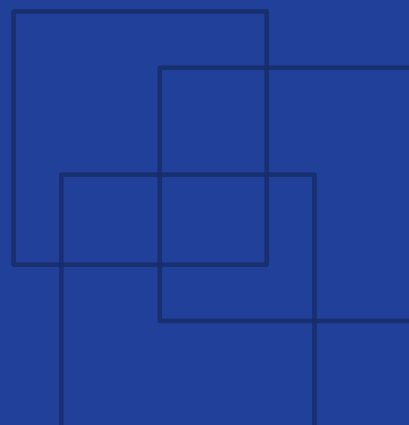




International  
Labour  
Organization

# Preparing for sewing

Cutting room operations



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# Factory Improvement Toolset

The Factory Improvement Toolset (FIT) is an innovative self-facilitated, activity-based learning approach designed by the International Labour Organization (ILO) to create more decent and sustainable employment. FIT supports manufacturers in global supply chains to improve productivity, competitiveness and working conditions by upgrading production systems and factory practices.

FIT has been developed to be a sustainable, time- and cost-efficient option for supporting factories to enhance productivity through improved business practices and working conditions. FIT focuses on areas of production improvement and actions to be taken specific to each participating factory. It can be utilized as stand-alone learning tools or to complement other training programmes.

With each module lasting no more than 2.5 hours, FIT enables factories to train personnel, whilst minimizing interference with production realities. The easy-to-use methodology makes it possible to rapidly scale the implementation to reach a large cohort of trainees across multiple production facilities.

Working in small groups, participants review real-life situations and engage in discussions to determine improvements to be made in factory without an external trainer or specialist. This self-facilitated, activity-based and highly participatory learning approach positions participants as both student and teacher and makes the toolset self-tailored to the needs and interests of each group.

## About this module

This FIT module on Preparing for sewing is a training for garment manufacturers to improve cutting room operations. Participants will work on marking, numbering, bundling, and ticketing operations. This module takes about 2 hours to complete.

## Upon completion of the training, participants should have:

- Reviewed best marking & numbering practices for ensuring sewing quality.
- Compared different bundling systems.
- Learnt to tag bundles adequately to ensure sewing quality.

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The **Factory Improvement Toolset** of the **International Labour Organization (ILO)** are developed and provided by the ILO's **Enterprises Department**.

**Authors:** Alix Machiels, Sara Andersson, Charles Bodwell, Jayantha R. de Silva.

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# Guidelines for successfully using the training tool

## Read out-loud

The FIT tool is designed for participants to take turns reading the instructions in the modules out loud to the group. At least one member of the group should be selected in the beginning of the session to take this responsibility.

## Work as a group

Always work in groups of 5-7 during a FIT session. The programme will not be successful if participants work independently or do not collaborate with each other.

## Be active

Encourage everyone in the group to actively contribute to the discussion. Ensure that no group member dominates the discussion or does not participate at all.

## Monitor the time

Select one member of the group to monitor the time for each activity and remind the group when it is time to move to the next exercise.

## Complete the action plan

Complete the action plan at the end of the session. This will help ensure that FIT results in improvements in the factory. Review the plan a while after the session to make sure that actions in the plan has been completed accordingly.

# Icons

A set of icons is used throughout the modules to provide easy to recognize reference points for different tasks within each session and activity.



## Read out loud

One member of the group should read out loud to the rest of group.



## Knowledge link

Knowledge and skills are linked to other FIT learning resources and support.



## Time allotted

Indicates how much time each sessions and activity should take.



## Supplies needed

Indicates that supplies may be necessary to complete the session.



## Begin step-by-step instructions

Indicates that the step-by-step instructions for an activity are beginning.



## Think about it

Indicates additional information for the participants to think about.

# Measuring your performance

Measuring operational efficiency is a key aspect of running a productive factory. The box(es) below guides you in understanding which measurement indicator(s) can be used to measure and evaluate the performance of your factory in relation to the topics covered by the FIT cutting room series.

