Intermediate Apparel Production

LEVEL-2

NTQF Level -II

Learning Guide #27

Unit of Competence: Grade Pattern

Module Title: Grading Pattern

LG Code: IND IAP2 MO8 LO1 LG27

TTLM Code: IND IAP2 MO8TTLM 0919v1

LO 1:   Developing grading specifications

Instruction Sheet	Learning Guide #-27

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

- Applying OHS practices
- Selecting and preparing workstation and/or tools and equipment
- Identifying grading system used in workplace
- Identifying measurements of base size and subsequent spread
- Calculating number of sizes in grading
- Establishing grade increments between sizes

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, **you will be able to –**

- Workstation and/or equipment are selected and prepared according to *OHS practices*
- *Grading system* used in workplace is identified
- Measurements of base size and subsequent spread are identified
- Number of sizes in grading is calculated
- Grade increments between sizes are established

Learning Instructions:

1. Read the specific objectives of this Learning Guide.

2. Follow the instructions described in number 1 to 71.

3. Read the information written in the "Information Sheets all page". Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.

4. Accomplish the "Self-check all question.

5. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering Self-check all question 1).

6. If you earned a satisfactory evaluation proceed to "Information Sheet 2". However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #1.

7. Submit your accomplished Self-check. This will form part of your training portfolio.

8. Finally do the operation sheet

9. Do the LAP test

Information Sheet-1	CONTENT-1 Applying OHS practices

1.1 Applying OHS practices

1.1.1 OHS practice

Occupational safety and health (OSH) also commonly referred to as **occupational health and safety** (OHS) or **workplace health and safety** (WHS) is an area concerned with the safety, health and welfare of people engaged in work or employment.

The goals of occupational safety and health programs include furthering a safe and healthy work environment.

OSH may also protect co-workers, family members, employers, customers, and many others who might be affected by the workplace environment

In the United States the term occupational health and safety is referred to as occupational health and occupational and non-occupational safety and includes safety for activities outside of work.

Occupational safety and health can be important for moral, legal, and financial reasons. In common-law jurisdictions, employers have a common law duty (reflecting an underlying moral obligation) to take reasonable care for the safety of their employees,[3]

. Good OSH practices can also reduce employee injury and illness related costs, including medical care, sick leave and disability benefit costs.

Prepare workstation

- Set up Work area according to ***OHS practices***
  Assessment and implementation of risk reduction measures

  Specific to the tasks described by this unit, and may relate to:

  - ✓ manual handling techniques
  - ✓ standard operating procedures
  - ✓ personal protective equipment
  - ✓ safe materials handling
  - ✓ taking of rest breaks
  - ✓ ergonomic arrangement of workplaces
  - ✓ following marked walkways
  - ✓ safe storage of equipment
  - ✓ housekeeping
  - ✓ reporting accidents and incidents
  - ✓ environmental practice

- Check and made equipment

- Under take .routine maintenance of ***equipment***.
  - ✓ Lay-up equipment:
    - weights
    - clamps
    - spreading table
  - ✓ Cutting equipment:
    - round blade cutter
    - straight knife cutter
    - drills
    - metal die
    - computerized cutting machine
  - Computer and appropriate software
  - Marker card/paper
  - pattern
  - seating
  - ✓ cutting table
  - air flow and flotation tables

1.1.   House keeping

What is housekeeping?

The general definition of housekeeping is cleaning, organizing and performing the general upkeep of a home. Housekeeping is usually either done by family members through chores or by a professional housekeeper who is hired.

Most housekeeping routines involve sweeping, dusting, vacuuming and general tidying. There may also be inconsistent tasks like changing a light bulb or dead batteries throughout the home.

Element of house keeping

- ➢ **Aisles :**passage b/n rawof seat should be wide enough for movements.
- ➢ **Space**: insuring sufficient room for the individual to work
- ➢ **Storage :**adequate space for material and tools
- ➢ **Material handling:** layout planned for materials and equipment flow effective method
- ➢ **Ventilation**
- ➢ **Floor and wall** :construction and material that are easy to keep clean
- ➢ **Lighting:** well distributed artificial light or effective use of available day light.

What is workplace housekeeping?

Workplace housekeeping is the maintenance and cleanliness of work spaces to ensure employee safety and prevent workplace injuries.

1.2.1 Safety

Definition of safety

- ✓ the quality of being safe
- ✓ freedom from danger or risk of injury
- ✓ a contrivance or device designed to prevent injury

1.1.1. personal safety

- ✓ wear Gawain before starting class
- ✓ clean your shop
- ✓ use comfortable chair
- ✓ do not touch the hot light
- ✓ keep away your finger patch of sewing needle

1.1.2. Equipment safety

- ✓ Clean your machine before and after sewing
- ✓ When you guide the thread do not put your foot on the pedal
- ✓ Never start stitching with
- ✓ out cloth under the needle
- ✓ Turn off your machine after sewing
- ✓ Oiling and manual lubrication the machine
- ✓ Close security machine to avoid dangers dirty

Self-Check -1	Written Test

Short Answer Questions

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1 writes Element of house keeping?

2   List types are Safety

3   Write about The main focus in occupational health is on three different objectives?

Note: **Satisfactory rating - 3 points**   **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____
Rating: _____

1.2 Selecting and preparing workstation and/or tools and equipment

Specific to the tasks described by this unit, and may relate to:

1.2.1 Patterns, scissors, ruler, square rule, marker pens, hole punch, pins, fashion triangle, French curve, pattern notches, weights, tape measure, meter rule, paper scissors, pattern hook masking tape, sticking tape

- manual handling techniques
- standard operating procedures
- personal protective equipment
- safe materials handling
- taking of rest breaks
- ergonomic arrangement of workplaces
- housekeeping
  reporting accidents and incidents

EQUIPMENT, TOOLS AND MATERIALS: Drawing instruments such as T-square, Meter s measure, French curve Pencil/ Fixer with eraser, pattern paper tracing paper, Scotch tape.

Drawing Table

Eraser

Holder   Set of pens

Rapidograph
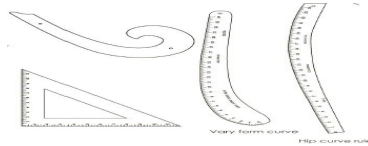
- **Pattern grading** is the process of *systematically increasing and decreasing* the dimensions of a **master pattern** into a range of sizes fit production.

- Why pattern grading is required?

Due to **cost constraints**, one sample-size pattern is developed and fitted, then other sizes are graded from this master pattern.

- The purpose is to achieve a **good fit in each size without changing the style sense** (proportion and balance) of the garment design from the master pattern.

How Grading systems are developed?

Grading systems are developed to translate the **body changes** from size to size to corresponding pattern pieces.

- The procedure used to develop a grading system is

- (1) **collect anthropometrical data** from individuals within a target population;

- (2) **statistically analyze** the collected data to determine **sizing specifications** and standards; and

- (3) **distribute the dimensions** from the *size specifications* across the body, to replicate the body shape changes from size to size

Select and prepare Workstation and/or equipment according to *OHS practices*

Hazard identification and control, risk

Assessment and implementation of risk reduction measures

Specific to the tasks described by this unit, and may relate to:

- manual handling techniques
- standard operating procedures
- personal protective equipment
- safe materials handling
- taking of rest breaks
- ergonomic arrangement of workplaces
- housekeeping
- reporting accidents and incidents

Self check 2	Written Test

Short Answer Questions

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Why pattern grading is required?
2. List Drawing instruments
3. *How Grading systems are developed*

Note: **Satisfactory rating - 3 points**   **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Information Sheet-3	CONTENT3- Identifying measurements of base size and subsequent spread

- **1.3** Identifying   measurements of base size and subsequent spread
  - Measure flat, 2D patterns
  - Shaped, 3D patterns
  - Position of constant or stack point

1.3.1   Identifying Measurements of base size.

2   Although the usefulness of anthropometric data in developing effective sizing
3   systems has been recognized for many years, its utilisation has neither been
4   uniform nor a panacea for all problems. Traditional approaches to
5   anthropometry have prescribed methods and instruments for measuring linear
6   heights, depths and widths, sometimes with calibration. Usually landmarks
7   are identified using bone structures beneath the skin which are then marked
8   on the body. Although landmarks show the beginning and end of a dimension,
9   their determination and measurement can be inaccurate and variable, resulting
10 in invalid and unreliable data. To avoid intra- and inter-measurer errors,
11 training of personnel is necessary. Sampling procedures have to consider
12 population representation, especially where size charts are a required outcome.
13 Analysis and interpretation of data require statistical knowledge and its
14 application to clothing design issues. Because surveys are time consuming
15 and expensive, availability of reliable data that are current is rare; and when
16 available they are proprietary and not freely available in the public domain.
17 This has sometimes resulted in the use of outdated sizing systems.
18 Fitting trials have been used to establish the suitability of products for the
19 user population (Pheasant, 1986). These are experimental studies in which
20 the designer systematically explores user preferences by means of adjustable
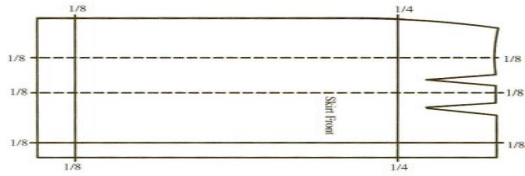21 mock-up of the product using dummies, live models or, more recently, virtual

