INTRODUCTION

Technology and Livelihood Education (TLE) is one of the nomenclature in the implementation of the K to 12 Basic Education Program (BEP) which is composed of four components; namely, Agri-Fishery Arts, Home Economics, Industrial Arts and Information and Communication Technology. In this module, the focus is on Home Economics mini-course - DRESSMAKING.

In this course, you are provided with basic principles and theories in sewing that includes the proper use of tools and equipment. This will also be a venue for you to assess yourself and identify aspects of business that you need to be familiar before you take the plunge into the world of work.

The Department of Education is revitalizing its resources to lead the young minds and to prepare them to be a skillful member of the labor force. It is in honing of the skills that learners can assure to have an edge among his/her fellow job seekers.

This module is specifically designed and enriched with different activities focusing on the Process and Delivery that will assess your level in terms of skills and knowledge that you are expected to demonstrate after going through this learning materials. Thus, learning procedures are divided into different sections - What to Know, What to Process, What to Reflect and Understand, and What to Transfer. Go over with the suggested tasks and accomplish them to practice developing a sustainable program, prioritizing needs and building vision.

So, explore and experience the K to 12 TLE modules and be a step closer to being a successful dressmaker!

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OBJECTIVES

At the end of this module, you, as a learner, are expected to:

- Identify the basic concepts and principles in dressmaking;
- Familiarize oneself with sewing tools, materials and equipment in dressmaking and tailoring;
- Enumerate the elements and principles of design;
- Take body measurements correctly and accurately;
- Apply basic procedures in drafting pattern; and,
- Produce brochure featuring self-made designs.

***
PRE-ASSESSMENT

Multiple Choice.

Directions: Read and study the situation. Then, answer each question by writing the letter of your choice.

Ms. Inah Tan opens up her own Dress Shop/ Tailoring Shop. She knows that her personal entrepreneurial characteristics are insufficient to run a business that she has in mind. Your answers to the questions below will help in developing her Personal Entrepreneurial Competencies (PECs).

1. What PECs must she possess if there are customers who complain about the quality of her product?
   A. Patience
   B. Hardworking
   C. Versatile
   D. All of the above

2. Which of the following is NOT considered a characteristic of an entrepreneur?
   A. Copes with failure
   B. Dependent
   C. Persistent
   D. Seeks Opportunity

3. If she wants to ensure a profitable business operation, what characteristic will she maintain?
   A. Committed
   B. Goal - oriented
   C. Futuristic
   D. Consistently seeking opportunity
4. Ms. Camille Lim follows the advice of a friend to be flexible especially if she intends to re-open a Dress Shop/ Tailoring Shop. What PECs has been demonstrated by Ms. Lim?
   A. Self- confidence
   B. Reliable and has integrity
   C. Open to feedback
   D. Persistence

5. Mrs. Magno has a strong will and does not give up finding a solution to a business problem. What PECs has been demonstrated by Mrs. Magno?
   1. Hard -working
   2. Persistence
   3. Self-confidence
   4. Risk- taking

6. The following are examples of peoples’ basic needs, except:
   A. Clothing  B. Recreation  C. Food  D. Shelter

7. Which of the following should be considered first by a prospective entrepreneur in choosing the right location for his /her Dress Shop/ Tailoring Shop?
   A. Access of the target customers
   B. The attractiveness of the store layout
   C. The prevailing prices of goods in the area
   D. Types of merchandise

8. Jill plans to put a dress shop in her locality. Which of the following will help her determine a successful plan for setting up of her business?
   1. Checking for similar business to avoid competition
   2. Conduct a SWOT analysis
   3. Getting feedback on the quality of service
   4. Survey of consumer associations

9. Mae studies the population in her immediate community. She is doing this to ___
   A. determinewhom to sell her product or service
   B. identify who would be the “suki”
   C. predict her biggest buyer
   D. select her favorite customers

10. This is a process where an entrepreneur improves and alters products to make them more appealing to target consumers.
    A. alteration  B. innovation  C. invention  D. improvisation
11. This tool is a non-stretchable strip used in taking body measurements
   A. ruler          C. tailor’s chalk
   B. sewing gauge  D. tape measure

12. An aluminum ruler with a 90 degrees angle used to draw perpendicular lines
    and to measure parallel lines.
   A. L-square      C. tailor’s chalk
   B. ruler         D. tape measure

   A. seam ripper   C. scissors
   B. shears        D. trimmer

14. Horizontal lines make the body appear ________________.
   A. big and round  C. short and wide
   B. big and small  D. tall and skinny

15. This measurement is taken from the fullest part of the waist.
   A. bust distance C. shirt length
   B. chest         D. waist

***

How did you fare in the pre-assessment? Don’t feel bad when you discover that there are skills that need to be developed. Continue your exploration to find answers to these underdeveloped PECs.
LEARNING GOALS/ TARGETS

As you go through this module, you will be able to assess yourself with the characteristics and competencies of a successful apparel and garment designer.

You may now set your learning goals and targets so that you will be guided accordingly as you go through this module.

Provide an honest answer on each item below.

MY GOALS ARE THE REFLECTIONS OF WHAT I WANT TO BE.
MY GOALS ARE….

________________________________________________________
________________________________________________________
________________________________________________________
________________________________________________________
________________________________________________________

MY TARGETS ARE THE MEANS TOWARDS THE ACHIEVEMENT OF MY GOALS.
MY TARGETS ARE….

________________________________________________________
________________________________________________________
________________________________________________________
________________________________________________________
________________________________________________________
ACTIVITY 1. Open-ended Statement
Directions: Complete the clauses below with your perception, opinion, or prior knowledge about dressmaking/ tailoring, sewing tools, materials and equipment.

What I know about …

What I can do in relation to …

What I understand about …
Lesson 1. USE OF SEWING TOOLS AND EQUIPMENT

I. Sewing Tools and Equipment

Good tools are important in sewing. Your sewing machine and your sewing aids should be selected as carefully as possible for good performance and long-lasting satisfaction. We know that appropriate tools make work easier.

This lesson will provide you knowledge and skills in using sewing tools and equipment correctly. To make the work light and easy, you should have a complete set of sewing tools in your sewing box and a friendly sewing machine located in a sewing spot at home or at a sewing area of your room.

Classification of Sewing Tools and Materials

1. Measuring Tools – Also known as tapeline, it is made of non-stretchable strip used in taking body measurements. It measures 150 centimeters in the front side and 60 inches on the other side.

2. Sewing Gauge – This is a six-inch ruler made of aluminum or stiff cardboard with a slider used to measure small hem areas and short distances like hem folds, seam allowance, button holes, pleats, and tucks.
3. **Ruler** – This is the most common measuring device; 12 inches long used to connect two points in drawing straight lines. It may be made of clear plastic or shellacked wood.

4. **Meterstick or Yardstick** – This is a one-meter long wooden or steel stick usually marked off in centimeters and millimeters and is used to measure fabric length by yard or meter.

II. **Drafting Tools**

1. **L-Square** – This is an aluminum ruler with 90 degrees angle used to draw perpendicular lines and to measure off parallel lines. Two arms are connected perpendicularly and used to make construction lines in pattern drafting. The long arm has breakdown measurements of 1-24, 1-12, 1-6, 1-3, and 2-3 while the short arm has breakdown measurements of 1-32, 1-16, 1-8, 1-4, 1-2.
2. **Hip Curve** – It is a curve stick made of metal or wood calibrated on both side used to form the hipline and other areas of garments that need to be curved.

3. **French Curve** – It is an instrument made of flat metal or wood used to shape the neckline, armholes, and collar.

### III. Cutting Tools

1. **Shears** – These are for cutting fabric, paper and other materials.
   Types:
   a. **Cutting shears** - The blades are straight and best for cutting fabrics usually 7-12 inches long.
   b. **Pinking shears** - This pair of shears has a zigzag edge used to cut the edge of seam allowance of fabric that does not ravel. It is used also for cutting decorative materials.
   c. **Scallop shears** – This tool has scallop blades used to cut parts of garments a with series of uniform scallops.
2. **Scissors** – These are used for cutting hanging threads, excess fabrics of a seam, trimming hair, and other purposes. It may be made of plastic with metal or all metal.

3. **Buttonhole scissors** – These are used for cutting buttonholes. The blades have a square shape at the joint of scissors to control cutting the cloth off the buttonhole area.

4. **Embroidery scissors** – It is a sharp pointed scissors usually 4-5 inches long used in cutting fine delicate cloth and thread in embroidery work.
5. **Seam ripper** – This tool is intended for cutting off stitches of a seam. Care in using this instrument is required to prevent the cloth from being damaged.