<b>Indicator 1</b>	<b>Re-cuts (%)</b>
<b>Definition</b>	The proportion of fabric used for re-cuts for each order (the amount of fabric used for re-cuts compared to the total amount of fabric used for the order).
<b>Purpose</b>	To understand how much of the fabric was used for re-cuts, to better assess quality and begin to identify how to improve quality in the cutting room.
<b>Calculation</b>	$\left( \frac{\text{\# meters of fabric used for re-cuts}}{\text{total \# meters of fabric used for this order including re-cuts}} \right) \times 100\%$ <p>This should also be calculated separately for re-cuts due to cutting defects and re-cuts due to other defects.</p>
<b>Frequency</b>	Calculate for each cut order, then do a monthly average of all cut orders.
<b>Responsible</b>	Cutting room manager / Quality inspector

<b>Indicator 2</b>	<b>Fabric utilization (%)</b>
<b>Definition</b>	The proportion of total spread fabric that is actually used for garments. It is calculated for each cut (for each marker). The higher the most efficient.
<b>Purpose</b>	To understand how efficient your marker planning and cutting operations are, how much fabric gets wasted, and to begin to identify how to improve marker efficiency and reduce fabric waste.
<b>Calculation</b>	$\left( \frac{\text{Marker area used for garments in } sqm}{\text{total fabric area in } sqm} \right) \times 100\%$ <p>Marker area used for garments = Fabric (in sqm) actually used for garments            Total fabric area = The total amount of fabric spread on the cutting table for a cut            = Fabric length (mts) x Fabric width (mts)</p>
<b>Frequency</b>	Calculate for each marker, then do a monthly average of all markers.
<b>Responsible</b>	Cutting room manager / Senior marker maker





Session 1

# Business case study

## Goals

**Preparing you for the type of discussions you will have with other group members throughout the learning module and understanding the benefits of being exposed to different perspectives.**

**Understanding better why preparation for sewing is important in the factory.**

# Session 1

## Overview



**One member should read the full session out loud to the rest of group**



**15 minutes**



**Learning manual, pens, markers and poster paper**

A business case study presents a real-life situation for learners to reflect on and discuss with other group members. By discussing the case, students learn from others' ideas and perspectives, and develop an understanding of the topic at hand within the workplace.



**One group member reads the case study out loud**



**The whole group discusses the case study**



**Everyone develops a deeper understanding of the topic**

# Activities

Activity

1



15 minutes

## Case study review and respond

The case study below presents a situation that could happen in real life.



### Instructions:

- 1) As a group, listen to one member read the case study below while following along in your learning module.

Ritthy is a new cutting room manager at the HS garment factory. He spots several problems and notices that pieces are sent to the sewing room after they have been cut without much preparation. For example, there is no markings to help sewing operators through their work. Cutting helpers only write down the garment size with a pen on the top layer of each stack. This makes it difficult for line supervisors and sewing operators to know which parts correspond to which style, and to which cutting order.

Ritthy decides to make some changes. First, he sets up a unit of workers responsible for preparing cut parts for sewing. He trains them in marking and numbering each cut piece with specific symbols and a serial number to help sewing operators do their work. Ritthy also sets up a bundling system. Cut parts are now tied together in “bundles” by shade, size and style before being sent to the sewing room. Each bundle has its own “ticket”, which lists information on style, size, shade and cutting order.

Thanks to these changes, sewing operators make fewer mistakes. The overall garment quality greatly improves, and less material is wasted through cutting and sewing errors. This saves the factory a lot of time and money.

- 2) Together, discuss Ritthy’s situation by answering the three questions in table 1 on the next page.

## Table 1. Questions about Ritthy's situation

1. What problems has Ritthy identified? What impact do these problems have on the factory and its workers?

2. What does Ritthy do or change in order to solve these problems?

3. What are the results of Ritthy's solutions for the factory and its workers?

This page has been intentionally left blank and can be used for note taking.