Grade Distribution

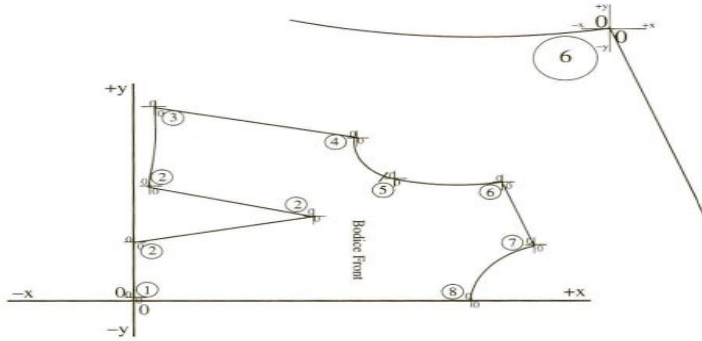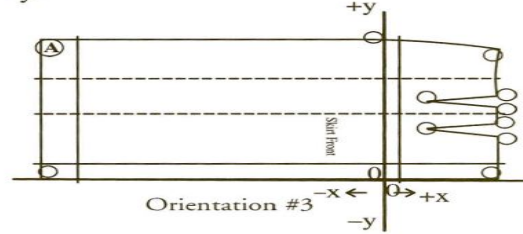☞ The total grade is distributed throughout the pattern.

1-Inch Grade   1 1/2-Inch Grade   2-Inch Grade
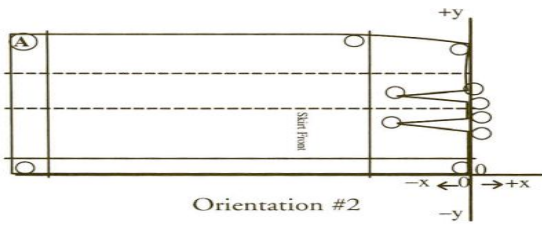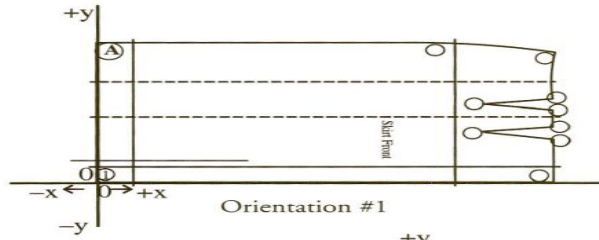
———————— Standard Grade   ---------- Variable Grade

Cardinal points/ Grade rules

☐ The dimensional changes are made on the perimeter of the pattern pieces at cardinal points that include the intersection of same and in some cases, curved

☐ Cardinal points areas of the pattern.

☐ a grade rule specifies the amount of increase or decrease at each cardinal point for each size in the size range relate to the sample size.

Distributions for a 1 1/2-inch Grade

Orientation #1

Orientation #2

Orientation #3

Self-Check -3	Written Test

Short Answer Questions

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List Cardinal points/ Grade rules?
2. What dose mean Grading size?

Note: **Satisfactory rating - 3 points**   **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Information Sheet-4	• **CONTENT4-** Calculating number of sizes in grading

4.1 Calculating number of sizes in grading

4.1.1 Calculate Number of sizes in grading

The "grade rules" refer to the amount of change between sizes, for each measurement point. For example, the bust, waist and hip "grade" 1" between sizes for most of the Misses size range.

If you started with size 8 dresses and needed to make another one in a size 10, you'd make the bust, waist and hip 1" larger. You'd do this primarily by making the adjustment at the side seam, and **distribute the 1" size difference evenly at each seam.**

Since your dress has a front and back, you'd adjust 1/2" each in the front and back. And since the front and back each have a left and right side, you'd divide that 1/2" in half again - so you'd adjust each seam (each side of the front and each side of the back) by 1/4" - the total will be a 1" difference between the sizes. Generally, you do NOT make adjustments at the center front or center back.

The shoulder, armhole, and neck would be made a bit larger also (see the sketch below to get an idea of the difference between a size and a size 10 bodice).

Bust Line

Grading a pattern -
The red dashed line represents
the larger size. The pattern is
lengthened 1/4" at the waist,
widened 1/4" at the side, and the
armhole and neckline are
scooped out to make them
a bit larger.

Clothing Patterns 101.com

Similar adjustments are made to the sleeve and skirt, as well as any other styling details (the collar would have to be adjusted to fit the neckline, for example).

The chart below shows a few of the grade rules for a Misses size range. The "+/-" means, for example, if you are starting with a size 8 and are grading to a size 10, you would ADD 1" to that area of the pattern. If you are grading down to a size 6, you would SUBTRACT 1".

You'll notice that **the grade rules change as you get into sizes 12 - 16, and again for size 18.**

Measurement Point	Grade rule between sizes Misses 4 - 18							
	4	6	8	10	12	14	16	18
Bust	+/- 1	+/- 1	+/- 1	+/- 1	+/- 1.5	+/- 1.5	+/- 1.5	+/- 2
Waist	+/- 1	+/- 1	+/- 1	+/- 1	+/- 1.5	+/- 1.5	+/- 1.5	+/- 2
Hip	+/- 1	+/- 1	+/- 1	+/- 1	+/- 1.5	+/- 1.5	+/- 1.5	+/- 2
CB waist length	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4
CB skirt length	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4
Sleeve length from shoulder	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4

CLOTHING PATTERNS 101.COM

Pattern grading is fairly complex. It's best to avoid it unless it's necessary. Even if you are making a group of garments in a variety of sizes, unless the group of people wearing them is of very similar proportions, it may be easier to fit and pattern each one separately.

The following activities should be done when you are ready to document your pattern for production purpose:

- Spreadsheet of full range for selected sizing system is prepared with essential measurements.

- Grade table for full size range is prepared.

No.	Description	Tol. +/_	S	M	L	XL	2XL	3XL	4XL
1	Waist girth	1.0	68	71	74	77	80	83	86
2	Seat girth	1.5	93	96	99	102	105	108	111
3	Side seam L	1.5	96	96	100	100	104	104	104
4	Inside leg L	1.0	70	70	73	73	76	76	76
5	Front rise	0.5	28	28	29	29	30	30	30
6	Back rise	0.5	36	36	37	37	38	38	38
7	Knee girth	0.5	43	43	43	47	47	47	47
8	Bottom girth	0.5	38	38	38	42	42	42	42

- Pattern specification sheets with trade drawings are completed and attached to patterns for storage. Work order for sizing labels is prepared as required.
  - ➢ From the table designer work one size then grading different size pattern producing.

May include:

- skirt
- blouses
- shirt
- pants/trousers
- lingerie
  Jackets, coats, suits

Grading Methods

- Patterns may be graded by **physically moving the pattern** to increase and decrease it through a process of **manual grading.**.

- The pattern could be processed for **computer grading.**

- Computer grading is the most efficient and accurate of the three methods, when accurate information is entered into the computer.

- A prerequisite for any method is a **thorough understanding of grading concepts.**

Grading On Cartesian Graph

- The **general procedure** for grading patterns using the Cartesian graph is to first determine the **pattern orientation.**

- **This establishes the zero, zero (0,0) point of reference,** which is imperative because the *x,y coordinates of a grade rule are based on* the pattern orientation.

- The next step is to **label the cardinal points** of the pattern and then **develop the grade rules** for those points.

- Grading a pattern on the computer utilizes the same initial procedure.

Self-Check -4	**Written Test**

Short Answer Questions

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Pattern grading is very necessary for mass production?
2. In deference parts it has deference grading point?
3. Grading required time?

Note: **Satisfactory rating - 3 points**   **Unsatisfactory - below 3 points**
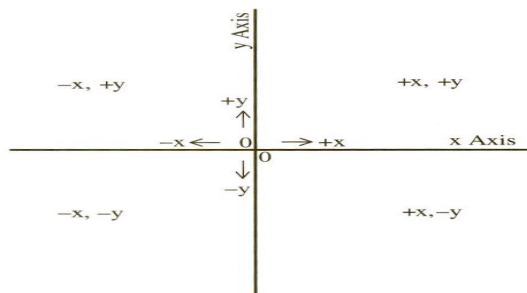
Answer Sheet

Score = _____

Rating: _____

5.1 Establishing grade increments between sizes

- Patterns may be graded by **physically moving the pattern** to increase and decrease it through a process of **manual grading.**.

- The pattern could be processed for **computer grading.**

- Computer grading is the most efficient and accurate of the three methods, when accurate information is entered into the computer.

- A prerequisite for any method is a **thorough understanding of grading concepts.**

Grading On Cartesian Graph

- The **general procedure** for grading patterns using the Cartesian graph is to first determine the **pattern orientation.**

- **This establishes the zero, zero (0,0) point of reference,** which is imperative because the *x,y coordinates of a grade rule are based on* the pattern orientation.