![Seam ripper](image)

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### IV. Marking Tools

1. **Tailor's chalk** – It is available in a variety of colors and is used to mark the fabric. It is made of hard chalk and can be removed by brushing.

![Tailor's chalk](image)

2. **Tracing wheel** – This is an instrument with serrated edge wheel that produces dots on the fabric. The smooth one creates a straight, solid line.

![Tracing wheel](image)
3. **Dressmaker's carbon paper** – it is a specially waxed carbon paper that transfers the tracing wheel's markings to the fabric. This is available in different brands with different instructions. Follow the instructions for a particular brand.

V. **Sewing Aids**

1. **Pin** – Available in two kinds, one with colored head for easy handling and the other with a small steel pins, both used to fasten two or three materials together.

2. **Pin cushion** – It is a cushion available in different shapes and colors used to hold pins and needles to prevent them from scattering in the workplace.
3. **Hand needles** – These are available in different sizes and used for temporary stitches, hemming, and other sewing purposes.

4. **Thimble** - This is a small cup placed on the tip of the middle finger to protect it from being pricked by the needle while sewing. It is made of metal or plastic.

5. **Threader** - This is a diamond shaped wire attached to a handle and used to insert thread through the needle eye.
Activity 2. Name Game - Classify the tools and equipment in sewing according to function

Directions: In small groups, identify the sewing tools, materials, and equipment according to function and purpose.

<table>
<thead>
<tr>
<th>SEWING TOOLS</th>
<th>FUNCTIONS</th>
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<tr>
<th>CUTTING TOOLS</th>
<th>FUNCTIONS</th>
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<th>MEASURING TOOLS</th>
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Activity 3: Simulation (Think, Pair, Share)

Directions: With your classmates, form small groups. With specific case studies or assignments, act out the activities you need to perform. Be guided by the questions below for processing.

Scenario 1

You are the sewer who has drafted a pattern accurately. Show the proper way of making pattern and its guidelines.

Scenario 2

As a sewer, showcase proper procedure of cutting cloth, the guidelines and precautions needed to follow.

Guide questions:
1. What challenges did you meet? As a dressmaker or tailor, how did you decide or face the matter on hand?
2. What decisions did each character make? Describe the feelings before, during, and after each role playing.
3. What traits and competencies have you noticed?
Activity 4. Sewing Machine Operation

Directions: Practice machine stitching on paper. Trace each design below.

Figure 1

Figure 2

Figure 3
Lesson 2. **BODY MEASUREMENTS FOR MEN’S AND LADIES’ APPARELS**

1. **Shoulder** - Place the end of tape measure on shoulder tip passing the nape across the other shoulder tip.
2. **Length of shirt** - Measure from the nape down to the desired length.
3. **Bust** - Measure the fullest part of the bust /chest inserting two fingers in it.
4. **Waist** - Place the tape measure around the fullest part of the waist.
5. **Hip** - Place the tape measure in line and around the fullest part of the hips.
6. **Chest** - from the shoulder point, measure 4” downward. Put the tape measure around the chest.
7. **Bust Height** - Measure from the shoulder base neck to the bust point.
8. **Bust Distance** - Measure from one bust point to another bust point.
9. **Length of Sleeve** - Measure from shoulder tip point to the desired length,
10. **Short sleeve circumference/girth** - From the measured short sleeve length, place the tape measure around the arms with the desired circumference.
11. **Full bodice length** - Measure from the shoulder base neck to the waistline.

Points to remember in taking body measurements

1. Ask the client politely to stand straight while taking measurements, wearing a well – fitted garment. Remove extra bulk pockets like wallet, cellphone and hanky.
2. Use a soft flexible type of tape measure so it will be flat on the part to be measured. Work in pairs.
3. Tie a string on the exact waistline as a point of reference while taking measurements.
4. Start with either horizontal or vertical measurements.
5. When measuring lengths, let the tape measure hang freely for more accurate measurements.
Efficient and accurate taking of body measurements depend on how competent a tailor or dressmaker is. There are some pointers that you should observe while taking body measurements. Try to follow them while enjoying the pleasure you give.

You need to prepare the Personal Measurements Record (PMR) to register the measurements you have taken from your client. The record should be kept so that when he comes back for another project, you will just refer to it. On page 19 is a suggested format for a measurement record of your client.

**METRIC CONVERSION CHART**

Simple calculation is an easy mathematical application used to determine the accurate measurement of body parts, length and width of materials and cost needed to create apparel. The process in four fundamentals of operations (MDAS) is involved.

**Length and Width of Materials**

In measuring the length and width of materials needed such as fabric, we also need the use of metric measurement.

Metric Conversion Chart for Fabric and Sewing

<table>
<thead>
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<th>Centimeters</th>
<th>Inch</th>
<th>Centimeters</th>
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<td>16.51</td>
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<tr>
<td>6</td>
<td>15.24</td>
<td>13.5</td>
<td>35.62</td>
</tr>
<tr>
<td>5 Yards</td>
<td>4.572</td>
<td>14</td>
<td>36.93</td>
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<thead>
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<th>Meters</th>
<th>Inch</th>
<th>Centimeters</th>
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<td>12</td>
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</table>

Page 18
Activity 5 – Obtain Measurement

Personal Measurement Record
Name: ________________________________ Date: ________________
Address: ___________________________________________________________________
Tel No. ___________________________ Mobile No. _____________________________

PAJAMA
1. Length / Outside length
2. Waist
3. Hip
4. Crotch / Rise
5. Bottom

SHIRT
1. Shoulder
2. Length of shirt
3. Bust
4. Chest
5. Waist
6. Hip
7. Bust height (girl)
8. Bust distance (girl)
9. Length of sleeve (short)
10. Short sleeve circ. or girth
11. Full bodice length

Activity 6. Body Measurements: Simulation

Directions: Pair up with another student and take each other’s measurements following the horizontal and vertical procedures.

<table>
<thead>
<tr>
<th>Body Measurements Horizontal</th>
<th>Student A</th>
<th>Student B</th>
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Body Measurements Vertical

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</table>
Activity 7 Metric Conversion

Directions: Answer the questions below using the correct conversion of unit.

1. You’re planning to sew a small wallet using 1/8 of a yard of fabric.
   
   Question: How would you convert it into inches?

   Step 1. Divide 1 into 8 or 1/8 = 0.125

   Step 2. Multiply 0.125 by 36 or (0.125 * 36) = 4.5

   It means that you need 4 ½ inches for your fabric pattern.

   Note: 36 inches = 1 yard

Tips

- Reverse the calculations by multiplying inches by 2.54 to calculate centimeters and yards by 0.9144 to determine the number of meters.
Lesson 4. DRAFTING PAJAMA PANTS

Simple Pajama Pants made of soft flannel for any season is a great start for those learning to sew!
### About pajamas
Pajamas are fun to make, especially the soft flannel pajama pants. Pajamas can be made into pants, shorts, night shirts, or gowns.

### Best fabric to use
The best fabrics for pajamas are materials that "breathe", meaning, they don't make you sweat or hold moisture. Some suggestions are: lightweight cotton, soft flannel, and silk.

### Easy type pattern
The easiest pajama pattern is a simple pair of elastic waist band shorts or pants as seen in the photo. Most pajama patterns with an elastic waist band have no pockets. It has only 2 pattern pieces.

### Difficult type pattern
Pajamas with lots of pattern pieces and button holes are more difficult to make. You will not find pajama patterns with zippers because that would be uncomfortable to sleep in.

### Pattern pieces
When sewing pajamas, patterns can have anywhere from 2 pattern pieces as shown in the photo, or as many as 12 for more difficult and detailed pajamas.

### Cost and fabric usage
Pajama pants require about 1 1/2 yards of fabric. Pajama suit requires about 1 1/2 to 3 or 4 yards. For flannel fabric at P 180.00 a yard, elastic band at P 150.00, thread at P 25.00, and garter at P 5.00 per yard with left over thread and elastic for your next project. Pajama shorts can be made for even less. Don't forget to save your left over fabric for making crafts and quilts.

### Comments
Making your own pajamas has its benefits. Besides saving money, one can work with soft fabric that is easy to sew and find the color and print of your choice. One can never have enough pajamas, so the pattern can be used over and over again. NOTE: If you are making flannel pajamas for children, use the flame resistant fabrics.

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Pajamas / pyjamas refer to several related types of clothing. The original pyjamas are loose, lightweight trousers fitted with drawstring waist bands and worn in South and West Asia by both sexes. In many English-speaking nation's pajamas are loose – fitting, two-piece garments derived from the original garment and worn chiefly for sleeping, but sometimes also for lounging, also by both sexes.

