



Skill India
कौशल भारत - कुशल भारत



Facilitator Guide



Sector
PwD

Sub-Sector
Service & Repair

Occupation
PwD Assistive Aids Repair Technician

Reference ID: **PWD/Q0301, Version 1.0**
NSQF Level 3

PwD Assistive Aids Repair Technician



Scan this QR to access eBook

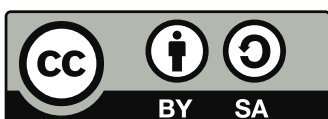
<https://eskillindia.org/home/handbook/105>

Published by**Skill Council for Persons with Disability**

501-City Centre, 5th Floor,
Gokalpuri, Dwarka, New Delhi,
Delhi 110075
Phone: 011 2808 5058

First Editio, March 2023

This book is sponsored by Skill Council for Persons with Disability (SCPwD)
Under Creative Commons Licence: CC-BY-SA

Attribution-ShareAlike: CC BY-SA

This license allows reusers to distribute, remix, adapt, and build upon the material in any medium or format for non commercial purposes only, and only so long as attribution is given to the creator. If you remix, adapt, or build upon the material, you must license the midified material under identical terms.

Disclaimer:

The information contained herein has been obtained from sources reliable to Skill Council for Persons with Disability (SCPwD). SCPwD disclaims all warranties to the accuracy, completeness or adequcy of such information. Skill Council for Persons with Disability shall have no liability for errors, omissions or inadequcies in the information contained herein or for the interpretations thereof. Every effort has been made to trace the owners of the copyright matetial included in the book. The publishers would be grateful for any omissions brought to their notice for acknowledgements in future editions of the book. No entity in Skill Council for Persons with Disability shall be responsible for any loss whatsoever, sustained by any person who relies on this material. All pictures shown are for illustration purpose only. The cided boxes in the book called Quick Response Code (QR Code) will help to access the resources linked to the content. These QR codes are generated from links and you tube video resources available on internet for knowledge enhancent on the topic and are not created by SCPwD. Embedding of the link or QR code in the content should not be assumed ensorement of any kind.

Skill Council for Persons with Disability is not responsible for the views expressed or content or reliability of linked videos. SCPwD cannot guarantee that these links/QR codes will work all time as we have no control over availability of linked pages.





Shri Narendra Modi
Prime Minister of India

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

Acknowledgements

This participant handbook is meant for PwD Assistive Aids Repair Technician is a sincere attempt to ensure the availability of all the relevant information to the existing and prospective job holders in this job role. We would like to thank all the experts and organisations who have helped us by reviewing the content and providing their feedback to improve its quality.

This handbook will help deliver skill-based training for the job role PwD Assistive Aids Repair Technician. We hope that it will benefit all the stakeholders, such as participants, trainers and evaluators. We have made all efforts to ensure the publications meet the current quality standards for the successful delivery of QP/NOS-based training programs. We welcome and appreciate any suggestions for future improvements to this handbook.

About this Guide

This facilitator guide is intended to empower the trainer/facilitator to prepare the participant to become a 'PwD Assistive Aids Repair Technician' as per the Qualification Pack (QP).

The objective of the guide is to provide an approach map for interacting with the trainees undergoing training on the job role. The aim of the course is to provide both theoretical and practical knowledge to the trainees, and also guide them.

This guide is neither a substitute nor complete road map, but an aid to help you to pass on the knowledge on all the aspects to the trainees in a systematic manner. It is expected that the trainer is fully conversant with all the contents of the handbook. The guide is just to indicate that how to proceed for covering a topic and includes some additional information that may be necessary for the trainer to develop better comprehension.

Facilitator with the help of this guide will be able to build among the participants:

Knowledge and Understanding: Satisfactory operational learning and comprehension to play out the required chore.

Performance Criteria: Pick up the required aptitudes through hands on preparing and play out the required operations inside the predetermined measures.

Professional Skills: Capacity to settle on operational choices relating to the zone of work.