- The next step is to **label the cardinal points** of the pattern and then **develop the grade rules** for those points.

- Grading a pattern on the computer utilizes the same initial procedure.

Relative Grading and Incremental Grading

- Grade rule tables may be written using either **relative** or **incremental grades for both manual and computer** grading.

- In the relative grading method, grade rules reflect the changes in the pattern dimensions from the **master size** to each of the **graded sizes;** that is, all changes are **"relative" to the master size.**

- In the incremental grading method, the grade rules reflect the **change from the adjacent size**; that is, they give the increments of change for only one size

- **Grading Size 12 Up to Size 14**

- The skirt front and back are oriented so that the waistline area of the skirt can follow the same grade rules as the bodice area even Though the skirt lies in the - $x,+y$ quadrant of the Cartesian graph. As the size is increased, the grade rules will be - x, $+y$; whereas, grade rules for decreased sizes will be $+x$, - y. Using this pattern orientation, in which the center front and waistline intersection does not move, allows existing grade rules to be used for a dress or jacket that combines a bodice and skirt pattern.

- All of the grade rules for a skirt front are explained. It should be noted that some of the grade rules developed for the bodice front are used and the previously assigned grade rule numbers will be used.

1. Objective

The main objective of this lab practices are;

- Practice grading the front & back skirt pattern in the various ranges of 1", *1-1/2"* and 2" grades.
- To understand where the body requires these changes.
- To understand where the pattern piece is to be changed.

Self-Check -5	Written Test

Short Answer Questions

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. **Write the Grading On Cartesian Graph**?
2. **What is deference b/n relative Grading and Incremental Grading?**
3. List **function of Grading?**

Note: **Satisfactory rating - 3 points**   **Unsatisfactory - below 3 points**

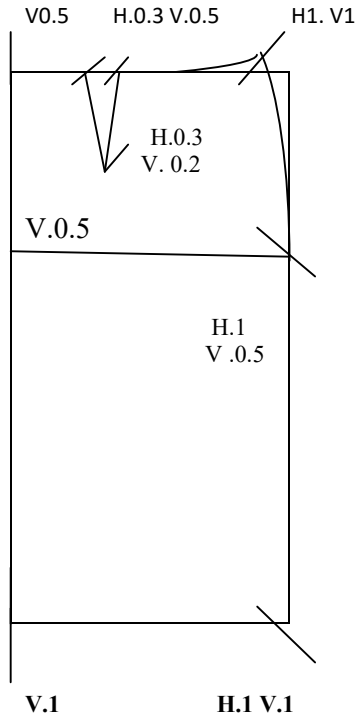**Answer Sheet**

Score = _____
Rating: _____

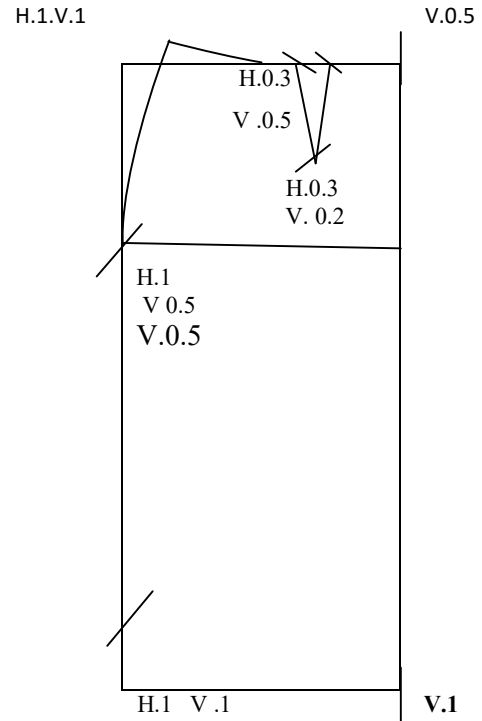| Operation Sheet 1	Interpret technical grading

PURPOSE: - Identify Interpret technical grading.

EQUIPMENT, TOOLS AND MATERIALS: Drawing instruments such as T-square, Meter stick, Set square, Tape measure, French curve Pencil/ Fixer with eraser, compass, A_0 soft/ hard pattern paper tracing paper, Scotch tape.
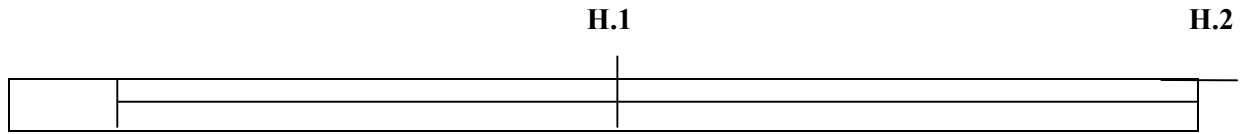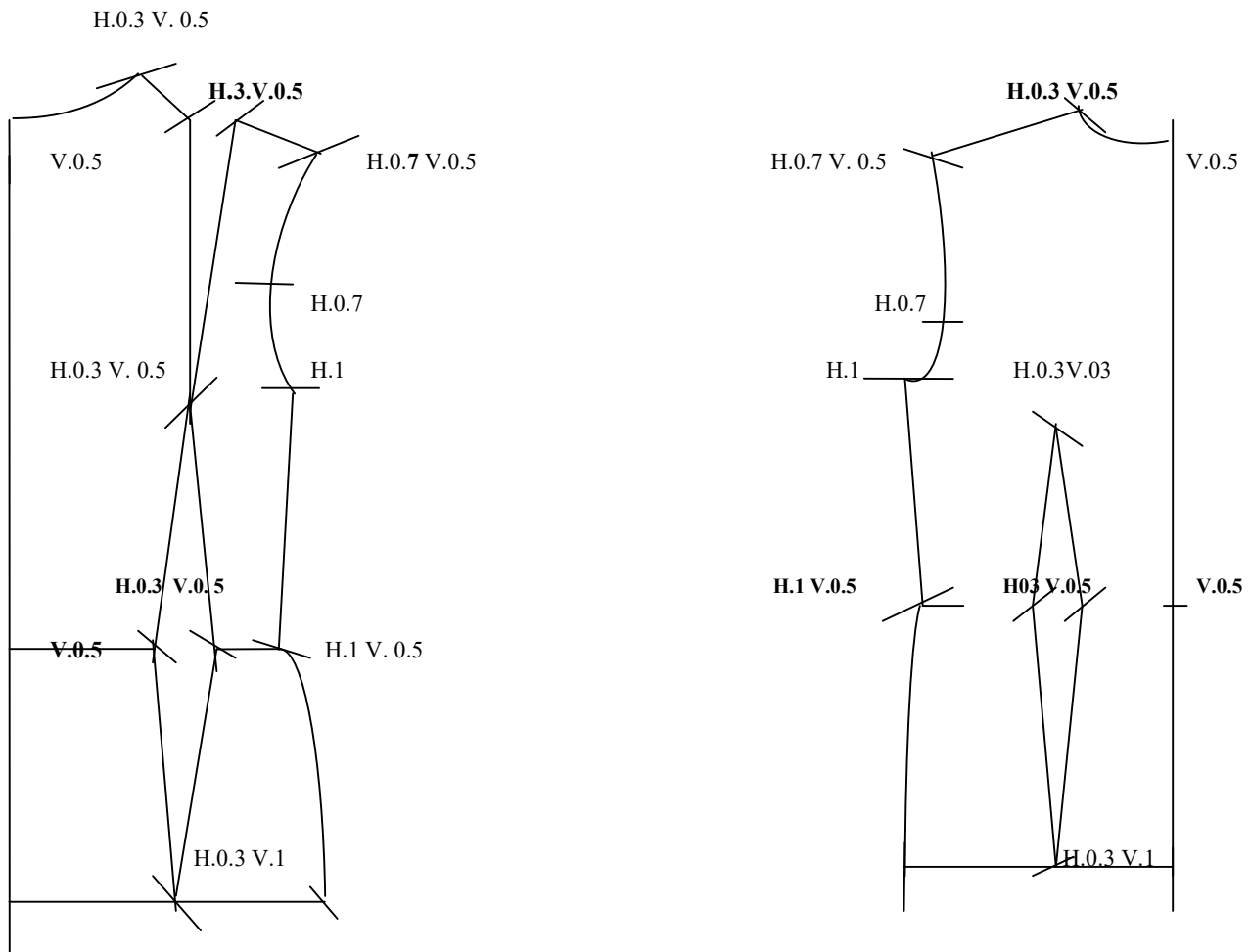
Skirt grading