## Session 2

# Learning about the topic

### Goals

**Discussing the steps involved in preparation for sewing.**

**Discussing marking and numbering in your factory, and reviewing best marking & numbering practices and techniques for ensuring quality.**

**Comparing different bundling systems and discussing your own.**

**Learning how to ticket / tag bundles efficiently and appropriately to ensure sewing quality.**

## Session 2

# Overview



One member should read the full session out loud to the rest of group

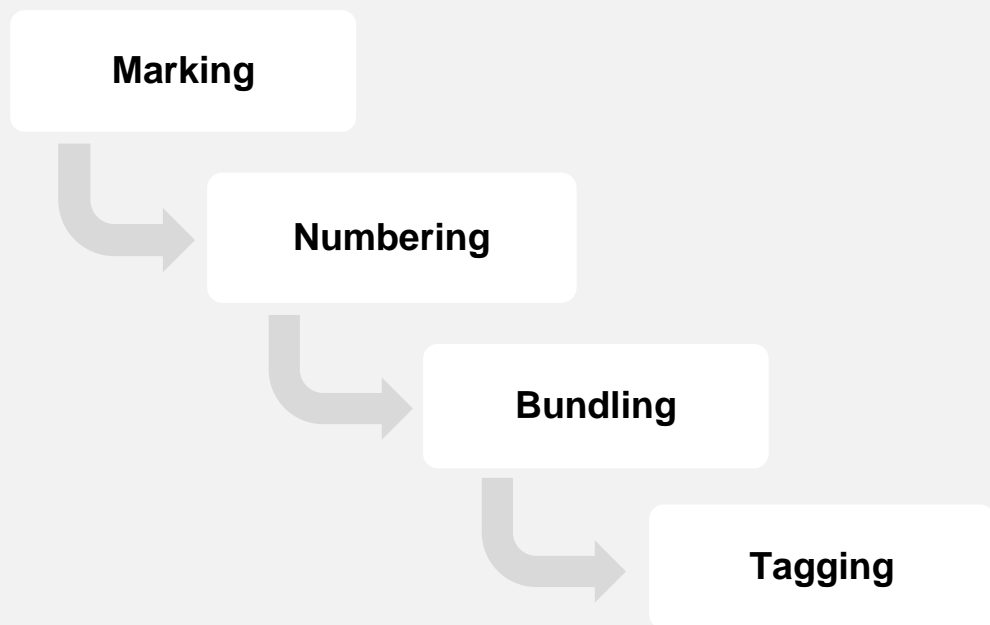


90 minutes



Learning manual, pens, and markers

This training module aims to help you improve the way your cutting room operates by focusing on preparing for sewing. Once fabric has been cut, a number of steps need to be performed before cut parts can be sewn together. These steps are important for avoiding sewing mistakes and ensuring acceptable garment quality later on. Throughout this module, you will work on the four steps below.



First, you will start by reviewing the steps of preparing for sewing, then identify good marking and numbering practices for garment quality, compare different bundle systems and discuss your own, and finally, learn how to ticket / tag bundles efficiently.