The guide will also help them learn more by field visits and providing hands on training. It is expected that irrespective of the region, knowledge on all aspects of the job role 'PwD Assistive Aids Repair Technician' will be imparted to the trainees.

Symbols Used



Ask



Activity



Do



Demonstrate



Explain



Elaborate



Facilitation Notes



Field Visit



Learning Outcomes



Notes



Objectives



Practical



Resource



Summarize



Say



Team Activity



Exercise



Role Play

Table of Contents

S.No. Modules and Units	Page No.
1. Basics of Electricity	1
Unit 1.1 – Fundamentals of Electricity	3
Unit 1.2 – Circuit Connections	5
Unit 1.3 – Single Phase and Three Phase Power Supply	8
2. Types of House Wiring and Fault Repair in House Wiring	11
Unit 2.1 – Tractor Designs and Functions	13
Unit 2.2 – Dangerous Machines (Regulation) Act 1983	19
3. Mains, Distribution, Controls Circuits and Protection in House	21
Unit 3.1 – Single Phase Home Wiring	24
4. Maintenance & Repair of Household Gadgets	27
Unit 4.1 – Single Phase Motor	30
Unit 4.2 – Repair and Maintenance of Home Gadgets	34
5. Assemble, Repair and Maintain HPT	36
Unit 5.1 – Hand Propelled Tricycle (HPT) – Assembly, Repair and Maintenance	39
6. Assemble, Repair and Maintain a Folding Wheelchair	42
Unit 6.1 – Folding Wheelchair and its Parts	44
Unit 6.2 – Assembling, Repairing and Maintenance of Folding Wheelchair	46
7. Assemble, Repair and Maintain Battery-Operated Motorized Tricycle/ Wheelchair	49
Unit 7.1 – Assemble, Repair and Maintain Battery-Operated Motorized Tricycle	51
8. Repair and Maintain Hearing Aids (Digital)	57
Unit 8.1 – Hearing Aids	59
Unit 8.2 – Repairing and Maintenance of Digital Hearing Aids	62
9. Communicate Effectively with Others	65
Unit 9.1 – People First Language (PFL)	67
Unit 9.2 – Bias-Free Communication	69
Unit 9.3 – Gender Sensitivity	71
Unit 9.4 – Workplace Harassment and POSH	73
Unit 9.5 – Preparation of Teaching Material	76
Unit 9.6 – Digital Communication	78
10. Follow Health, Safety, and Hygiene Practices	81
Unit 10.1 – Personal and Workplace Hygiene	83
Unit 10.2 – Health and Safety Measures at Workplace for Persons with Disability	82
Unit 10.3 – Workplace Cleanliness and Waste Management	88