BACK PANEL   FRONT PANEL

Waist band

H.1   H.2
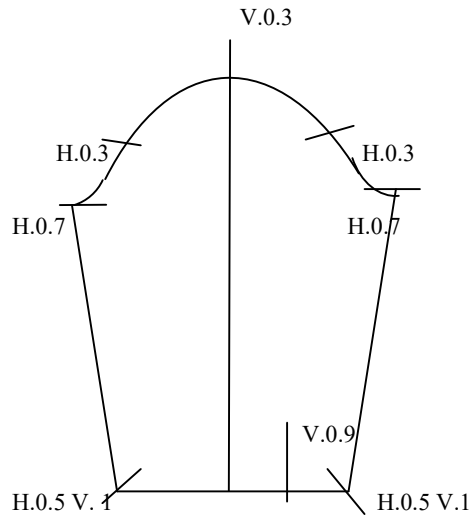
☞ **NOTE :** H, HORIZONTAL

   V. VERTICAL

Blouse or shirt grading

H.0.3 V. 0.5

H.3.V.0.5   **H.0.3 V.0.5**

V.0.5   H.0.7 V.0.5   H.0.7 V. 0.5   V.0.5

                          H.0.7   H.0.7

H.0.3 V. 0.5   H.1   H.1   H.0.3V.03

H.0.3 V.0.5   **H.1 V.0.5**   **H03 V.0.5**   **V.0.5**

V.0.5   H.1 V. 0.5

                H.0.3 V.1   H.0.3 V.1

Sleeve graging

Collar Grading

V.0.3

H.0.3

H.0.3

H.0.7

H.0.7

H.0.6

H.0.6

CUFF

V.0.9

H.1

H.1

H.0.5 V. 1

H.0.5 V.1
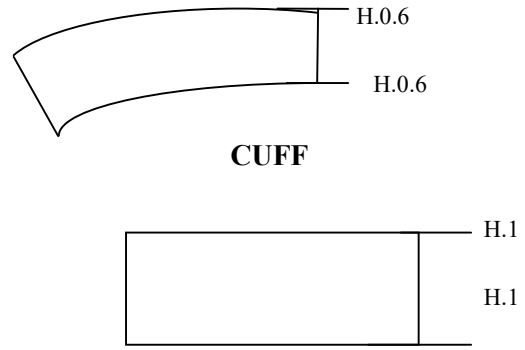
LAP Test 1	Practical Demonstration

Name: _____   Date: _____

Time started: _____   Time finished: _____

Instruction:

1, draw basic skirt and blouse pattern grade size S, M and L?

Intermediate Apparel Production

LEVEL-2

NTQF Level -II

Learning Guide #28

Unit of Competence: Grade Pattern

Module Title: Grading Pattern

LG Code: IND IAP2MO8LO2 LG28

TTLM Code: IND IAP2 MO8TTLM0919v1

LO 2:   Set up base pattern

Instruction Sheet	Learning Guide #-28

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

- Identifying base pattern of a basic style and pattern pieces
- Establishing constant or '0' position
- Assigning grade points with corresponding values
- Checking base size pattern for correct information, balance points and pattern fit and clarification sought
- Identifying style and fabric characteristics which influence grading
- Clarifying any queries with patternmaker
- Selecting appropriate grade plan and constructing grade rule table

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, **you will be able to –**

- Base pattern of a basic style and pattern pieces are identified, constant or '0' position is established and grade points with corresponding values are assigned
- Base size pattern is checked for correct information, balance points and pattern fit and clarification sought, as required
- Style and fabric characteristics which influence grading are identified and any queries are clarified with patternmaker
- Appropriate grade plan is selected and grade rule table constructed

Learning Instructions:

10. Read the specific objectives of this Learning Guide.

11. Follow the instructions described in number 32to 67.

Read the information written in the "Information Sheets 1".2.3, 4, Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.

12. Accomplish the all "Self-check "

13. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-check 1).

14. If you earned a satisfactory evaluation proceed to "Information Sheet 2". However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #1.

15. Submit your accomplished Self-check. This will form part of your training portfolio.

Information Sheet-1	**CONTENT-1** Identifying base pattern of a basic style and pattern pieces

2.1 Identifying base pattern of a basic style and pattern pieces

Patterns are made in only **one** size this pattern is called Base pattern of a *basic style* and pattern pieces

A **pattern** is a blueprint for constructing a garment. It is an outline, a template to create shape. A pattern creates all of the components of a garment needed to form a complete unit of clothing. A patter, regardless of size or shape, includes important markings necessary to sew the pattern pieces together so that they fit precisely. These marking include: darts, seam allowances notches and punch holes for trims, pocket, button, and buttonhole placement.

Patternmaking, or flat patternmaking, is the link between design and production that turns a designers sketch into a three dimensional functional garment. The pattern is the means of interpreting the design regardless of the style, size, shape, or number of pattern pieces. It is called the flat patternmaking because it is a two dimensional process. When the pieces are sewn together, draped on the form, and adjusted for fit, the pattern is then translated to a three dimensional form.

Patternmaking is a highly developed technical skill, requiring precision in the drafting and development process. It also necessitates an understanding of body proportions and their measurements.

In a layman language we can define the pattern making as *"To convert the two dimensional fabric into three dimensional body or garment we used to provide of introduce fullness into the fabric by changing the direction of the fabric and dimension of the fabric at some specific area in order to get the proper fit to the body."*

Pattern making is the process of changing body measurements in to a paper pattern in such a way it shall fit the 3D shape of a human body in its   final assembly. In pattern making process the following points have to be carefully considered: Quality of Paper used for making patterns, Completeness of Patterns & Pattern Information, Proper arrangement of pattern pieces with respect to grain line and Best possible fabric utilization

Grading and shrinkage incorporation in a pattern is very important and plays a big role in not only getting correct fit and drape of a garment but also measurements as graded specs. Pattern grading is a technique of scaling a pattern to reproduce a pattern in other sizes.

It must be done accurately. To properly fit a pattern to a range of sizes, each pattern piece needed to be graded, or systematically increased or decreased.

- ✓ Skirt
- ✓ Blouses
- ✓ Shirt
- ✓ Pants/trousers
- ✓ Lingerie
- ✓ Jackets, coats, suits

After the approved pattern is completed, it is placed on fabric from which the first sample garments are cut and sewn. The sample garments are tried on dress forms and live models and then corrected for fit balance, style, and shape. Next, corrections are made to the paper pattern. The process of adjustment, fit, and correction is repeated as necessary to develop the perfect patter.

Flat Pattern making

Patterns for most garments are developed by working with basic slopes in a two-dimensional manner called flat patternmaking. When the principles of this method are understood, the results include increased accuracy and faster development of new styles.

Self-Check -1	Written Test

Short Answer Questions

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

4   Writes the definitions of pattern?

5   List types basic pattern?

6   Write about pattern?

Note: **Satisfactory rating - 3 points**   **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____
Rating: _____

2.1 Establishing constant or '0' position

Stacking or "0" point for grading

For grading it is important to have stack point which will define the "x" or "y" grading of pattern. It is defined as "0" point located at the centre of the pattern of a Front, back or sleeve panel. For centre front it is perpendicular to the centre of check line. For sleeve the "0" point is centre of sleeve at the bicep line.
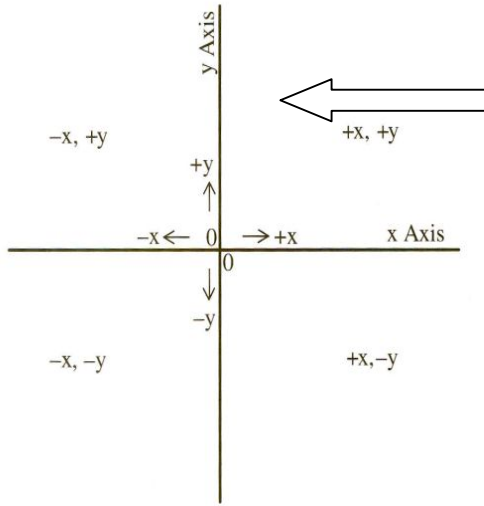
4 selecting appropriate grade plan and grade rule table

➢ Pattern grading is technique used to reproduce a pattern in other sizes.
➢ used to increase or decrease pattern
➢ An accurate method is to draft the smallest size, grade the largest sizes.
➢ The method used of finding appoint by measuring horizontally then vertically is shown opposite from base point 1 measure horizontally required measurement ,mark point 2, square across ,measure vertically required measurement point 3, draw a line through the point 1&3 for grade line, points for further grading can be made along this line .
Always grade in the group ex   8-14   , 16-22,   and 24-30

3

Vertically

Grade line

-x, +y
+y
-x, +y

-x ← 0 → +x   x Axis
0

-y

-x, -y   +x, -y

+x, +y

Self check 2	Written Test

Short Answer Questions

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

4 Why pattern grading is required?
5 What is origin mean in Grading?
6 *Zero (0) indicate in* Grading?

Note: **Satisfactory rating - 3 points**   **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Information Sheet-3	CONTENT3- Assigning grade points with corresponding values

1.3 Assigning grade points with corresponding values.

Patterns initially are made in only **one** size. In order to produce clothing that fits various body types and sizes, the pattern pieces must be increased or decreased geometrically to create a complete range of sizes. The process of resizing the initial pattern is called "**grading**." Each company determines its own grade specifications for each size, and size specifications vary slightly from manufacturer to manufacturer.