# Activities

Activity

## 2a



10 minutes

## Preparing for sewing

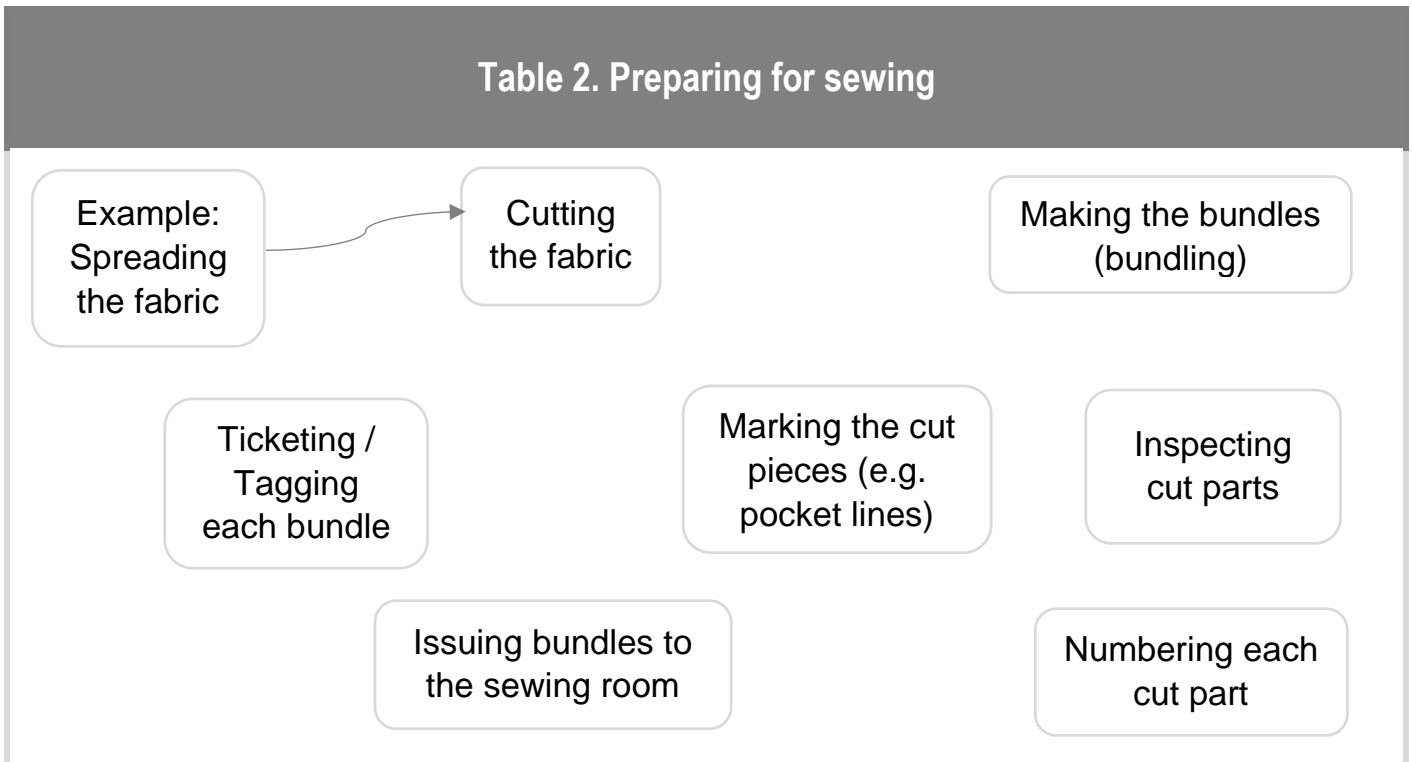
Once fabric has been cut, a number of steps need to be performed before sewing. In this activity, you will discuss how you **prepare** cut parts for sewing in your factory.



### Instructions:

- 1) Together, look at the steps involved in preparation for sewing in table 2, and put them in what you think is the right order using arrows. Solutions are provided at the bottom of this page.
- 2) Together, discuss: Does your factory follow the same process as below? Do you think it should? Why or why not?

Table 2. Preparing for sewing



To learn more about cutting operations, ask your facilitator for the modules on Cutting fabric, Spreading fabric, Inspecting cut parts, and Issuing bundles!

Solutions: Cutting → Inspection → Marking → Numbering → Bundling → Tagging → Issuing

Activity

# 2b



20 minutes

## Marking

After cutting, stacked garment pieces are marked and numbered.

**Position marking** is the transfer of sewing information from pattern pieces to cut pieces. In this activity, you will discuss position marking in your factory, and review marking practices and symbols.



### Instructions:




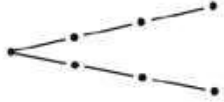


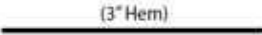
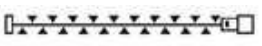
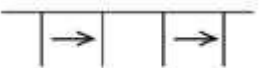
- 1) Together, discuss:
  - When is position marking done in your factory, and by who?
  - Which tools do you use for position markings (chalk, drill marks, etc.)?
- 2) Together, read through the ten good marking practices in table 3, and put a ✓ in the column on the right if you do it in your factory.
- 3) Together, look at table 4, and match each marking symbol with the right description. Solutions are provided at the bottom of the page.

Table 3. Position marking

Good practices	✓
1. Choose a marking tool that will not damage or discolour the fabric (consider fabric shade, thickness, type, etc.), such as chalk, pencil, or wax crayon.	
2. Choose a marking tool that can be easily removed, but will not be erased (by friction for example) before sewing, such as chalk, pencil, or wax crayon.	
3. Choose a marking tool that is not harmful to workers' health (such as chemical paint).	
4. Never use drill marks on knitted fabrics.	
5. Markings should only be made on the "wrong" side of the garment (the side that is not visible when the garment is worn).	
6. Test the marking method on a fabric swatch before selecting it.	
7. Make sure workers all use the same consistent marking symbols to avoid sewing mistakes (see step 3).	