More generally, pajamas may refer to several garments, for both daywear and nightwear, derived from traditional pajamas and involving variations of style and material. It is practical to learn how to make them which may pave the way to a tailoring business later on.
Refer to each illustration so you can take measurements before drafting the pattern.

**Waist circumference** - Adjust your pants to a comfortable position and measure around the narrowest part. Insert two fingers under the tape measure for ease.

**Hip Circumference** – Measure around the fullest part of the hip (buttocks). Again insert two fingers under the tape measure for ease.

**Bottom Measure** – Locate the front and back crease of the pants worn by the person. Measure around the ankle or where the pajama length ends.

**Crotch** – Position the L-square under the crotch of the one being measured.

**Length of pants** – Adjust the pants to a comfortable position and measure from the side seam below the belt to the desired length of pants.
Draft – a preliminary sketch of a working plan

Tools and Supplies Needed:

- Tape measure
- L-square
- French curve
- Meter stick
- Pencil with eraser
- Pattern paper

Steps on how to draft a basic pajama pants

Example,

- Length - 32”
- Hips - 34” / 4 = 8 1/2”
- Crotch - 9”
- Bottom - 18” / 2 = 4 1/2”
- Waist - 27” / 4 = 6 3/4”

Get the middle of the pattern paper and measure 2 1/2” from the top edge then draw a perpendicular lines.

1. A - B = Pajama length
2. B - C = measurement 1 ½” downward
3. A - D = crotch measurement; square out A, D, B, C
4. D - E and D - F = hip circumference; square up
5. F - J = 3” right side, to get point E, measure 2 1/2” left side
6. D - J and E - K = 3” upward; connect J to L and K to I with the use of French curve.
7. H - M = 1 1/2” upward then connect M to G with the use of meter stick.
8. B - N = ¼ bottom measure; connect H to M with meter stick / L-square.
9. O - P and Q - N = ¼ bottom measure; connect I to N with the use of meter stick.
Preparing the materials for cutting

Fabrics also come in various widths. They can be purchased from textiles stores. Purchase and prepare the fabric that fits the job requirement/specifications of your client. Below are the different widths of fabrics.

<table>
<thead>
<tr>
<th>Inches</th>
<th>Centimeters</th>
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<tbody>
<tr>
<td>35” – 36”</td>
<td>90 cm</td>
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<td>39”</td>
<td>100 cm</td>
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<tr>
<td>44 – 45”</td>
<td>115 cm</td>
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<td>48”</td>
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<td>72”</td>
<td>180 cm</td>
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Since patterns are already drafted, you can now layout pattern on your available fabrics. This will enable you to compute for the exact yardage of the fabric to be purchased for the project.

Your knowledge on how to identify wrong from right side can also be useful in purchasing the fabric.

Look at the illustration below.
Lesson 5. OCCUPATIONAL HEALTH AND SAFETY

What is a hazard?

A **hazard** is any source of potential damage, harm or adverse health effects on something or someone under certain conditions at work.

Basically, a hazard can cause harm or adverse effects (to individuals as health effects or to organizations as property or equipment loses).

Sometimes a hazard is referred to as being the actual harm or the health effect it caused rather than the hazard. For example, the disease tuberculosis (TB) might be called a hazard by some but in general the TB-causing bacteria would be considered the "hazard" or "hazardous biological agent".

What are examples of a hazard?

Workplace hazards can come from a wide range of sources. General examples include any substance, material, process, practice, etc. that has the ability to cause harm or adverse health effect to a person under certain conditions.

<table>
<thead>
<tr>
<th>Workplace Hazard</th>
<th>Example of Hazard</th>
<th>Example of Harm Caused</th>
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<tbody>
<tr>
<td>Thing</td>
<td>Knife</td>
<td>Cut</td>
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<tr>
<td>Substance</td>
<td>Benzene</td>
<td>Leukemia</td>
</tr>
<tr>
<td>Material</td>
<td>Asbestos</td>
<td>Mesothelioma</td>
</tr>
<tr>
<td>Source of Energy</td>
<td>Electricity</td>
<td>Shock, electrocution</td>
</tr>
<tr>
<td>Condition</td>
<td>Wet floor</td>
<td>Slips, falls</td>
</tr>
<tr>
<td>Process</td>
<td>Welding</td>
<td>Metal fume fever</td>
</tr>
<tr>
<td>Practice</td>
<td>Hard rock mining</td>
<td>Silicosis</td>
</tr>
</tbody>
</table>

As shown in Table 1, workplace hazards also include practices or conditions that release uncontrolled energy like:

- an object that could fall from a height (potential or gravitational energy),
- a run-away chemical reaction (chemical energy),
- the release of compressed gas or steam (pressure; high temperature),
- entanglement of hair or clothing in rotating equipment (kinetic energy), or
- contact with electrodes of a battery or capacitor (electrical energy).
What is Risk?

**Risk** is the chance or probability that a person will be harmed or experience an adverse health effect if exposed to a hazard. It may also apply to situations with property or equipment loss.

For example: The risk of developing cancer from smoking cigarettes could be expressed as "cigarette smokers are 12 times (for example) more likely to die of lung cancer than nonsmokers".

Another way of reporting risk is "a certain number ,"Y", of smokers per 100,000 smokers will likely develop lung cancer" (depending on their age and how many years they have been smoking). These risks are expressed as a probability or likelihood of developing a disease or getting injured, whereas hazards refer to the possible consequences (e.g., lung cancer, emphysema and heart disease from cigarette smoking).

Factors that influence the degree of risk include:
- how much a person is exposed to a hazardous thing or condition,
- how the person is exposed (e.g., breathing in a vapor, skin contact), and;
- how severe are the effects under the conditions of exposure.

What is a risk assessment?

Risk assessment is the process where you:
- identify hazards,
- analyze or evaluate the risk associated with that hazard, and
- determine appropriate ways to eliminate or control the hazard.

The Occupational Safety and Health Practices (OSHP) Answers Risk Assessment has details on how to conduct an assessment and establish priorities.

What is an adverse health effect?

A general definition of adverse health effect is "any change in body function or the structures of cells that can lead to disease or health problems".

Adverse health effects include:
- bodily injury,
- disease,
- change in the way the body functions, grows, or develops,
- effects on a developing fetus (teratogenic effects, fetotoxic effects),
- effects on children, grandchildren, etc. (inheritable genetic effects)
- decrease in life span, change in mental condition resulting from stress, traumatic experiences, exposure to solvents, and so on; and,
- effects on the ability to accommodate additional stress.
Will exposure to hazards in the workplace always cause injury, illness or other adverse health effects?

To answer this question, you need to know:
- what hazards are present,
- how a person is exposed (route of exposure, as well as how often and how much exposure occurred),
- what kind of effect could result from the specific exposure a person experienced, the risk (or likelihood) that exposure to a hazardous thing or condition would cause an injury, or disease or some incidence causing damage, and how severe would the damage, injury or harm (adverse health effect) be from the exposure.

The effects can be acute, meaning to say that the injury or harm can occur or be felt as soon as a person comes in contact with the hazardous agent (e.g., a splash of acid on a person's eyes).

Some responses may be chronic (delayed). For example, exposure to poison ivy may cause red swelling on the skin two to six hours after contact with the plant. On the other hand, longer delays are possible. Mesothelioma, a kind of cancer in the lining of the lung cavity, can develop over 20 years or more after exposure to asbestos.

Once the hazard is removed or eliminated, the effects may be reversible or irreversible. For example, a hazard may cause an injury that can heal completely (reversible) or result in an untreatable disease (irreversible).

Types of Hazard

1. **Chemical** - A chemical hazard is any substance that can cause harm, primarily to people. Chemicals of all kinds are stored in our homes and can result in serious injuries if not properly handled. Household items such as bleach can result in harmful chlorine gas or hydrochloric acid if carelessly used. Gasoline fumes from containers for lawnmowers or boats can result in major health hazards if inhaled.

2. **Electrical** - An **electrical hazard** can be defined as a dangerous condition where a worker could make electrical contact with energized equipment or a conductor, and from which the person may sustain an injury from shock; and/or, there is potential for the worker to receive an arc flash burn, thermal burn, or blast injury. Working near an electrical hazard is dangerous and can be fatal. Any work on or near energized equipment must be done only when measures are in place to provide protection from electric shock and burn. With adequate safety measures in place, every electrical injury and fatality can be prevented. **An electric hazard is considered to be removed** when protective measures are put in place at the source (remove hazard or deenergize), or along the path
(place electrical insulation/barrier between the worker and the electrical hazard). Where Personal Protective Equipment (PPE) is relied upon for worker protection, an electrical hazard is considered to remain and it is still necessary to address safety requirements for other workers in the area.