Grading is the method used to increase or decrease the sample size production pattern to make up a complete size range. For example, the sample size 10 patterns must be made larger to accommodate sizes 12, 14 and 16 and smaller for sizes 8 and 6. Each company sets predetermined grade specifications, or rules. For example, a missy manufacturer's grade rules might call for increments of one and a half inches in width and a quarter inch in length for each size.
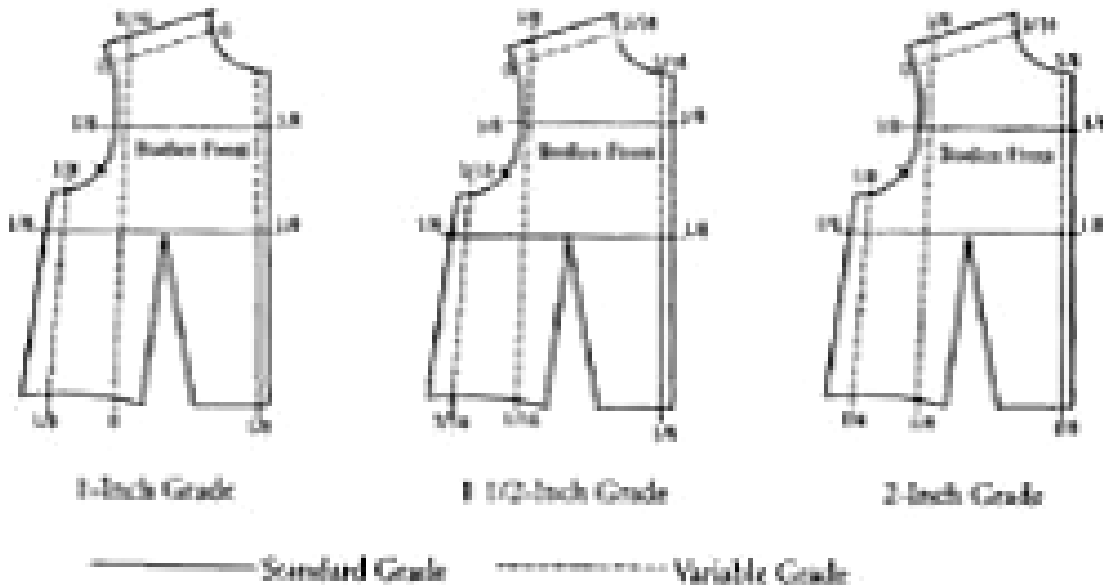
Today most manufacturers grade pattern on CAD systems. The pattern maker guides a cursor around the edges of the sample pattern on a digitized table. At each of the key points, he or she pushes a button to record a grade point. Each point is cross referenced by a grade-rule table stored in the computer, which enlarges or reduces the pattern automatically according to the predetermined direction. If the pattern was originally made by computer, data are already in the computer and can be enlarged or reduced automatically.

Pre-programmed grade rules for increase or decrease are automatically applied to the pieces of each
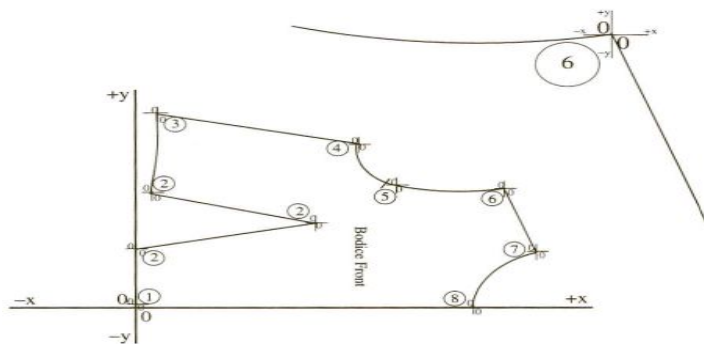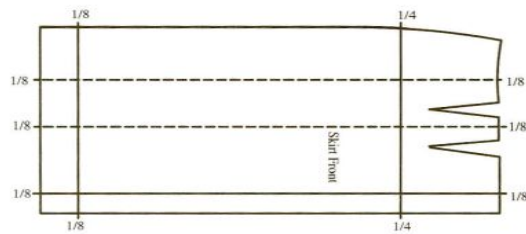
Grade Distribution

☞ The total grade is distributed throughout the pattern.

1-Inch Grade   1 1/2-Inch Grade   2-Inch Grade

————————Standard Grade   ------------Variable Grade

Cardinal points/ Grade rules

☐The dimensional changes are made on the perimeter of the pattern pieces at cardinal points that include the intersection of same and in some cases, curved

☐ Cardinal points areas of the pattern.

☐ a grade rule specifies the amount of increase or decrease at each cardinal point for each size in the size range relate to the sample size.
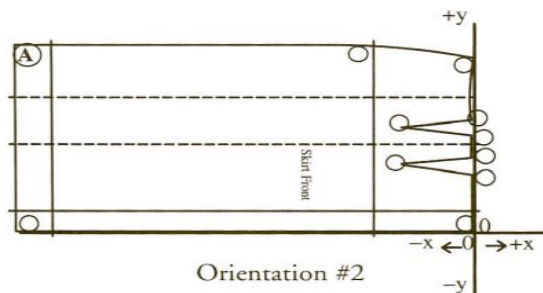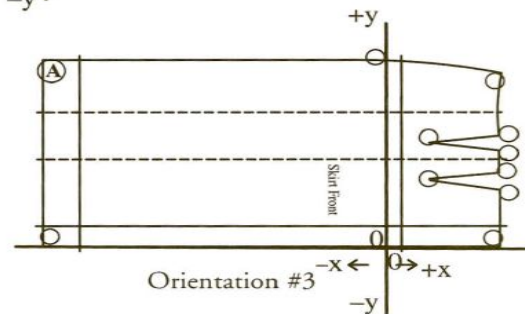
Distributions for a 1 1/2-inch Grade
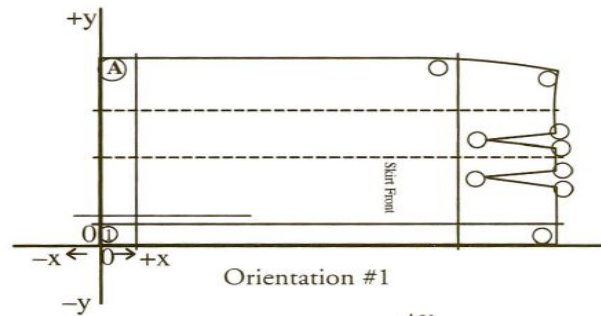
Orientation #1

Orientation #2

Orientation #3

- The **general procedure** for grading patterns using the Cartesian graph is to first determine the **pattern orientation.**

- **This establishes the zero, zero (0,0) point of reference,** which is imperative because the *x,y coordinates of a grade rule are based on* the pattern orientation.

- The next step is to **label the cardinal points** of the pattern and then **develop the grade rules** for those points.

- Grading a pattern on the computer utilizes the same initial procedure.

Self-Check -3	Written Test

Short Answer Questions

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

3. List Cardinal points/ Grade rules?
4. What doses mean grading size?
5. What is **establishes for grading rule?**

Note: **Satisfactory rating - 3 points   Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Information Sheet-4	CONTENT4- Checking base size pattern for correct information, balance points and pattern fit and clarification sought

4.1 Checking base size pattern for correct information, balance points and pattern fit and clarification sought

- Toile or garment segments are tested for proportioning and fit.

  (A *toile* is a model of a garment made out of calico or other cheap fabric.) It is always wise to make a simple prototype model of a garment or any other textile product out of cheap fabric. This allows you to identify property details and measurements before you make your final fabric choice for the product. Prototypes can also be produced to test specific parts of a product, for example, an adjustable strap.

- Fitting is performed to ensure that prototype meets with customer satisfaction.

- Any pattern alterations are completed and assessed to meet fit and design requirements.

- Pattern is finalized and checked to ensure accuracy, completeness and compliance to design specifications.

- Final patterns are directed to next production process.

  Checking base size pattern for correct information

  - ➢ balance points
  - ➢ pattern fit
  - ➢ clarification sought
  - ➢ The purpose of grading is to proportionally increase or decrease the size of a pattern, while maintaining shape, fit, **balance** and scale of style details. It's important to remember that grading only makes a shape larger or smaller and isn't intended to change a shape.
  - ➢ Grading also reflects the fact that individuals of different sized are proportionately different, not uniformly different.

- ➢ Stacking or "0" point for grading
- ➢ For grading it is important to have stack point which will define the "x" or "y" grading of pattern. It is defined as "0" point located at the centre of the pattern of a Front, back or sleeve panel. For centre front it is perpendicular to the centre of check line. For sleeve the "0" point is centre of sleeve at the bicep line.

Self-Check -4	Written Test

Short Answer Questions

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

4   What is pattern information, mean?
5   Pattern quality is very necessary for grading?
6   Grading required finding lot size?

Note: **Satisfactory rating - 3 points   Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

5 Identifying style and fabric characteristics which influence grading

5.1.1 Identifying Base pattern of a *basic style* and pattern pieces

Patterns are made in only **one** size this pattern is called Base pattern of a *basic style* and pattern

pieces

Grading and shrinkage incorporation in a pattern is very important and plays a big role in not only getting correct fit and drape of a garment but also measurements as graded specs. Pattern grading is a technique of scaling a pattern to reproduce a pattern in other sizes.