8. Do not mark sheer fabrics or light colours as markings will show through the other side.	
9. Avoid pin markings as it can damage the fabric and pins can easily slip and get lost.	

**Table 4. Marking symbols**

Description	Symbol
<b>Buttons:</b> Indicates where buttons need to be sewn on.	a) 
<b>Hemline:</b> Indicates where to fold the hem to ensure that the length is right.	b) 
<b>Notches:</b> Help accurately position pieces that need to be sewn together.	c) 
<b>Pleat:</b> Indicates how wide to fold the pleat, and in which direction it should be folded.	d) 
<b>Dots:</b> Indicate special constructions, such as clippings or gatherings.	e) 
<b>Seam line:</b> Indicates where to sew the cut parts together.	f) 
<b>Darts:</b> Indicate exact stitching locations to help match the two sides for stitching.	g) 
<b>Buttonholes:</b> Indicates the location and length of buttonholes.	h) 
<b>Zipper:</b> Indicates where to insert the zipper.	i) 

Solutions: a) Seam line; b) Hemline; c) Notches; d) Pleat; e) Dots; f) Buttons; g) Darts; h) Buttonholes; i) Zipper; j) Hemline; k) Notches; l) Pleat

## Activity

# 2c



20 minutes

## Numbering

After cutting, stacked garment pieces are marked and numbered.

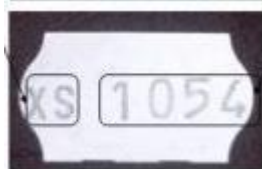
**Numbering** (or “shade marking”) is the process of sticking/writing a number on each cut piece to help identify it. In this activity, you will discuss numbering practices and why numbering is important.



### Instructions:

- 1) Have a participant read aloud the information about numbering in table 5, and make sure everyone understands.
- 2) Together, discuss:
  - Do you number cut parts in your factory?
  - If so, which tools do you use for numbering (chalk, ink, stickers, etc.)?
  - Does numbering include the same information in your factory?
- 3) Together, read the five questions in table 6 and select the correct answer. Solutions are provided at the bottom of the page.

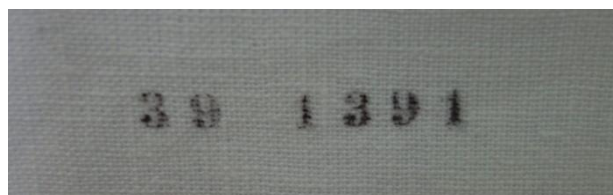
Table 5. Numbering practices



During **numbering**, each cut part is marked with a serial number, which contains:

- The size to which the cut part belongs (XS, 38)
- The ply (layer) number from which the part was cut (1054, 0751)

Nowadays, numbering machines are often used to number each cut part more quickly (image on the left). Other methods include writing numbers with chalk or pencil, and stamping with ink (image on the right).



## Table 6. Numbering

1. Numbering is done...
  - a. On each cut part
  - b. On each bundle
  - c. On each fabric layer
2. Numbers should be written or pasted...
  - a. On the “right” side of the garment (the one visible when the garment is worn)
  - b. On the “wrong” side of the garment (invisible when garment is worn)
  - c. On any side
3. Fabric plies should be numbered...
  - a. From bottom layer to top layer
  - b. It doesn't matter
  - c. From top layer to bottom layer
4. Identifying the garment size when numbering each cut part helps...
  - a. Avoid errors when bundling cut parts together
  - b. Avoid errors when sewing cut parts together (such as sewing two parts from different sizes)
  - c. Both answers above are correct
5. Identifying the ply number when numbering each cut part...
  - a. Helps ensure that cut parts of the same fabric are sewn together
  - b. Helps ensure that parts cut on the same day are sewn together
  - c. Helps ensure that parts cut from the same layer are sewn together



As there can be **shade** variation in one same roll of fabric, sewing parts cut from one same layer helps ensure that these two cut parts will be of the same shade. This is a guarantee of quality.