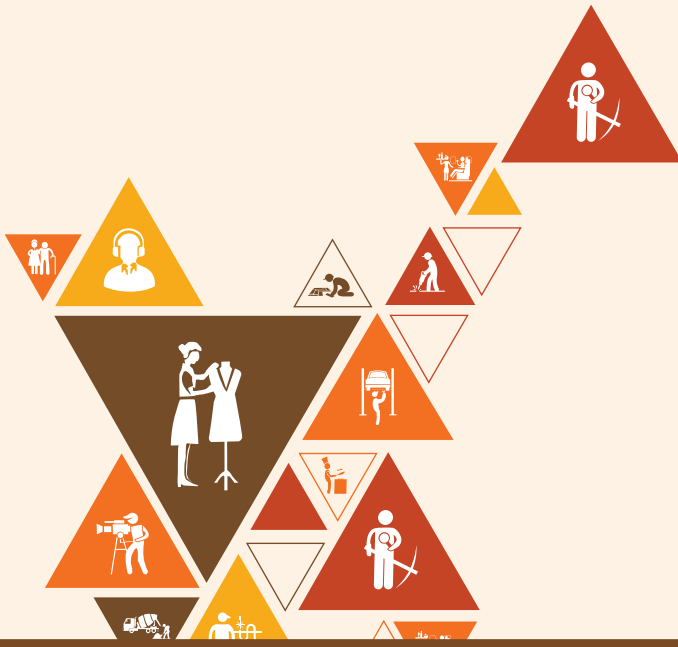


1. Basics of Electricity

Unit 1.1 – Fundamentals of Electricity

Unit 1.2 – Circuit Connections

Unit 1.3 – Single Phase and Three Phase Power Supply



Unit 1: Introduction

Key Learning Outcomes

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

Theory - Key Learning Outcomes	Practical - Key Learning Outcomes
<ul style="list-style-type: none">• Understand basic fundamentals of Electricals.• Explaining the basic key concepts of Voltage, Current, Capacitance, Resistance, KVA, KWh.• Understand Circuit connections, voltage and current relationship in star & delta configuration.• Understand 3 phase and 1 phase supply familiarity with energy parameters.	<ul style="list-style-type: none">• Demonstrate various circuit connections.• Perform electrical circuit. calculations using Ohms law.• Demonstrate the application of Kirchhoff's first and second laws.

Unit 1.1 Fundamentals of Electricity

Unit Objectives

At the end of the session, participant will be able to:

- Understand fundamentals of electricals.
- Explaining the basic key concepts of Voltage, Current, Capacitance, Resistance.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- Have you ever heard of the term "atom"?
- What is the structure of the atom?

Explain

- Draw a circle on a whiteboard that represents matter. Then, divide the circle into small circles that represent the particles known as atoms. Define the term atom with the help of the drawing.
- Introduce the terms electron, neutron, and proton by explaining the structure of an atom.

Do

- Present the following two scenarios and ask a question: What is common in these two scenarios?
 - Scenario 1: Rub a balloon against your hair.
 - Scenario 2: Rub your socks against the carpet.
- After participants answer the question, tell them that the electric charge is generated in both scenarios.

Explain

- Explain the concept of electric charge by referring the participant handbook.

Ask

- What are free electrons?

Elaborate

- Elaborate on the concept of electrons by explaining the structure of an atom.
- Elaborate on the concept of free electrons by referring to the structure of free electrons.

Ask

- Have you ever experienced an electric shock in your life?
- If yes, how did it happen?
- How would you avoid this mishap in future?

Explain

- Inform the participants that to avoid such incidents in future, it is important for us to know about insulators, conductors and semiconductors.
- Explain the concepts – Conductors, Insulators and Semiconductors by referring to the participant handbook.

Ask

- What are four fundamental terms related to electricity?

Explain

- Explain the four fundamental elements – Current, voltage, power and resistance by referring to the participant handbook.

Team Activity

- Divide the class into groups of four.
- Assign each group one fundamental element of electricity.
- Ask each group to discuss the topic. Give them 10 mins for discussion.
- After discussion, ask each group to explain their element to the other groups.
- Facilitate the discussion between the groups. Add the points if they have missed anything.
- Ask the participants the questions on the four fundamental elements of electricity to check their understanding.

Ask

- What exactly is a capacitor?
- What is the capacitor used for?

Explain

- Explain the concept of capacitor by referring to the participant handbook.

Notes for Facilitation

- Ask the participants if they have any questions.
- Encourage the participants to ask and answer questions and encourage peer learning in the class.
- Answer all the doubts in case any to the participants. Indicate potential sources of information to each of the group.

Unit 1.2 Circuit Connections

Unit Objectives

At the end of the session, participant will be able to:

- Understand circuit connections, voltage and current relationship in star & delta configuration.
- Demonstrate various circuit connections.
- Perform electrical circuit calculations using Ohm's law.
- Demonstrate the application of Kirchhoff's first and second laws.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Electric circuit with essential components like circuit kit, electrical battery, controlling device, protection device etc.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- Have you ever seen an electric circuit?
- What is an electric circuit?
- What are the fundamental elements of an electric circuit?

Explain

- Explain the basic concept of electric circuit.
- Describe the primary components of the perfect electric circuit by referring to the participant handbook.
- List the fundamental characteristics of electric circuits.

Do

- Draw a circuit diagram on the whiteboard.