It must be done accurately. To properly fit a pattern to a range of sizes, each pattern piece needed to be graded, or systematically increased or decreased.

2.2.   Checking base size pattern for correct information

  ➢ balance points
  ➢ pattern fit
  ➢ clarification sought

The purpose of grading is to proportionally increase or decrease the size of a pattern, while maintaining shape, fit, **balance** and scale of style details. It's important to remember that grading only makes a shape larger or smaller and isn't intended to change a shape. Grading also reflects the fact that individuals of different sized are proportionately different, not uniformly different.

Vertically is shown opposite from base point 1 measure horizontally required measurement, mark point 2, square across, measure vertically required measurement point 3, draw a line through the point 1&3 for grade line, points for further grading can be made along this line

Self-Check -5	Written Test

Short Answer Questions

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

4   Fabric characteristic is affect on grading if yes write why?

5   What is fabric mean?

6   List function of fabric?

Note: **Satisfactory rating - 3 points**   **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Information Sheet-6	CONTENT5- 6 Selecting appropriate grade plan and constructing grade rule table

6 Selecting appropriate grade plan   and constructing grade rule table

➢ Pattern grading is technique used to reproduce a pattern in other sizes.
➢ used to increase or decrease pattern
➢ An accurate method is to draft the smallest size, grade the largest sizes.
➢ The method used of finding appoint by measuring horizontally then vertically is shown opposite from base point 1 measure horizontally required measurement ,mark point 2, square across ,measure vertically required measurement point 3, draw a line through the point 1&3 for grade line, points for further grading can be made along this line .
   Always grade in the group ex   8-14   , 16-22,   and 24-30

Similar adjustments are made to the sleeve and skirt, as well as any other styling details (the collar would have to be adjusted to fit the neckline, for example).

The chart below shows a few of the grade rules for a Misses size range. The "+/-" means, for example, if you are starting with a size 8 and are grading to a size 10, you would ADD 1" to that area of the pattern. If you are grading down to a size 6, you would SUBTRACT 1".

You'll notice that **the grade rules change as you get into sizes 12 - 16, and again for size 18.**

Measurement Point	Grade rule between sizes Misses 4 - 18							
	4	6	8	10	12	14	16	18
Bust	+/- 1	+/- 1	+/- 1	+/- 1	+/- 1.5	+/- 1.5	+/- 1.5	+/- 2
Waist	+/- 1	+/- 1	+/- 1	+/- 1	+/- 1.5	+/- 1.5	+/- 1.5	+/- 2
Hip	+/- 1	+/- 1	+/- 1	+/- 1	+/- 1.5	+/- 1.5	+/- 1.5	+/- 2
CB waist length	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4
CB skirt length	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4
Sleeve length from shoulder	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4	+/- 1/4

CLOTHING PATTERNS 101.COM

Pattern grading is fairly complex. It's best to avoid it unless it's necessary. Even if you are making a group of garments in a variety of sizes, unless the group of people wearing them is of very similar proportions, it may be easier to fit and pattern each one separately.

The following activities should be done when you are ready to document your pattern for production

   purpose:

- Spreadsheet of full range for selected sizing system is prepared with essential measurements.
- Grade table for full size range is prepared.

No.	Description	Tol. +/_	S	M	L	XL	2XL	3XL	4XL
1	Waist girth	1.0	68	71	74	77	80	83	86
2	Seat girth	1.5	93	96	99	102	105	108	111
3	Side seam L	1.5	96	96	100	100	104	104	104
4	Inside leg L	1.0	70	70	73	73	76	76	76
5	Front rise	0.5	28	28	29	29	30	30	30
6	Back rise	0.5	36	36	37	37	38	38	38
7	Knee girth	0.5	43	43	43	47	47	47	47
8	Bottom girth	0.5	38	38	38	42	42	42	42

- Pattern specification sheets with trade drawings are completed and attached to patterns for storage. Work order for sizing labels is prepared as required.
- From the table designer work one size then grading different size pattern producing.
- As stated before, the skirt front and back are graded similarly. The skirt back darts are longer than the skirt front darts and, therefore, need to include a length grade of 1/8 inch. Note the differences between the location of the dart end points on the skirt front and back. The darts in the skirt back extend farther down than the darts in the front, and the dart legs need to be extended accordingly. The lengthwise grade distribution crosses the ends of the back darts. Changing the length of a dart without changing the distance between the dart legs theoretically changes the fullness of the dart; this fullness is accounted for in the overall grade of the waist and the hip. The change in dart length keeps the dart in the correct location for the corresponding body length. Therefore, the dart endpoints require a different grade rule than the top of the dart legs at the waistline. All other grade rules developed for the skirt front may be used on the skirt back.

Self-Check -6	Written Test

Short Answer Questions

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Why grading is necessary?
2. What is grading rule?
3. List function of grading rule?

Note: **Satisfactory rating - 3 points   Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Intermediate Apparel Production

LEVEL-2

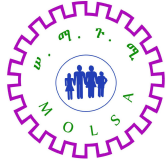## NTQF Level -II

Learning Guide #29

Unit of Competence: Grade Pattern

Module Title: Grading Pattern

LG Code: IND IAP2MO8LO3 LG29

TTLM Code: IND IAP2MO8TTLM0919v1

LO 3:   Grade pattern

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

- Determining stacking or outlay requirements, including direction
- Grading pattern manually using patternmaking technical skills or by computer
- Identifying stack points or lines
- Preserving integrity of pattern attributes during grading
- Checking pattern for accuracy and rectified
- Labeling all pattern pieces accurately with pattern marking symbols

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, **you will be able to –**

- Stacking or outlay requirements, including direction are determined

- Pattern is graded manually using patternmaking technical skills or by computer

- If stacking, stack points or lines are identified

- Integrity of *pattern attributes* is preserved during grading

- All pattern pieces are accurately labeled with *pattern marking symbols*
- Pattern is checked for accuracy and rectified or addressed as required

Learning Instructions:

16. Read the specific objectives of this Learning Guide.

17. Follow the instructions described in number 3 to 7.

18. Read the information written in the "Information Sheets 1". Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.

19. Accomplish the "Self-check 1" in page -3

20. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-check 1).

21. If you earned a satisfactory evaluation proceed to "Information Sheet 2". However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #1.

22. Submit your accomplished Self-check. This will form part of your training portfolio.

3.1 Determining stacking or outlay requirements, including direction

Grading is a method of enlarging of reducing a pattern of a particular size proportionately to some other size.

Identifying stacking, stack points or lines

The following examples demonstrate the applications of the system to standard types of block patterns. These are the basic patterns from which most outerwear garment patterns are developed and each example provides:
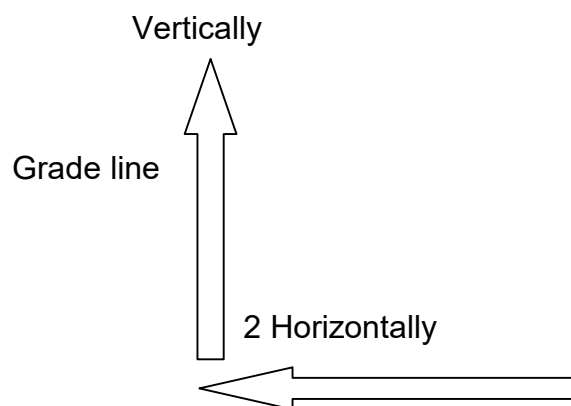
1) Where necessary, an illustrated introduction to the principles involved in grading the demonstration pattern.

2) The increments used, and their locations.

3) The net of grading increments required for one size up and one size down from the base size.

4) Instructions regarding the common and other axes required in relation to the grading position of the pattern.

5) Grading instructions accompanied by illustrations showing each successive stage. The line sectors to mark after each move denoted by a thickened line.

6) An example of the finished grade is shown together with the vectors used for checking accuracy.

7) The first five groups of examples show the applications the dynamic neck to waist grading method and in group six, the static method is demonstrated.

The first examples demonstrate the basic body and derived grades, and these grades are central to the entire system. All of the other grades for bodies, sleeves, lapels and collars are based on these examples.

Grading is the process used for creating sized patterns. There are certain proportional rules and set increments that form the basis of grading. These rules are set on the basis of analysis on body measurements of the general population. The clothing firms also help in pattern grading using the specifications provided by the apparel manufacturers and some of them also assist the manufacturers in establishing specifications for their product. The grade rules are developed keeping in view the market segment for which the product is intended such as men, women, youth, child, toddler etc. These firms mostly use the software's available in the market for checking the accuracy of the grades.

- ➢ All p darts
- ➢ notches
- ➢ shape

Vertically

Grade line

2 Horizontally

Every Person has always experienced the importance of selecting his/her size from the rack of a showroom. Sometimes it might have happen that the size of a particular brand varies with the same size of another brand. Therefore, proper sizing is the first and very important to the ready – to – wear industry as it allows each manufacturer to produce a line of dresses capable of fitting a maximum number of people.

Grading is the process of increasing or decreasing the size of a particular pattern so as to achieve the standard size of that garment.