Solutions: 1. a.; 2. b.; 3. c.; 4. c.; 5. c.

## Activity

# 2d



20 minutes

## Bundling

**Bundling** is the process of disassembling cut pieces and reassembling them in small production batches by tying them up together. In this activity, you will learn about the different bundling systems.



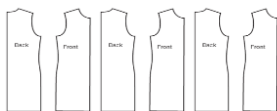
### Instructions:

- 1) Together, discuss:
  - Do you group cut parts into bundles in your factory? Why or why not?
  - If so, how do you group cut parts (e.g. by colour)?
- 2) There are 2 different types of bundles (two systems). Have a participant read aloud the two descriptions in table 7, then discuss:
  - Which system makes bundling mistakes most likely?
  - Which system is the fastest?
  - Which system is most simple?
- 3) Together, discuss: Why is bundling important to prepare for sewing and ensure the good quality of sewn garments?

Table 7. Bundles

#### Piece bundle

One bundle contains a stack of the same pieces (such as collars). The maximum recommended is 10 pieces (up to 25 for smaller garments). Consecutive fabric layers are bundled together after cutting. Example: Layers 1 to 10 → Bundle 1; Layer 11 to 20 → Bundle 2; etc.



#### Set bundle

One bundle contains a set of all different pieces needed to make several garments (maximum 10, up to 25 for smaller garments). So, set bundles are bigger than piece bundles. Cut parts cut from the same layer are bundled together in the cutting room.



To learn more about how bundles are used in the sewing lines, ask your facilitator for the “Using the bundle system” module.

Activity

2e



20 minutes

## Tagging

After bundling, a **bundle tag** (or “bundle ticket”) is then attached to each bundle to help track and identify the contents. In this activity, you will learn what information should appear on them, and discuss the reasons why they are useful.



### Instructions:

- 1) Together, discuss:
  - Do you use bundle tags in your factory?
  - If so, what information do tags contain?
- 2) Together, go through the list in table 8 and decide what information should always appear on tags by putting a ✓ in the column on the right. Solutions are provided at the bottom of the page.
- 3) Bundle tags can be filled-in manually or generated by computer. Together, look at the examples of bundle tags in table 9, then discuss the three questions in the table.

Table 8. Bundle tags

Information	Include?
Style number	
Size	
Ply number	
Fabric type	
Bundle number	
Colour / Shade	
Order number	
Number of garments in the bundle	
Buyer's name	
Pay per bundle	
Fabric roll number	
Style description	

Solutions: Always include style number, size, ply number, bundle number, number of garments in the bundle, order number

## Table 9. Bundle tags

Three examples of bundle tags:

Diagram of a bundle tag template with dimensions 2" by 2". The tag contains the following fields:

- STYLE No: \_\_\_\_\_
- CUT No: \_\_\_\_\_
- COLOUR \_\_\_\_\_
- PART \_\_\_\_\_
- SIZE \_\_\_\_\_
- BUNDLE No: \_\_\_\_\_
- Nos: \_\_\_\_\_
- PIECES \_\_\_\_\_

Designed by: Jayantha R de Silva



Buyer & Order	Milon-1234	T: 2	BSS MCL	Bundle No. :	1
Color:Blue	Cut No : 76			Size Name :	9
Replace :	Country :			Quantity :	18
Print/Embr :	Found- FR: PR:			Serial No. :	1 ----- 9
Sewing :	Recv- Reject:	BSS Print	2015-06-12 08:25 AM	Lot :	20
 MBC2C76F00118RP				 MBC2C76F001180P	

1. How can bundle tags help avoid sewing mistakes?

2. How can bundle tags help monitor cutting and sewing progress?

3. How can bundle tags facilitate cut parts quality control?



There are many different types of **tags**. Some examples are provided above. You can choose which type fits your needs best and design your own tags accordingly.



This page has been intentionally left blank and can be used for note taking.