Explain

- Explain the components of circuit diagram.

Do

- Demonstrate to the class the following types of electric circuits:
 - Short circuit
 - Open circuit
 - Closed circuit
 - Parallel circuit
 - Series parallel circuit

Team Activity

- Divide the class into six groups. Make sure each group has two members.
- Assign each type of electric circuit to a different group.
- Distribute various types of electric circuits to appropriate groups.
- Allow 20 minutes for discussion and 5 minutes for each group to present.
- Instruct each group to present and discuss the type of electric circuit in front of the class.
- Inform the class to observe and note down the components of each type of electric circuit.

Ask

- Are you familiar with the work of the scientist Ohm and the law he formulated?

Explain

- Explain Ohm's law and write down the formula on the whiteboard.

Do

- Draw the Ohm's law triangle on the whiteboard and introduce the terms voltage, current and resistance.

Team Activity

- Depending on how many students are in the class, divide them into three groups of two to three each, such as Group A, Group B and Group C.
- Show them how to calculate the voltage, current and resistance.
- Tell the groups to use the Ohm's law triangle from the Participant Handbook.

Ask

- Have you ever heard the law of Kirchhoff?
- What is purpose of this law?

Explain

- Explain Kirchhoff law by referring to the participant handbook.

Do

- Draw a complex electrical resistance circuit on the white board.

Explain

- Explain the complex electrical resistance circuit with the help of diagram on white board.

Say

- Explain the complex electrical resistance circuit with the help of diagram on white board.

Explain

- Explain the Kirchhoff's First Law or Kirchhoff's Current law by referring to the participant handbook.
- Explain the Kirchhoff's second Law or Kirchhoff's voltage law by referring to the participant handbook.

Team Activity

- Divide the class into 2 groups to discuss the two laws.
- Assign each group one Kirchhoff's law.
- For example:
Group A- Kirchhoff's First Law
Group B - Kirchhoff's Second Law
- Ask them to discuss the laws within the group and prepare the presentation.
- Give 15 mins for discussion and 5 mins to each group for presentation.
- Facilitate the discussion during the presentation and add points if the participants have missed anything.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

Unit 1.3 Single Phase and Three Phase Power Supply

Unit Objectives

At the end of the session, participant will be able to:

- Understand 3 phase and 1 phase supply.
- Familiarity with energy parameters.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- Do you know which type of current is used by tube lights and fans in this room?
- Which type of current is used by the electronic items that we use in our daily life?

Explain

- Explain different types of current – alternate current (AC) and direct current (DC).

Ask

- What do you understand by power phase?

Elaborate

- Elaborate the concept of power phase by referring to the participant handbook.

Say

- Let's learn about single phase and three phase electricity through a group activity.

Team Activity

- Divide the class into 2 groups to discuss the two topics.
- Assign each group one law. For example,
Group A - Single phase electricity
Group B - Three phase electricity
- Ask them to discuss the topics within the group and present in front of the class.
- Give 15 mins for discussion and 5 mins to each group for presentation.
- Facilitate the discussion during the presentation and add points if the participants have missed anything.

Team Activity

- Divide the class into 2 groups to discuss the two topics.
- Assign each group one law. For example,
Group A - Single phase electricity
Group B - Three phase electricity
- Ask them to discuss the topics within the group and present in front of the class.
- Give 15 mins for discussion and 5 mins to each group for presentation.
- Facilitate the discussion during the presentation and add points if the participants have missed anything.

Ask

- How many stars does your refrigerator have?
- Do you understand the purpose of star ratings?
- What is energy efficiency ratio?

Explain

- Explain the concept of Energy Efficiency Ratio (EER) by referring to the participant handbook.

Ask

- Have you ever seen the power saving guide BEE label on your refrigerator?
- What is the benefit of BEE rating?

Explain

- Explain the concept of Energy Efficiency Ratio (EER) by referring to the participant handbook.