There are various rules of pattern grading that tells the amount of change between sizes. For example, a standard grade for misses sizes is a 1" circumference difference (at bust, waist and hips) between sizes 6, 8 and 10; a 1 ½" circumference difference between sizes 10 , 12, 14 and 16; a 2" circumference difference between sizes 16, 18, 20 and 22 . There is a ¼" length difference between each two sizes.

The science behind grading discovered some 150 years back where it started with splash and spread techniques but today with great technical advances, some software (Leuctra, Tuk atech, etc.) can do this calculative process within seconds. But it is always considered to understand the roots, so, here I will discuss the techniques briefly

Every time you went shopping for your clothes its the size that became the first thought. Thanks to Garment Technologists for creating a vast range of size and thanks to the science behind it "Grading".

Self-Check -1	Written Test

Short Answer Questions

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

7 Identifying stacking, stack points or lines?

8   Write grading basic pattern?

9 Write about Grading Pattern is manually using patternmaking technical skills?

Note: **Satisfactory rating - 3 points**   **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

9.2 Grading pattern manually using patternmaking technical skills or by computer

➢ Pattern grading is technique used to reproduce a pattern in other sizes.

➢ used to increase or decrease pattern

➢ An accurate method is to draft the smallest size, grade the largest sizes.

➢ The method used of finding appoint by measuring horizontally then vertically is shown opposite from base point 1 measure horizontally required measurement ,mark point 2, square across ,measure vertically required measurement point 3, draw a line through the point 1&3 for grade line, points for further grading can be made along this line .

➢ **Method 2: Computerized Grading**

These days Grading is prominently done on computers using various software like Lectra, Tukacad and many others, they are relatively much faster than manual grading and the chances of error are minimum.

Talking about Leuctra their software package known as Modaris is used for Pattern making and for Grading; it is a very handy tool where all the measurement can be easily made digitally on a computer. In order to use Modaris for Grading one needs to learn the basic know how to operate the software which can be commanded after certain practices.

There are many advantage of digital grading, the **First** and the foremost is that there is it reduces the time taken considerably, **Secondly** it does not requires many instruments like pattern master, sketching material, sheets and other material used in manual

pattern making, **Thirdly** chances of errors is very minimal as compared to manual grading which relies completely on human intelligence and accuracy, **Fourthly** in the long run this proves to be more economical.
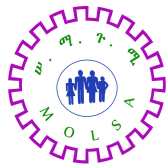
In Modaris F6, tab has options to grade a particular pattern. Dimensions are needed and a base design is to be inserted, automatically the graded pattern to the required sizes can be produced which can be digitally plotted by a digital printer.

- Patterns may be graded by **physically moving the pattern** to increase and decrease it through a process of **manual grading.**.

- The pattern could be processed for **computer grading.**

- Computer grading is the most efficient and accurate of the three methods, when accurate information is entered into the computer.

A prerequisite for any method is a **thorough understanding of grading concepts**

Screen Shot of Leuctra "Modaris" - Grading in Progress
So, Grading became an important part of garments industry to flourish, the method may vary from industry to industry. The size of the organization, quantity of order and the complexity of garments are the deciding factor of adopting the method of pattern grading

Self check 2	Written Test

Short Answer Questions

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

7. Write about Grading Pattern is manually using patternmaking technical skills?
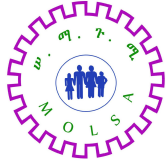
8. What is Computerized Grading?

9. Modaris F6?

Note: **Satisfactory rating - 3 points**   **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____
Rating: _____

Information Sheet-3	CONTENT3- Identifying stack points or lines

3.1 Identifying stack points or lines

- The **general procedure** for grading patterns using the Cartesian graph is to first determine the **pattern orientation.**

- **This establishes the zero, zero (0,0) point of reference,** which is imperative because the *x,y coordinates of a grade rule are based on* the pattern orientation.

- The next step is to **label the cardinal points** of the pattern and then **develop the grade rules** for those points.

- Grading a pattern on the computer utilizes the same initial procedure.

Complete pattern information may include

- Style/ Item ,he name of each pattern piece, The number of pieces to be cut ,Style no., Size ,On fold ,Grain line Notch ,Drill mark/punch hole ,CB or CF ,Seam allowance ,Construction lines

1. Analysis of patternmaking process

Master pattern-making terminology

The following are terminologies used in pattern making:

- **Grain**: the direction in which the yarn is woven or knit (lengthwise grain or warp, crosswise grain or weft)
- **Selvedge:** the narrow, firmly woven, and finished strip on both lengthwise grain edges of the woven fabrics.
- **Muslin**: a plain woven grey fabric made from bleached or unbleached corded yarns in variety of weights.
- **Bowing:** condition of fabric that is off grain due to yarns not at true right angle with each other.

- **True bias**: - The angle line that intersects with the lengthwise and crosswise grains at a 45° angle. True bias has maximum give and stretch, easily conforming to the figure's contours. Flares, cowls, and drapes work best when cut on true bias.

- **Pattern Grading:** proportionally increasing or decreasing the size or shape of an original pattern within a give size range.
- **Land Marks:** designated points around the body that corresponds with those of the form.
- **Dart:** a wedge shape cut out in a pattern used as a means of controlling the fit of the garment. It has legs, intakes and points.
- **Ease:** the even distribution of fullness without forming gathers.
- **Template:** patterns one fourth or one half the regular pattern.
- **Horizontal balance line**: A straight line parallel with the floor.
- **Block Pattern:** it is the foundation pattern that reflects the size, shape and posture.
- **Style Number:** it is an identification number used to code the pattern set.
- **Notches:** It is illustrated as a straight line with a cross mark at the end. It is mainly used for identification of front and back, identification of joining parts, ease and gather control, centre line and seam allowance.
- **Seam allowance:** It is an extra part added on the final pattern for proper stitch of the joining parts with sufficient allowance and proper joining of parts.

A complete pattern has to consisted the information like: Grain Line, Part Name, Style Number, Pattern Size, Number of Pieces, Cut Symbol, Notches, Punches

Self-Check -3	Written Test

Short Answer Questions

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

6 List Cardinal points/ Grade rules?

7 What does mean grading size?

8   What is **establishes for grading rule?**

Note: **Satisfactory rating - 3 points**   **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

4. Preserving integrity of pattern attributes during grading

Every time you went shopping for your clothes its the size that became the first thought. Thanks to Garment Technologists for creating a vast range of size and thanks to the science behind it "Grading".

Every Person has always experienced the importance of selecting his/her size from the rack of a showroom. Sometimes it might have happen that the size of a particular brand varies with the same size of another brand. Therefore, proper sizing is the first and very important to the ready – to – wear industry as it allows each manufacturer to produce a line of dresses capable of fitting a maximum number of people.

Grading is the process of increasing or decreasing the size of a particular pattern so as to achieve the standard size of that garment.
 There are various rules of pattern grading that tells the amount of change between sizes. For example, a standard grade for misses sizes is a 1" circumference difference (at bust, waist and hips) between sizes 6, 8 and 10; a 1 ½" circumference difference between sizes 10 , 12, 14 and 16; a 2" circumference difference between sizes 16, 18, 20 and 22 . There is a ¼" length difference between each two sizes.

The science behind grading discovered some 150 years back where it started with splash and spread techniques but today with great technical advances, some software (Leuctra, Tukatech, etc.) can do this calculative process within seconds. But it is always considered to understand the roots, so, here I will discuss the techniques briefly

- **Method 1: Splash and Spread Technique**

Also known as "cut and spread" technique, it starts by tracing the original pattern on a white paper. Be sure to transfer all the marking like grain line, darts over it and label them.

 A small math is involved here let's take an **example.**

Suppose the original sample fits the 32" bust but now we need a new pattern two size larger to fit 36" bust, so there is a 4 inch of difference in the new pattern. Since the pattern is made for half the body so the difference for half of the pattern is 2" only(consist of both front and back), if we look up for front or back only, the grade for each piece i.e. front or back is 1".