## Session 3

# Action items

### Goals

**Summarizing and revising the new knowledge gained.**

**Identifying concrete applications of the new knowledge that benefit your factory.**

## Session 3

# Overview



One member should read the full session out loud to the rest of group

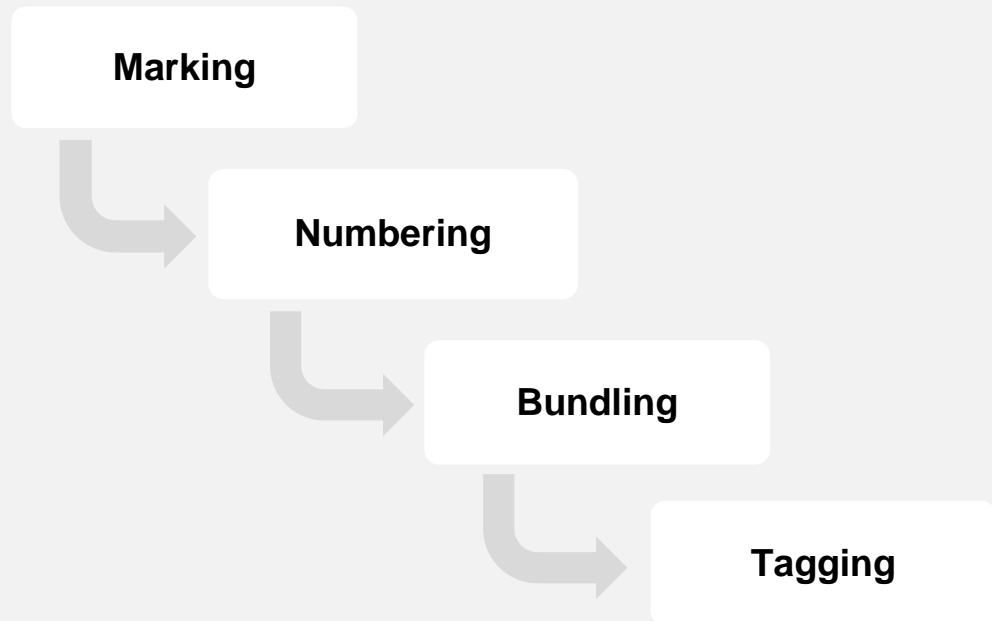


20 minutes



Learning manual, pens, and markers

Throughout this module, you gained new knowledge on how to prepare cut parts for sewing by marking, numbering, bundling, and tagging them.



In this session, you will think of ways to apply your new knowledge to improve the way you prepare cut pieces for sewing by reviewing best practices and drafting your own action plan.

# Activities

Activity

## 3a



5 minutes

### Best practices checklist

In this activity, you will review best practices to prepare for sewing as a next step for evaluating your own and implementing improvements.



#### Instructions:

- 1) Together, look at the list of best practices in table 10, and put a ✓ in the column on the right if you use these practices in your factory.

Table 10. Preparing for sewing

Best practices	✓
1. Cut pieces are marked with care, with an appropriate marking medium that does not damage the fabric.	
2. Workers are familiar with marking symbols, and use them consistently.	
3. Cut parts are numbered by size and ply number to avoid sewing mistakes and shade variation in finished garments.	
4. Cut parts are bundled together, either in set or piece bundles (one consistent system).	
5. Each bundle has its own ticket / tag, which contains all the necessary information to identify the contents and track the bundle.	

Activity

# 3b



15 minutes

## Your action plan

In this activity, you will think of ways to apply your new knowledge to improve preparation for sewing in your factory by drafting your own action plan.



### Instructions:

- 1) Together, fill in the action plan (table 12) on the next page. Identify a key problem that you want to solve and write down the solutions you identified while working on this module.

**Table 12. Preparing for sewing – Action Plan**

<b>Problem identified</b>				
<b>Solutions identified</b>	<b>Action(s) to be taken</b>	<b>Person responsible</b>	<b>By when?</b>	<b>How will improvements be measured?</b>

# Preparing for sewing

The Factory Improvement Toolset (FIT) is an innovative self-facilitated, activity-based learning approach designed by the International Labour Organization (ILO) to create more decent and sustainable employment. FIT supports manufacturers in global supply chains to improve productivity, competitiveness and working conditions by upgrading production systems and factory practices.

FIT is being piloted in Asia under the regional Decent Work in the Garment Sector Supply Chains in Asia project funded by the Government of Sweden.

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