3. **Ergonomic** - Ergonomic hazards impact employers and workers and their families. Poor work place design, awkward body mechanics or postures, repetitive movements, and other ergonomic hazards induce or contribute to a staggering number of cumulative trauma disorders. 2. Cumulative trauma disorders (CTD) affect hands, wrists, elbows, arms, shoulders, the lower back, and the cervical spine area. Structures involved include tendons, muscles, bones, nerves, and blood vessels. One can plan strategies for abatement by learning to recognize the hazards that contribute to CTD. 3. OSHA has published the Ergonomic Program Management Guidelines. OSHA has also given Advance Notice of Proposed Rulemaking for an Ergonomic Standard that will affect all industries.

4. A company wide ergonomic assessment should be developed, followed by a well written ergonomic plan. Ergonomic abatement will decrease the costs associated with CTD and ultimately impact the corporate "bottom line."

5. **Psychological** - The psychological hazard has recently been acknowledged in legislation as a workplace hazard. This type of hazard relates to mental health and behavioural disorders.

6. **Radiation** - Radiation Hazard (RADHAZ) describes the hazards of electromagnetic radiation to fuels, electronic hardware, ordinance, and personnel. In the military these hazards are segregated as follows:
   - Hazards of Electromagnetic Radiation to Personnel (HERP)
   - Hazards of Electromagnetic Radiation to Ordnance (HERO)
   - Hazards of Electromagnetic Radiation to Fuel (HERF)

7. **Biological** - A biological hazard, or biohazard, is anything coming from living organisms (i.e. pollen, fungi, animals, insects, bacteria and viruses) that could be a threat to someone's health. It is represented by ☣, the biohazard symbol, which is used everywhere in the world. When people see this sign they know they have to take precautions, and to follow proper conduct in science labs.

8. **Physical** - Physical hazards are those substances which threaten your physical safety. The most common types of physical hazards are:
   - *Fire*    *Explosion*    *Chemical Reactivity*
Hazards that may be encountered when using the sewing machine include:

- Cuts and injuries from sharp edges, knife blades, scissors and pins
- Finger injuries while sewing
- Back injury from poor posture and improper lifting procedures
- Eye strain from poor lighting

**Safe operating procedure in using the sewing machine**

1. Do not use machine unless you had instruction and training in its safe use and operation.
2. Teacher permission must be given to operate the sewing machine.
3. Read and understand the instruction sheet, complete the safety test with 100% score, and demonstrate competence and safe use.

**Pre-operational Safety**

1. Always check that the sewing machine and its cord are in good working order.
2. Check all adjustments and settings carefully before commencing any sewing operation.
3. The workplace should be clean and free of equipment, rubbish and other obstacles.

**Operating Safety Precautions**

- Make sure all other learners keep away from the workplace at all times.
- One person only is to operate a sewing machine at any time.
- Do not touch a sewing machine while another person is sewing.
- Do not wear loose clothing, especially long sleeves and neck ties.
- Turn the power off when making adjustments to the sewing machine such as changing the presser foot and needle.
- Never race the sewing machine at high speed.
- Take care not to run machine over pins.
- Make sure the take-up lever is in the upper position before pulling out the fabric and cutting threads.
- It is important to keep the machine as free of lint as possible.
- Do not push or pull the fabric while sewing. Let the machine do the work while your hands guide the fabric without forcing it.
Exposure to physical agents

Workers may be exposed to noise and vibrations, for example during weaving, spinning, sewing, twisting, and cutting. Exposure to loud noise can result in permanent hearing damage such as noise-induced hearing loss and tinnitus. Exposure to vibration, particularly together with risk factors for MSDs, can lead to long-term harm. Electromagnetic fields may also be found in some workplaces in the textiles sector.

Accidents in the textiles sector. The textiles sector has many hazards that can cause injury to workers, from transport in the workplace (lifttruck), dangerous large work equipment and plant, to the risk of slips from a wet working environment. Workers being struck by objects, such as moving machinery parts and vehicles are a significant cause of injury in the sector. There also exists the risks of fire and explosions, for example from heating plants used for vapour generation.

Psychosocial issues in the textiles sector. Work-related stress has been defined as being experienced when the demands of the work environment exceed the workers' ability to cope with or control them. Work-related stress may be an issue in some areas of the textile sector, being associated for example with repetitive and fast paced work, and where the worker has no influence on how the job is done.

Hazard Management

One of the most important duties required by OHS law of all workers, including volunteers, is to keep the workplace as safe as possible. A good way to do this is to use the 4 ‘SAFE’ steps:

Spot the hazard.
Assess the hazard.
Fix the hazard.
Evaluate the result
Activity 8. Examining yourself!

A. Directions: Read each item carefully and choose the letter of the best answer from the choices below. Write your answer in your quiz notebook or on ¼ sheet of paper.

1. Any source of potential damage, harm or adverse health effects on something or someone under certain conditions at work.
   a. Hazard
   b. Psychological
   c. Risk
   d. Chemical

2. There is chance or probability that a person will be harmed or experience an adverse health effect if exposed to a hazard. It may also apply to situations with property or equipment loss.
   a. Psychological
   b. Risk
   c. Ergonomics
   d. None of the above

3. Any substance that can cause harm, primarily to people is ________________.
   a. Substance
   b. Hazard
   c. Chemical
   d. Psychological

4. It has recently been acknowledged in legislation as a workplace hazard.
   a. Risk
   b. Ergonomics
   c. Psychological
   d. Chemical

5. Which of the following is an example of a hazard?
   a. Wet floor
   b. Flower
   c. Cake
   d. Baby

B. Directions: Identify each item as a Hazard or Risk.

1. Electricals
2. Trips
3. Spillage of wet substance
4. Falls
5. Scissor
6. Pricks
7. Knife
8. Cutting cloth
9. Cloth dust
10. Fire
**Safety Precaution**

All fiber will burn! Use small piece of fabric only (burn actual fabric and not selvedge). Always hold small piece of test fiber with tweezers, not with your fingers. Burn fabric over a metal dish with soda or water at the bottom. Don’t sniff burnt fiber until smoke disappears. Don’t touch fiber until bead cools. All synthetic fiber should be considered to be a serious drip danger and fume hazard. Some fabric can ignite and melt.

The result is burning drips, which can adhere to fabric or skin and cause a serious burn. Pre-wash your fabric before you test it. Finishes can confuse your result.

---

**Activity 1 Fiber Burn Chart**

**Directions:** Tap your sample cloth on the space provided below and fill out the chart.

<table>
<thead>
<tr>
<th>Fabric Sample</th>
<th>Describe the flame</th>
<th>Describe the bead</th>
<th>Describe the ashes</th>
<th>Type of color</th>
<th>Color of smoke</th>
<th>Name of the fabric</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
Activity 2. Group Activities

Directions: Using the activity in the previous page, discuss and synthesize the article with your group. Use the graphic organizer below. After the discussion, have the reporter present the output. Each group is given five minutes to report.

Class Decision Chart

<table>
<thead>
<tr>
<th>Decision to Be Made</th>
<th>Qualities</th>
<th>Possible Solutions</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1.</td>
<td></td>
</tr>
<tr>
<td></td>
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<td>2.</td>
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<td></td>
<td></td>
<td>3.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>4.</td>
<td></td>
</tr>
<tr>
<td></td>
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<td>5.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>6.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>7.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8.</td>
<td></td>
</tr>
</tbody>
</table>

Final Decision:

Group A: Sequence Chart

Topic:  
First:  
Next:  
Next:  
Next:  
Final:  

Group B: Accordion Chart

Topic:  
First:  
Next:  
Next:  
Next:  
Final:  
## Oral Presentation Rubric

<table>
<thead>
<tr>
<th>Categories</th>
<th>Very good (has no more than three minor errors)</th>
<th>Satisfactory (has four to seven errors)</th>
<th>Poor (has more than seven errors)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gave an interesting introduction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Presented clear explanation of topic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Presented information in logical manner</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Used complete sentence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Offered a concluding summary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Spoke clearly, correctly, distinctly, and confidently</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Maintained eye contact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Maintained acceptable posture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Utilized audio-visual aids</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Handled questions and comments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Lesson 6. FABRIC/TEXTILES

Textile is commonly known as fabric made of natural or synthetic fibers that are knitted, woven, or felted together to create a cloth. Through the years, textile has evolved to cope with the emerging trends of modern life, imparting crease-resistance, fire proofing, stain-resistance, water proofing, and non-shrink properties for a more varied selection of fabrics according to the needs of the society.