Now divide the pattern into 3 parts slashing vertically in the ratio 1:2:1. Here 1" can be split up into 1/4" -1/2" -1/4". Be careful about the measurements, a slight deviation can ruin your dream for getting a good graded pattern.
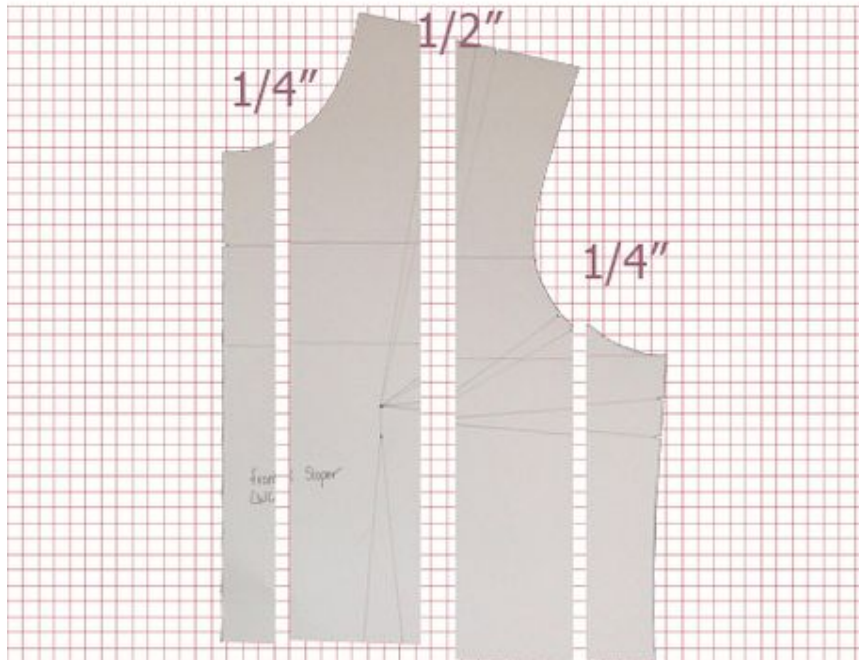**Here is the pictorial step by step explanation.**
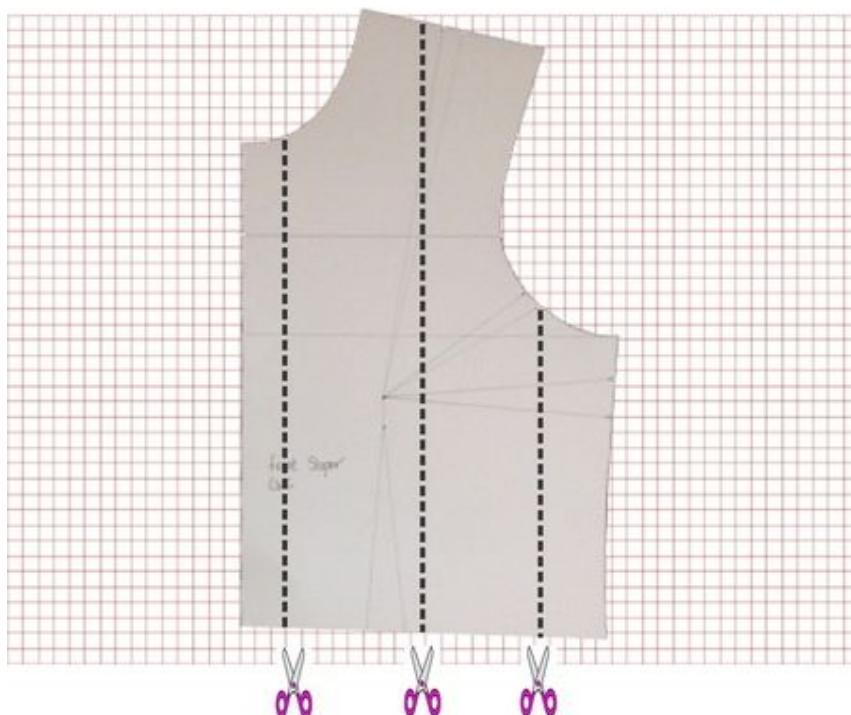
Basic Bodice pattern (Splash it into 3 parts.)

Pattern is cut vertically with a spacing of (1/4" -1/2" -1/4") Retracing is done on the graph paper

So, this way we can upgrade the pattern from one size to its next size.

Similar is the process to downgrade. Determine the size difference between the patterns to be made. Now instead of spreading they would be overlapped again in the same ratio 1:2:1

- **Method 2: Pattern Shifting**

This is one of the most widely used method, in this the pattern is shifted across horizontal line of control (X-axis) and Vertical Line of control (Y-axis), the main motto behind remain the same as to increase the major dimensions by an inch but the process is followed very systematically on a graph paper paper (an inch graph paper is more suitable).

The original pattern is placed over a grided (1") sheet. Now place Centre front of the pattern on the length guideline and the cross control line of the pattern on the cross guideline of Grided Sheet.

In this way we follow certain steps and increase the dimensions from the

required position. The motto is again the same to increase the overall dimensions but in a systematic manner without cutting the pattern

Basic bodice block
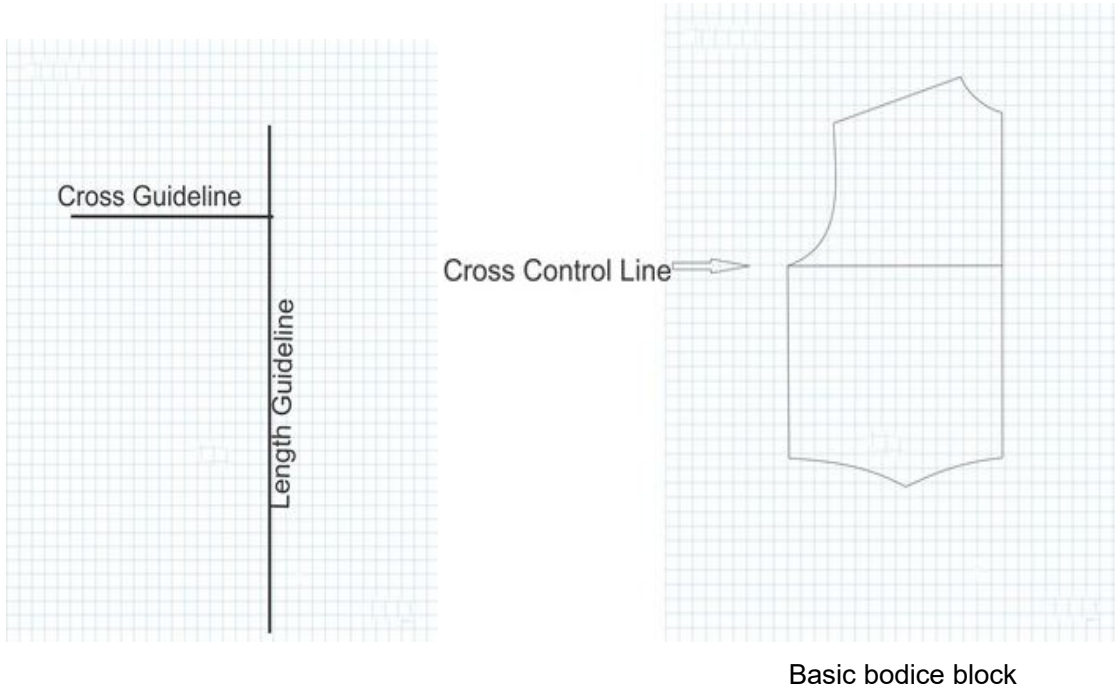
Guidelines to Grade pattern on a graph paper

- Darts
- Notches
- Shape
- Design proportion

Self-Check -4	Written Test

Short Answer Questions

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

7   What is **Splash and Spread Technique**?

8   **Pattern Shifting** necessary for grading?

9   Grading required finding lot size?

Note: **Satisfactory rating - 3 points**   **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____
Rating: _____

5 Checking pattern for accuracy and rectified

1) The necessary pattern information, of text form, written on each pattern pieces are:

- Style ,Style number ,Size ,Part name ,Cut number ,Part number ,Pattern maker ,Version number .Date
- Words/ abbreviations like: CF/CB, Cut On Fold etc.

2) Safety precautions needed to follow in drafting a pattern are:

- Use of the right drawing table,
- Use of the required drawing tools/ instruments whenever necessary,
- Pins and sharp tools should be kept properly,
- Adhesives should be far from contact of eye and mouth, etc.

3) A **toile** is a model of a garment made out of calico or other cheap fabric that allows us to identify property details and measurements before we make our final fabric choice for the product.

4) Recording and documentation is used:

- To retrieve data easily
- To use them for further manipulation
- To save time and energy
- For reference purpose etc..

Pattern pieces are checked for accuracy, including:-

- o seam allowances,
- o ease allowances,
- o seam match,
- o hems and functional openings

See Annex 1: A pattern with complete pattern markings

Annex 2: A pattern with complete pattern markings and information

Self-Check -5	Written Test

Short Answer Questions

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

7   Fabric characteristic is affect on grading if yes write why?

8   What is fabric mean?

9   List function of fabric?

Note: **Satisfactory rating - 3 points**   **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

6.1 Labeling all pattern pieces accurately with pattern marking symbols

- Grain lines
- Darts/gathers, tucks, pleats etc.
- Slits
- Job seams
- Seam allowance
- Written information and instructions

Garment production faults relating to pattern or pattern information and specifications

The following are faults related to pattern/ pattern information and specifications.

- Finished garment NOT to size- using wrong pattern

- Missed parts ,Wastage of fabric

- Mismatched pattern pieces e.g. side seam of the front panel NOT fit with side seam of the back panel

- Wrong marking e.g. drills/ pin hole is wrongly placed on the pattern

- Wrong grain line placed on the pattern.

- Pins should be placed on pin cushion,

- Tracing wheels should be placed in the right cabinet,

- Cutting equipments like paper scissor, hand shear, notcher and drill pins should be properly handled.

For example: If you change the design of the prepared pattern, you should change the pattern as per the new design, communicate and document it properly as early as possible.

Self-Check -6	Written Test

Short Answer Questions

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

4   Why OHS practice necessary?

5   What is Production documentation?

Note: **Satisfactory rating - 3 points**   **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____