<tr>
<td>Rotary blade cutting machine</td>
<td>Knife cutters</td>
</tr>
<tr>
<td>Band knife machine</td>
<td>Drills</td>
</tr>
<tr>
<td>Machine</td>
<td>Thread marker</td>
</tr>
<tr>
<td>Straight knife</td>
<td>Round knife</td>
</tr>
</tbody>
</table>

Brief: The straight knife cloth cutting machine is the most popular cutting
machine in the garment industry. It is most versatile cutting machine suitable
for cutting all kinds of fabrics from light weight to heavy weight material.

It is vertical blade, lateral cutting machine which is portable and less
complicated in operation “EAST MAN” is the most popular straight knife
machine.

Technical Features

1. Manual operation (Handle): It is hand held power tool whereby
   the handle guides the cutter to direct blade accurately.
2. **Electric Motor**: This 3-phase assures a smooth cutting operation by operating at a speed of 1750-3500 R.P.M.

3. **Power**: The machine power needed is determined by
   
   (a) Height of lay
   
   (b) Construction of fabric
   
   (c) Stroke of blade

4. **Automobile sharpening device**: There is an abrasive best sharpening device which sharpens the blade.

5. **Standards**: The standard of the “UPRIGHT” carries the straight vertical blade.

6. **Base Plate**: The base plate is low of the machine and the surface is smooth to make the vertical travel on it smoothly before and after cutting. It has a specially designed TONGUE-like shape for free turnings on curves and edges. The base plate has roller (4 in NO) underneath for easy movement.

7. **Blades**: The cutting blade is vertical with varying edge characteristics i.e. the blade may be coarse for dense operands.

   This mane is given to this edge for smooth fabrics. The blades in be
   
   1. Straight (plain)
   2. Saw tooth edges
   3. Separated
   4. Waved Normally available us3ed blade height vary from “6—”12 (i.e. 10 cm to 33 cm) and normally strokes vary from 2.5 cm to 4.5 cm.

8. **Clamp**: It is holding device which presses and holds the plies together at the pitch.

9. **Other**: Fan guard and on-off switch cover are equipped for safety reason.

10. **Options**: Knife protection and blade cooling system are optional.

11. **Machine weight**: 14.5 Kg generally.

**Work mechanism**

The blade is initially sharpness and the base plate of its rollers slides under the grazed paper which is spread below the bottom ply of the fabric lay and then the lay of the fabric is clamped on the base plate. The blade must
present a very thin edge to the fibers and cutting is done along the marker, with the aid of an on and off switch.

When the machine is switched on the knife oscillates into and fro motion; and contact with the fabric lay, shears the produces free standing cut parts. And this definitely requires skill to get long straight cuts to get curves.

### 8.4 Sewing Equipment

The clothing industry requires special sewing machine for sewing a wide variety of garment. Specialized sewing equipment for their own particular requirement is a basic necessity in the garment unit.

*Fig. 8.2 Single needle lock machine*

#### 8.4.1 Single needle lock machine

- Works with electronic controls
- Functions at a high speed of 6000 rpm
- Automatic clipping of top and bottom threads
- Has several special sewing machine attachments which can be used to help the operator maintain constant standard of quality particularly when stitching collars, cuffs, yokes etc.

#### 8.4.2 Over lock machine
This name is given to the machine as it garment to be finished

• It cover rough edges of fabrics in order to presents a clear and neat appearance where seam edges are visible.

• It speeds up to 8500 rpm and does automatic edges timing and thread clipping.

8.4.3 Button sewing machine

• This is also high speed electronic machine

• Buttons with 2, 4, holes or shanks can be sewn on the same machine by simple adjustment to the button is moved from side to side by the button clamp.

• Each machine has maximum numbers of stitches i.e. 16, 24 or 32 end can adjusted to the sew the few or half the stitches i.e. 8 or 16, 12 or 24 and 16 or 32

• Generally decorate button can be sewn with the half the numbers of stitches used for functional buttons.
8.4.4 Button Hole Machine

• This is a very expensive machine

• The machine automatically still through the garments and sews its edges to prevent fraying and stitching.

• The number of threads used depend on the garment type and quality

• In standard types of garments such as shirts the operator simply position that work in the machine whatever button holes at predetermined distances which the machine automatically stitches and trims the thread ends.

8.5 Finishing Equipment

Finishing and pressing are two process which have the greatest influence on the finished look of a garment.

The basic components of pressing are

1. **Steen and heart are necessary**: To relax the fabric and make it pliable enough to be moulded by manipulation.

2. **Pressure**: When the cloth has been relaxed by steam, pressure is applied which sets the fibers into their new positions.
3. Drying: After the application of steam pressure the component or garment must be dued and cooled so that cloth can revert to its normal condition this is done by vaccum action which removes surplus water in the fabric and at the same time cools it. For some pressure operations hot air or infra red heating is used instead of vaccum for drying.

Machinery used for pressing and finishing
a. Hand iron with a vaccum press table
b. Sussors press
c. Caro usual machine
d. Steam dolly

8.5.1 Packing

Most garment are packed is plastic bags. Either at the end of production or when they enter the finished goods store products like shirts and under wears are usually bagged and boxed directly after final inspection and enter the stores in pre packed from other hanging garment such as jacket, dresses and skirts are usually bagged by manual machines semi automatic machines fully automatic machines some of these automatic machines bag, seal and transport in trolley; some 500 garments per hour.

When boxed or hanging garment have to be transported in bulk the garment or boxes are packed into cartons which can be sealed by adhesive paper or plastic manual and automatic machine are available for both.

Summary

The apparel industry uses specialized industrial machinery suitable for cutting fabric, sewing machines such as single needle lock stitch machine button hole machine fusing machine, storage and packing equipment the aim of using these machinery is to reduce handling time produce equality products in less time.

(i) Test your understanding

Retailer ( ) 1. Level 1
Contractor ( ) 2. Level 2
Consumer ( ) 3. Level 3
Manufactures ( ) 4. Level 4
(ii) Fill in the Blanks

1. _____ machine function at a speed of 6,000 RPM.


3. Button with _____ holes can be with same machine.

4. _____ and _____ are two process which have finished look of garment.

5. In button hole machine the number of thread used depend on _____ and _____.

Short Answer Type Questions

1. Name the sewing machine used of apparel industry.

2. Write about packing.

3. List the machinery used for pressing.

4. Name the methods in laying out the fabric.

5. Write two functions of button hole machine.

6. Write about draying.

Long Answer Type Questions

1. Write in detail about laying of fabric.

2. Write in detail about cutting machine.

3. Explain in detail about pressing.

4. Write in detail about any two sewing equipment.

5. Write in detail about straight knife cutting machine.
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