An easy yet subjective way of identifying a certain fabric involves a simple burn test. This process breaks down the fabric into two categories, natural fiber and synthetic or man-made fiber; however, some fabrics are a mixture of natural and synthetic fibers. Information on the type of material can help distinguish ways in caring for a particular garment.

Obviously, the first step to be taken before beginning the work is to straighten the fabric. There are various ways of making ends straight.

1. Pull cloth to straighten grain lines.
2. Pull in the direction of arrows.
3. Pull each half of folded cloth separately.
4. Pull a strand along the crosswise grain then cut following:
   a. line created by the pulled thread
   b. to straighten difficult fabrics

Pre – Shrinking Stage

1. **Soaking** - The material is folded and soaked in a basin of water to prevent it from shrinking.
2. **Drying** - After soaking, the material is hung without squeezing or wringing and without exposing to the sunlight.
3. **Straightening** - When dry, the material is straightened of grain lines before cutting.
4. **Pressing** - The wrinkled parts caused by improper hanging are pressed.
Steps in soaking and drying

1. Make the fabric thread and grain perfect.
2. Fold fabric lengthwise, wrong-side out, and selvages end together.
3. Fold crosswise several times.
5. Soak the fabric for six to twelve hours or overnight until fabric is thoroughly wet.
7. Absorb excess water by rolling fabric in towel.
8. Unfold fabric flat on the table making sure that ends are straight.
10. Smooth with hands from selvage to fold.

Layout – The way the pattern pieces are arranged on the fabric for cutting.

Pattern Layout for Pajama Pants

Before attempting to layout pattern on the material, be sure to prepare the following tools, equipment, and materials needed:

- Cutting table
- Bent-handled dressmaker’s shears
- Pins and pin cushion
- Layout plan (pressed)
- Fabrics (pressed)

Kinds of Fabric Folds

1. **Lengthwise centerfold** – The fabric is folded lengthwise at the center with the selvages together.
2. **Crosswise centerfold** – The fabric is folded crosswise at the center with the raw edges together.
3. **Off-center lengthwise fold** – The fabric is folded with the selvage meeting at the center.
4. **Off-center crosswise fold** – The fabric is with the raw edges meeting at the center.

Techniques in Pinning Pattern Pieces on the Fabric

1. Fabric should be kept flat on the table when pinning. Do not lift it from the table or place left hand under it.
2. Place pins perpendicular to the edges of the pattern, with the pointed end on the inner side.
3. Place the pins about 1.5 cm from the edge, because shears will be changed and will have jagged edges when this cuts through the pins.
4. Pin the fabric in an interval of 13cm. Too many pins on the cloth tend to wrinkle it. The pattern will not get out of place when it is cut if more pins are placed along curved edges.
Providing seam allowances for pajama trousers:

Transferring Construction Marks

Construction marks are guides in sewing and must therefore be clearly, neatly and properly transferred to the cloth. In transferring construction marks, the following tools are needed:

1. Tracing wheel
2. Tracing paper or carbon paper
3. Pencil
4. Ruler
5. Tailor’s chalk

The transferring of marks is facilitated through various methods such as:

a. ruler, pencil, and tracing paper method  
b. tracing wheel, ruler, and tracing paper method  
c. tailor’s chalk and ruler method  
d. tailor’s chalk and thumb note

How to Cut Out and Mark Pattern Pieces on Fabric

Accuracy in cutting your sewing pattern and in transferring the construction symbols, or marks, onto the fabric is crucial. These are the final steps taken before you begin.

Cutting Garment Pieces

Garment construction is not difficult if the needed body measurements are taken accurately; and, patterns are well-prepared, laid out, and pinned correctly on selected fabrics. Garment pieces are also properly cut with appropriate tools.
### Appropriate Cutting Tools Used in Fabrics
- 1. Shears
- 2. Scissors

### Pointers on How to Cut Fabrics
1. Keep the ends and sides of the material parallel with the table edges at all times so that the grain never shafts.
2. Walk around the table as you cut.
3. Do not pick the cloth up from the table. Slip the left hand between the cloth and the table.
4. Cut exactly and evenly with the edge of the pattern.
5. Cut notches outward or make short (1/4) clip instead.
6. Do not use pinking shears to cut the garment.
7. Look over the guide sheet to find out if extra pieces will be needed in finishing such as shaped facing, bias, binding, straight bands for cuffs, or rectangles for piped buttonholes.
8. Cut all pieces before marking or basting. Try to get the markings all done before removing the work from the table.
9. Do not remove the pattern until you are ready to work on each piece.
10. Discard small scraps of fabrics and collect those you wish to save in net bundle.

### Sewing Pajama Pants

#### Order of Operations:
1. Take the body measurements of customer.
2. Gather all the tools and materials needed.
3. Draft the pattern of the trousers.
4. Prepare the fabric for layout and cutting.
5. Lay-out, put allowances, cut, and transfer construction marks from pattern to fabric.
6. Trace folding and stitching line.
7. Fold and stitch the hem.
8. Close the inseams.
9. Join the two legs / crotch. Fold and stitch the waistline.
10. Attach the garter. Insert garter.
11. Clean and remove thread ends.
12. Press, fit, and evaluate.
Activity 3. Pajama Shirt

Directions: Copy the concept map about preparing a pajama shirt on a separate sheet of paper. Then complete it and add a title.
Here is a more advanced flannel night shirt with pockets, button holes, set-in sleeves and curved hem. Mix and match different flannel pajamas to suit your mood. Flannel is a soft woven fabric, usually made from cotton or wool that is milled or raised. It is warmer than regular cotton.

**STEPS ON HOW TO DRAFT A SHIRT**

**Front and Back Pattern**

Draw a perpendicular line with A as the starting point.

1. \( A - B = 3" \) (Front) \( \frac{3}{4}" \) (Back) mark as \( b \). \( a - b = \frac{3}{4}" \) (Back).
2. \( A - C \) = Apex /bust height.
3. \( A - D \) = Full bodice length.
4. \( D - E \) = Shirt length, square out \( A, b, B, C, D \) and \( E \).
5. \( A - F = 3" \) sideward; connect \( F \) to \( B \), then \( F \) to \( b \) using French curve.
6. \( A - G = \frac{1}{2} \) shoulder measurement.
7. \( G - H = 1 \frac{1}{2}" \) (front); \( G - h = 1" \) (back); connect \( F \) to \( H \) using \( L \)-square or ruler.
8. \( H - I = 4" \) downward; \( h - I = 4" \) downward.
9. \( I - J = \frac{3}{4}" \) (Front); \( \frac{1}{2}" \) (back) \( 4" \). Connect \( H \) to \( J \) with ruler.
10. \( C - K = \frac{1}{4}" \) Bust + 1". Connect \( J - K \) with French curve.
11. \( D - L = \frac{1}{4}" \) waist + 1". Connect \( K \) to \( L \) with \( L \)-square.
12. \( E - M = \frac{1}{4}" \) hip + 1"; connect \( L \) to \( M \) with hip curve.
13. \( D - N = \frac{1}{2} \) apex distance; \( DN = CO \); from \( N \), square upward then measure 4” downward and \( \frac{1}{2}" \) both sides. Connect all points.
14. \( EQ = 1\frac{1}{2}" \) downward then connect \( Q \) to \( M \) with hip curve.
Procedure in Making a Pajama Shirt
- Take all the measurements and record.
- Gather all the tools and materials needed.
- Draft the pattern of the shirt.
- Prepare the fabric for layout and cutting. (Specify flannel as the material.)
- Choose your buttons for the shirt and any other sewing supplies.
- Layout, cut and transfer construction marks from pattern to fabric.
- Sew all the edges of the shirt.
- Join the shoulder seam.
- Prepare and attach fitted facing.
- Sew the side seam.
- Prepare and attach set-in sleeve.
- Fold and sew hem.
- Attach buttons and make hand-worked buttonholes.
- Clean and remove thread ends.
- Press, fit and evaluate.

Activity 4. Individual Task

Directions: Using the guidelines above and your own measurement, draft a pattern for pajama suit.

Measurements needed:
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________

Materials needed:
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________

Note: Same Rubrics applied for grading on Performance Task (p. 44).
Individual Performance

First Round: Perform pattern drafting using the given measurements for 15 minutes only.

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pajama length</td>
<td>39&quot;</td>
</tr>
<tr>
<td>Crotch</td>
<td>10&quot;</td>
</tr>
<tr>
<td>Hip</td>
<td>38&quot;</td>
</tr>
<tr>
<td>Waist</td>
<td>28&quot;</td>
</tr>
<tr>
<td>Bottom</td>
<td>18&quot;</td>
</tr>
</tbody>
</table>

Second Round: Perform pattern drafting using the same set of measurements for 5 minutes only.

Items to be evaluated

<table>
<thead>
<tr>
<th>Items to be evaluated</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shirt</td>
<td></td>
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</tbody>
</table>

1. The front shirt has a deeper neckline than the back.
2. The front armhole is longer than the back.
3. The center front is longer than the back.
4. Sides of the shirt are of the same length.
5. Chest is of the same width.

Note: This evaluation is not a test but a basis for developing your final patterns.

PERFORMANCE TEST

From the evaluation done in your previous patterns, be ready to develop the final patterns of the shirt.

- Shirt
  - Front part
  - Back part
  - Sleeve pattern
Scoring Rubrics for Drafted Pattern

Opposite each item is the corresponding point. Check your drafted pattern against the criteria given.

A. Process  50 %

Measure the following

1. \( A - B = 3" \) (Front)  \( \frac{3}{4}" \) (Back)  
   Corresponding Points: 4
2. \( A - C = \) Apex /bust height/chest  
   Corresponding Points: 4
3. \( A - D = \) Full bodice length  
   Corresponding Points: 4
4. \( D - E = \) Shirt length  
   Corresponding Points: 4
5. \( A - F = 3" \) sideward  
   Corresponding Points: 4
6. \( A - G = \frac{1}{2} \) shoulder measurement  
   Corresponding Points: 4
7. \( G - H = 1\frac{1}{2}" \) (front); 1" (back)  
   Corresponding Points: 4
8. \( H - I = 4" \) downward  
   Corresponding Points: 4
9. \( I - J = \frac{3}{4}" \) (Front);  \( \frac{1}{2}" \) (back)  
   Corresponding Points: 4
10. \( C - K = \frac{1}{4} \) Bust + 1"  
    Corresponding Points: 4
11. \( D - L = \frac{1}{4} \) waist + 1"  
    Corresponding Points: 4
12. \( E - M = \frac{1}{4} \) hip + 1"  
    Corresponding Points: 3
13. \( E - N = 1" \) downward; connect N to M  
    Corresponding Points: 3

B. Product 30 %

1. Curved lines were smoothly drawn.  
   Corresponding Points: 6
2. Perpendicular lines were projected perfectly.  
   Corresponding Points: 6
3. Unnecessary marks were erased neatly.  
   Corresponding Points: 6
4. Pattern was labeled clearly and properly.  
   Corresponding Points: 6
5. Pattern was neatly drafted.  
   Corresponding Points: 6

C. Work Habits 20%

1. Manipulated during tools properly.  
   Corresponding Points: 5
2. Observed economy in the use of materials.  
   Corresponding Points: 5
3. Maintained clean working area.  
   Corresponding Points: 5
4. Worked within the target time.  
   Corresponding Points: 5

Total

***
Lesson 7. BASIC SEWING MACHINE OPERATION AND MAINTENANCE

Setting of Sewing Machine A treadle sewing machine works by foot action and doesn't require any electricity. If taken care of properly, an antique treadle sewing machine can sew a better stitch than its modern counterpart. It takes some practice to keep your treadle machine sewing smoothly, but once you have mastered the foot action, you can enjoy sewing and getting a little exercise at the same time.

SETTING OF SEWING MACHINES

Perfect machine stitching is easy to achieve if you set the machine properly. This involves threading the upper and lower parts of the sewing machine. A beginner in dressmaking must learn how to thread the head of the sewing machine as one of the first steps in becoming a competent operator.

THREADING THE MACHINE

Each part of the threading mechanism on the head of a sewing machine has a definite purpose in guiding the thread from the spool to the needle. The thread must pass through the various guides in a given order so that the machine will sew properly the desired stitches.

A. ORDER OF THREADING IN THE UPPER PART

1. Spool pin
2. Upper thread guide
3. Between metal disc of tension
4. Thread take up lever
5. Lower thread guide
6. Needle

STEPS:

1. Put the spool of thread on the spool pin.
2. Bring the thread to the thread guide.
3. Pull the thread between the metal disc of the tension.
4. Bring the thread up to the thread take up lever and raise it as it goes.
5. Pull the thread down to the thread guide.
6. Pull it through the lower thread guide.
7. Thread the needle.
B. THREADING THE LOWER PART OF LOCKSTITCH SEWING MACHINE OR TREADLE SEWING MACHINE

STEPS:
1. Remove the bobbin case by pulling on the bobbin case latch.
2. Remove the bobbin from the case and wind the thread.
3. Put the bobbin back to the bobbin case and pull the thread through the little slot at least 4 inches.
4. Be sure that you hear the bobbin case inside the shuttle.
5. Start the mechanism by rolling the balance wheel forward to get the thread of the bobbin through the needle.
6. Pull the upper and lower thread together by 4 inches.
7. As you enjoy using your sewing machine, problems cannot be avoided, but knowing its causes is another challenging skill to develop.

CLASSIFICATIONS OF SEWING MACHINE TROUBLES

If the sewing machine in your laboratory is kept in good condition and is carefully adjusted and properly threaded, not too many things can go wrong. But there are certain difficulties that occur during an operation, so you should know these minor and common problems their causes and remedies. There are two classifications of sewing machine troubles, namely:

1. Minor sewing machine trouble
   This refers to problems that arise involving incorrectly attached accessories or supplies, unadjusted tensions and accessories that require a little dusting or oiling.

2. Major sewing machine trouble
   This involves replacing or removing damaged spare parts that cause the sewing machine not to function totally.
# COMMON SEWING MACHINE TROUBLES

<table>
<thead>
<tr>
<th>Machine Troubles</th>
<th>Causes</th>
<th>Remedies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Machine runs noisily</td>
<td>insufficient oil, loose screw, thread or dust clogged in the shuttle race</td>
<td>oil the sewing machine, tighten loose screw, clean the shuttle race before oiling</td>
</tr>
<tr>
<td>2. Machine rotates heavily</td>
<td>belt is too tight, insufficient oil, bearings or shuttle race is clogged with dust or thread</td>
<td>change belt if already old, oil the arm shaft, clean the shuttle race and bearing, then oil</td>
</tr>
<tr>
<td>3. Needle thread breaks</td>
<td>improper threading, tight tension, thread too coarse, needle is blunt, set incorrectly, presser foot not properly adjusted, poor quality thread, seam maybe too thick or heavy, bobbin case turns, fabric is pulled forcibly, needle may be bent, size of needle, tension</td>
<td>check the threading, change the texture of thread and attach the needle properly to the needle bar (flat side of the needle should face the needle bar), use correct presser foot, check if presser foot is secured and properly fastened, if seam is too heavy change needle to correct size, check the position of the bobbin case, reset the shuttle race assembly, change the bent needle to avoid needle bending, pull the upper and lower threads toward the rear of the presser foot after stitching and cut the threads, don’t force the fabric, just guide it, change the size of needle, adjust tension</td>
</tr>
<tr>
<td>4. Stitches skip</td>
<td>bent needle, dull needle or wrongly attached needle, unmatched size of needle or thread to the texture of fabric, no enough pressure on the presser foot, threading maybe incorrect</td>
<td>change the needle or correct positioning, change needle size and thread, increase pressure on the presser foot, check the threading</td>
</tr>
<tr>
<td>Machine Troubles</td>
<td>Causes</td>
<td>Remedies</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------------------------</td>
<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td>5. Stitches loop</td>
<td>• dull needle</td>
<td>• use blunt needle</td>
</tr>
<tr>
<td></td>
<td>• improper threading</td>
<td>• check the threading; if loops appear under the fabric, check the upper threading; adjust the upper tension regulator; if the loops appear on top of the fabric, check the lower threading; the thread may be inserted in the tension groove of the bobbin; check also the latch spring of the bobbin case.</td>
</tr>
<tr>
<td></td>
<td>• unbalance tension of the upper and lower threads</td>
<td>• balance the tension of both threads</td>
</tr>
<tr>
<td></td>
<td>• defective thread take up lever</td>
<td>• change the thread take up lever spring.</td>
</tr>
<tr>
<td>6. Upper thread breaks</td>
<td>• improper threading</td>
<td>• Correct threading</td>
</tr>
<tr>
<td></td>
<td>• improperly attached needle</td>
<td>• Attached the needle correctly</td>
</tr>
<tr>
<td></td>
<td>• bent or dull needle</td>
<td>• Change to blunt needle</td>
</tr>
<tr>
<td></td>
<td>• tight upper thread</td>
<td>• Reset the upper tension regulator</td>
</tr>
<tr>
<td></td>
<td>• poor quality thread</td>
<td>• Use good quality thread and thread size or texture</td>
</tr>
<tr>
<td></td>
<td>• unmatched needle</td>
<td></td>
</tr>
<tr>
<td>7. Lower or under thread breaks</td>
<td>• improper winding of the thread in the bobbin</td>
<td>• winding the thread in the bobbin uniformly</td>
</tr>
<tr>
<td></td>
<td>• bent or dull needle</td>
<td>• change the needle</td>
</tr>
<tr>
<td></td>
<td>• poor quality thread</td>
<td>• use good quality thread</td>
</tr>
<tr>
<td></td>
<td>• incorrectly set feed dog</td>
<td>• lower the feed dog if the fabric is thin; raise the feed dog if the fabric is thick</td>
</tr>
<tr>
<td></td>
<td>• bobbin does not freely turn</td>
<td>• check if bobbin is clogged with dirt or thread</td>
</tr>
<tr>
<td></td>
<td>• too tight bobbin case spring</td>
<td>• loosen the adjusting screw of the bobbin case or adjusting the tension of the upper thread</td>
</tr>
<tr>
<td>8. Seams Pucker</td>
<td>• too long stitch length for the fabric</td>
<td>• adjust stitch regulator to correct length</td>
</tr>
<tr>
<td></td>
<td>• tension is too tight</td>
<td>• adjust the upper and lower tension regulator</td>
</tr>
<tr>
<td></td>
<td>• size of needle and thread do not match</td>
<td>• use appropriate size of needle and thread</td>
</tr>
<tr>
<td></td>
<td>• too high feed dog</td>
<td></td>
</tr>
</tbody>
</table>
Machine Troubles | Causes | Remedies |
---|---|---|
cont. no. 8 | • too heavy pressure on the presser foot | • adjust the height of the feed dog depending on the thickness or thinness of the fabric • lessen pressure on the presser foot |
9. Fabric does not move | • feed dog not in proper sewing position • stitch regulator not set on zero • too tight pressure on presser foot | • adjust the feed dog to proper sewing position • adjust stitch regulator to desired stitch length • add pressure to presser foot by • adjusting the pressure regulator screw |
10. Fabric jams in machine | • needle may be too big • throat plate | • change the size of needle • needs round hole plate |

CHARACTERISTICS OF GOOD STITCHES

1. The length of stitch is proportioned to the texture of the fabric.
2. The stitches are the same in length.
3. The stitches appear the same on both right and wrong sides of the fabric.
4. The stitching follows the intended line smoothly and accurately.
5. There are no skipped or broken gaps in stitching.
6. When retraced, it appears as one line of stitching.
7. The stitching has no tangles.

HOW TO MAKE ADJUSTMENT ON THE MACHINE

There are two tension adjustments on the sewing machine - the upper and the lower. The upper tension controls the thread from the needle, while the lower tension controls the thread from the bobbin case. These tensions must be adjusted to suit various fabrics. If the tensions on both threads are properly adjusted, the threads will lock at the center of the material and form a correct stitch.

The size of the stitches varies with the type of cloth being sewn. Thin materials require a short stitch, a light thread, a fine needle, and a tight tension. Heavier materials require a longer stitch, a coarser thread, a larger needle, and less tension.

Sewing machine needles become dull through hard usage and also through regular wear and tear; sometimes, they become bent by improper use. The condition of the needle should be checked when sewing difficulties occur. A defective needle
should be replaced with a new needle of proper size. A dull needle will show a flat shiny spot at the very tip when rotated between the fingers. The straight of a needle can be tested by rolling the larger end on a flat surface; bent needles will wobble and straight needles will roll.

**A. HOW TO ADJUST TENSION ON THE NEEDLE THREAD**

The stitch tension control determines the amount of tension on the thread as they pass through the machine.

1. Correcting a Loose Top Stitch
   When the needle thread tension is too tight, the thread will lie straight along the upper surface. Thus,
   - Lower the presser foot.
   - Turn the small thumb nut at the front of the tension discs to the left (counter clockwise) to decrease the tension.

2. Correcting a Loose Bottom Stitch
   When the needle tension is too loose, the thread will lie along the underside of the material.
   - Lower the presser foot.
   - Check to make sure that the thread is between the tension discs.
   - Turn the small thumb nut at the front of the tension disc (clockwise) to increase the tension.
   - Check the stitch on pieces of scrap material.
B. ADJUSTING TENSION ON BOBBIN THREAD

1. Checking Bobbin Case

- Remove the bobbin from the bobbin case.
- Clean the inside of the bobbin case.
- Remove all particles of lint and dust with a small point stick.

*Note: If the tension spring is bent away from the bobbin case, or if the ends of the spring near the delivery eye are damaged, they should be replaced. Consult your teacher if defective parts are discovered.*

2. Adjusting Tension Spring on Bobbin Case

   The tension on the bobbin thread is controlled by adjusting the tension spring on the outside of the bobbin case. It is seldom necessary to change this adjustment once the tension has been properly set. The operator will usually be able to correct the stitch by varying the tension on the needle thread.

   a. Correcting a loose bobbin thread

      If the tension on the bobbin thread is too loose, the needle thread will lie straight along the upper surface of the material. Thus,
      - Tighten the tension.
      - Turn the regulating screw in the tension spring to the right.
      - Test the tension. Thread the bobbin case. Hold the end of the thread and allow the case to hang freely.
      - Check stitch on pieces of scrap material.

   b. Correcting a Tight Bobbin Thread

      If the tension on the bobbin thread will lie straight along the underside of the material. Thus,
      - Loosen the tension.
      - Turn the regulating screw in the tension spring slightly to the left.
      - Thread the bobbin case and test the tension.
      - Check stitches on pieces of scrap material.
HOW TO REGULATE THE LENGTH OF THE STITCH

The length of the stitch is regulated by the stitch regulator on the front side of the head. Thus,

- Move the stitch regulator downward to lengthen stitch.
- Move the stitch regulator upward to shorten stitch.
- Check the length of stitch on pieces of scrap material.

Note: For normal stitching, set the regulator at 10 to 12 stitches per inch, or at the number 3 for metric scale machines.

HOW TO REGULATE THE PRESSURE ON THE MATERIAL

The pressure on the material is regulated by adjusting the screw on the top of the machine. Thus,

- Turn the adjusting screw to the right to increase the pressure.
- Turn the adjusting screw to the left to decrease the pressure.
- Check the pressure by stitching on pieces of scrap material of the same weight.

Note: A pressure that is too heavy will cause the machine to run hard and will leave the print of the feed on fine materials.
Reflect and Understand

Activity 1. Think, Pair, Share

Directions: Choose your partner. For 2 minutes, brainstorm the procedure for the following operation. You may use your own strategies/techniques and explain in your own words.

a. Upper threading
b. Lower Threading

Sequence Chart

Topic:
First:
Next:
Next:
Next:
Final:

Accordion Chart

Topic:
First:
Next:
Next:
Next:
Final:
Scoring Rubric

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Excellent (5)</th>
<th>Very Satisfactory (4)</th>
<th>Satisfactory (3)</th>
<th>Fairly Satisfactory (2)</th>
<th>Needs Improvement (1)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>Procedures were followed from 1st up to the last step.</td>
<td>Some of the procedures were omitted</td>
<td>Few of the procedures were not followed</td>
<td>Most of the procedures were not followed</td>
<td>Did not follow any of the procedures</td>
<td></td>
</tr>
<tr>
<td>Speed</td>
<td>Finished ahead of time</td>
<td>Finished on time</td>
<td>Finished but late by three minutes</td>
<td>Finished but late for more than 5 minutes</td>
<td>Did not finish</td>
<td></td>
</tr>
<tr>
<td>Assistance Required</td>
<td>Did not need assistance</td>
<td>Needed assistance once</td>
<td>Needed assistance twice</td>
<td>Needed assistance four to five times</td>
<td>Needed assistance most of the time</td>
<td></td>
</tr>
</tbody>
</table>

Activity 2. Individual Task

Directions: Prepare swatches of different types of cloth. Stitch on the swatches by stitching straight lines at various stitch length. Check the output and record your observation on the table.

<table>
<thead>
<tr>
<th>Types of fabric</th>
<th>Length of Stitches</th>
<th>Consistency of Stitches</th>
<th>Tension of Stitches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Activity 3.  Sewing Machine Operation

Directions: Assume that you're in a small dress shop. Perform basic sewing machine operation.

Rubric for the Sewing Machine Operation Activity

<table>
<thead>
<tr>
<th>Items for Evaluation</th>
<th>Suggested Score</th>
<th>Student Score</th>
<th>Teachers’ Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Process (70%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Lifted the presser foot before starting to run the machine.</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Rested both feet on the treadle ahead of the other.</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Applied moderate force on the balance wheel.</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Followed the movement of the treadle and did not exert too much force on it.</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Performed four to five rotations continuously.</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Stopped the machine from running without holding the balance wheel.</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Work habits (30%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Correct posture was displayed.</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Holding of balance wheel was avoided when the machine was in motion.</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Turning back and forth of balance wheel was avoided.</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Followed the procedure correctly.</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Activity 1. Sewing Machine Basic Troubleshooting

**Directions:** Do the observation in your school or in your community. Look for a house that has a sewing machine, even a dress shop. Check the condition of the sewing machine/s. Fill out the table below.

<table>
<thead>
<tr>
<th>Date</th>
<th>Minor Problem</th>
<th>Cause/s</th>
<th>Remedies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.</td>
<td></td>
<td></td>
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<td></td>
<td>2.</td>
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<td></td>
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<td></td>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Major Problem</th>
<th>Cause/s</th>
<th>Remedies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Activity 2. Research and Investigate

Directions: Research from different dress shops, boutiques a real-life story venture into the clothing business. Include the problems met and how they were overcome.

Criteria for Term or Research Paper

<table>
<thead>
<tr>
<th>Qualities &amp; Criteria</th>
<th>Poor (0-80)</th>
<th>Good (81-90)</th>
<th>Excellent (91-100)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Format/Layout (15%)</strong></td>
<td>Follows poorly the requirements related to format and layout.</td>
<td>Follows, for the most part, all the requirements related to format and layout. Some requirements are not followed.</td>
<td>Closely follows all the requirements related to format and layout.</td>
</tr>
<tr>
<td>• Presentation of the text</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Structuring of text</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Follows requirements of length, font and style</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Content/Information (50%)</strong></td>
<td>The essay is not objective and presented poorly the issues referred in the proposed topic. The provided information is not necessary or insufficiently discussed.</td>
<td>The essay is objective and for the most part presented an in depth analysis of most of the issues referred in the proposed topic. The provided information is, for the most part, necessary and sufficiently discussed.</td>
<td>The essay is objective and presented an in depth analysis of all the issues referred in the proposed topic. The provided information is necessary and sufficiently to discussed.</td>
</tr>
<tr>
<td>• All elements of the topics are addressed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The information is technically sound</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Information based on careful research</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Coherence of information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Quality of Writing (25%)</strong></td>
<td>The essay is not well written, and contains many spelling errors, and/or grammar errors and/or use of English errors. The essay is badly organized, lacks clarity and/or does not present ideas in a coherent way.</td>
<td>The essay is well written for the most part, without spelling and grammar mistake. The essay is for the most part well organized, clear and presents ideas in a coherent way.</td>
<td>The essay is well written from start to finish, without spelling and grammar mistake. The essay is well organized, clear and presents ideas in a coherent way.</td>
</tr>
<tr>
<td>• Clarity of sentences and paragraphs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• No errors in spelling, grammar and use of English</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Organization and coherence of ideas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>References (10%)</strong></td>
<td>References are not appropriately used and cited.</td>
<td>Most of the references are appropriately used and cited.</td>
<td>All of the references are appropriately used and cited.</td>
</tr>
<tr>
<td>• Soundness of references</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Activity 3. Simulation

The learners’ output / project in Dressmaking / Tailoring, especially on the lesson learned from actual activities will be showcased by conducting an OJT to the nearest dress shop in their community. The student will be guided by the teacher about the number of hours he/she has to train in the dress shop to practice the different skills learned in the course.

Activity 4: Rendering Services

To some of you who have a sewing machine at home, you may accept minor repair of clothing like cutting and sewing of hemline. For some who do not have a sewing machine, you may look for a small shop in your neighborhood and offer your service as a pattern maker, cutter, trimmer or sewer.

Directions: Fill in the chart with projects/tasks/activities and their corresponding dates of implementation.

<table>
<thead>
<tr>
<th>Projects/Tasks/Activities</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Taking Body Measurement</td>
<td></td>
</tr>
<tr>
<td>2. Pattern Drafting</td>
<td></td>
</tr>
<tr>
<td>3. Hand Sewing</td>
<td></td>
</tr>
<tr>
<td>4. Seam Finishes</td>
<td></td>
</tr>
<tr>
<td>5. Quality Controlling</td>
<td></td>
</tr>
<tr>
<td>6. Sewing Machine Operation</td>
<td></td>
</tr>
<tr>
<td>7. Trouble Shoots of the Sewing Machine</td>
<td></td>
</tr>
<tr>
<td>8. Hand-worked button holes</td>
<td></td>
</tr>
<tr>
<td>9. Laboratory Practices and Safety</td>
<td></td>
</tr>
<tr>
<td>10. Others (please specify)</td>
<td></td>
</tr>
</tbody>
</table>
TECHNOLOGY AND LIVELIHOOD EDUCATION (TLE) 
RUBRIC FOR PERFORMANCE

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Highly Skilled</th>
<th>Skilled</th>
<th>Moderately Skill</th>
<th>Unskilled</th>
<th>No Attempt</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Use of tools, equipment, and materials</td>
<td>Appropriate selection, preparation, and use of materials and tools/equipment all the time</td>
<td>Appropriate selection, preparation, and use of materials and tools/equipment most of the time</td>
<td>Appropriate selection, preparation, and use of materials and tools/equipment some of the time</td>
<td>Never selects, preparation, and use of materials and tools/equipment all the time</td>
<td>No attempt to use tools/equipment</td>
</tr>
<tr>
<td>Application of procedure</td>
<td>Systematic application of procedures all the time without supervision</td>
<td>Systematic application of procedures all the time with minimum supervision</td>
<td>Systematic application of procedures some of the time with constant supervision</td>
<td>Never follows systematic application of procedures all the time without supervision</td>
<td>No attempt to apply procedures to project</td>
</tr>
<tr>
<td>Safety/Work habits</td>
<td>Highly self-motivated and observes all safety precautions at all times</td>
<td>Highly self-motivated and observes most safety precautions at all times</td>
<td>Highly self-motivated and observes sometimes some safety precautions</td>
<td>Needs to be motivated and observes all safety precautions</td>
<td>No motivation and totally disregards precaution</td>
</tr>
<tr>
<td>Speed/Time</td>
<td>Work finished ahead of time</td>
<td>Work finished meets deadline</td>
<td>Work finished close to deadline</td>
<td>Work finished way beyond deadline</td>
<td>No concept of time</td>
</tr>
</tbody>
</table>

Activity 5. Mini- Bazaar (Craft Sale)

The student’s culminating activity would be to showcase of their self-made product that is ready for selling. Each group will plan different item/s produce. It may be hand or machine sewn, example: pouch, hand painted eco-bag, etc. With the proper guidance of the teacher, you will use the given business plan on the previous page. The class will set-up booths or mini- stalls. This will train you to become a responsible entrepreneur and will help you generate extra income.
SUMMARY

Today’s successful apparel designer has a philosophy of art, fashion, history and keenness to current trends plus an understanding of one’s physical being.

No matter how well-designed a garment is, it will not be satisfying if it does not contribute to the physical comfort of the wearer.

It is practical and fun to draft a pajama as well as shirt pattern. To learn, to evaluate and to perfect your pattern, you will find it well worth the trouble. Once you have a good basic pattern, you can learn to change its style for popular trends while retaining all the personal fit factors. Eventually, having the skills and foundation of the course. Body measurement, pattern drafting, cutting, designing and sewing, would lead you to immediate employment. Furthermore, they hone your God-given talents and skills of becoming a productive individual in the community, and your family.
GLOSSARY

**Buttons** – The most popular fastener which may be also used as decorations.

**Binding** – A functional narrow finish that is made of fabric and used to hold the unfinished edges of a garment to make firm and trim.

**Circumference** – The measurements taken around the parts of the body.

**Cotton** – A fabric from cotton plant that is woven and knitted in many ways.

**Grainlines** – The direction of fabric threads.

**Hemline** – A line at the bottom of a garment turned and finished done, by a hand or machine.

**Length** – The longer or longest dimension of an object.

**Perpendicular** – The process forming a right angle with each other or with a given line.

**Seam Allowance** – The distance between the seam line and cutting line.

**Seam** – A line formed by sewing together two pieces of materials.

**Wringing** – Squeezing the cloth with force.
References

Books


Modules

Competency-Based Learning Material Garment NC II (TESDA)

Mealia See; Sewing and Entrepreneur Manual Copyright 2010.

Websites

www. The body shape bible.com

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