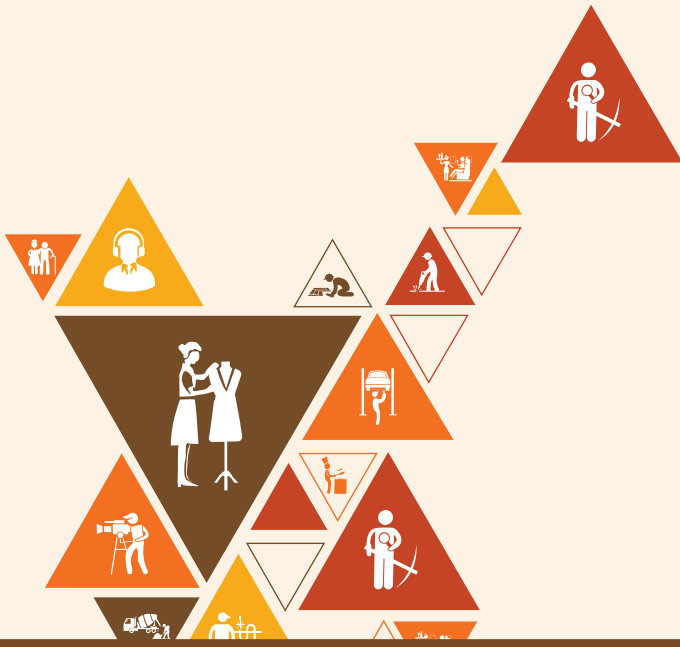
Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

2. Types of House Wiring and Fault Repair in House Wiring

Unit 2.1 –Electric Wires and Cables for Houses

Unit 2.2 –Troubleshooting and Repairing of Domestic Electric



Unit 2: Types of House Wiring and Fault Repair in House Wiring

Key Learning Outcomes

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

Theory - Key Learning Outcomes	Practical - Key Learning Outcomes
<ul style="list-style-type: none"> • Understand rating and current carrying capacity of wires, cables, fuse, switches, sockets, MCBs, ELCBs and other electrical accessories. • Lay conduit pipe concealed and open wiring, batten, casingcapping and temporary cleat wiring • Ensure correct requirement of wires, cables, fuse, switches and other electrical accessories for optimal expenditure • Ensure wiring and points selected in wiring are according to load growth in future • Understand use of under-voltage protective devices, choice of setting of protective devices, labelling of protective devices, switches and terminals • Understand insulation resistance of all live conductors to earth, insulation resistance between live conductors • Ensure selection of equipment appropriate to external influences, access to switchgear and equipment, presence of warning signs and danger notices. • Ensure open circuit due to overheated switches, socket and wires in control board due to loose contact and overload. 	<ul style="list-style-type: none"> • Develop circuit and wiring diagram and electrical signage, code specifications to plan wiring layouts, consumption points accurately, as may be required. • Use various types of tools, their functions and application for carrying out work. • Implement system in the most economical way. • Implement methods of protection against electric shock. • Use updated technology products and take their ageing into consideration. • Inspect fault locating points e.g. fuse blown, MCB, RCD trip or short circuit location in wiring circuit. • Check polarity to ensure all switches are connected in phase conductors • Check equal distribution of load on three phase wiring in larger residential and commercial units. • Check the color coding, connection and identification of conductors, cables and wires. • Check routing of cables, proper selection of conductors, wires and connectors and connection of single pole devices.

Unit 2.1: Electric Wires and Cables for Houses

Unit Objectives

At the end of the session, participant will be able to:

- Understand rating and current carrying capacity of wires, cables, fuse, switches, sockets, MCBs, ELCBs and other electrical accessories.
- Lay conduit pipe concealed and open wiring, batten, casing capping and temporary cleat wiring.
- Ensure correct requirement of wires, cables, fuse, switches and other electrical accessories for optimal expenditure.
- Ensure wiring and points selected in wiring are according to load growth in future.
- Understand use of under-voltage protective devices, choice of setting of protective devices, labelling of protective devices, switches and terminals.
- Understand insulation resistance of all live conductors to earth, insulation resistance between live conductors.
- Ensure selection of equipment appropriate to external influences, access to switchgear and equipment, presence of warning signs and danger notices.
- Ensure open circuit due to overheated switches, socket and wires in control board due to loose contact and overload.
- Develop circuit and wiring diagram and electrical signage, code specifications to plan wiring layouts, consumption points accurately, as may be required.
- Use various types of tools, their functions and application for carrying out work.
- Implement system in the most economical way.
- Implement methods of protection against electric shock.
- Use updated technology products and take their ageing into consideration.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Wires, cables, fuse, switches, sockets, MCBs, ELCBs
- Nylon-coated thermoplastic electrical wire
- Assignments included in participants manual.

Ask

- Do you know the difference between wire and cable?
- What kinds of wires have you seen in your home?
- What is wire labelling?

Ask

- Do you know the difference between wire and cable?
- What kinds of wires have you seen in your home?
- What is wire labelling?

Do

- Demonstrate/ show a nylon-coated thermoplastic electrical wire to the class and explain the wire labelling concept.

Elaborate

- Elaborate wire labelling, wire material and voltage rating concepts in detail.

Ask

- Have you ever seen different wire colours in a same cable?
- What is the significance of the various wire colours?

Explain

- Explain the different colours of wire by referring to the participant handbook.

Ask

- What is Gauge?

Elaborate

- Elaborate the concept of Gauge.

Ask

- How do you label the cable?
- What is the significance of labelling the cable?

Elaborate

- Elaborate the labelling of cable concept.

Ask

- What kinds of cables did you find in your household equipment?

Elaborate

- Elaborate the different kinds of cables used in household appliances by referring to the participant handbook.

Ask

- What are the different types of electrical wiring?

Explain

Explain the following types of wiring by referring to the diagrams used in participant handbook:

- Cleat Wiring
- Batten Wiring
- Casing Capping Wiring
- Lead Sheathed Wiring
- Conduit Wiring
- Live, neutral and ground wire

Team Activity

- Divide the class into 6 groups.
- Each group will have two participants.
- Assign following topics to each group
 - Group 1: Cleat Wiring
 - Group 2: Batten Wiring
 - Group 3: Casing Capping Wiring
 - Group 4: Lead Sheathed Wiring
 - Group 5: Conduit Wiring
 - Group 6: Live, neutral and ground wire
- Ask participant to discuss each topic amongst the group.
- After the discussion, each group will present the topic in front of the class.
- Facilitate the discussion during the presentation and add points if the participants have missed anything.

Ask

- Show the following electrical accessories to the class:
- Switches, Fuse, Socket, Plug and Miniature Circuit Breaker (MCB)
- Ask the following questions:
 - Are you familiar with electrical accessories?
 - What are their functions?

Explain

- Refer to the participant handbook to explain all electrical accessories (Switches, Fuse, Socket, Plug, Miniature Circuit Breaker (MCB)).
- Refer to the participant handbook to explain the operation of a Miniature Circuit Breaker (MCB).

Ask

- What are different types of MCB?

Elaborate

- Elaborate the several types of MCB and their functions using the participant handbook.

Ask

- Have you ever been shocked by an electronic device?
- How do you prevent shocks?

Explain

- Using the participant handbook, explain the following circuit breakers that are used to prevent shocks.
 - Earth-leakage circuit breaker (ELCB)
 - Molded Case Circuit Breaker (MCCB)
 - Residual Current Circuit Breaker (RCCB)

Ask

- Have you ever seen the junction box? If yes, what is it used for?
- What is electrical control panel?

Explain

- Explain the concept junction box by referring to the participant handbook.
- Explain electrical control panel with the help of diagram or picture used in participant handbook.

Ask

- How do you calculate an electrical load?

Explain

- Explain the calculation used to determine the total amount of wattage by referring to the participant handbook.

Do

- Draw a House wiring diagram on the whiteboard.

Elaborate

- Elaborate the concept of wiring diagram and how it is useful for wiring the house.

Ask

- Do you know which symbols are used for home wiring diagram?

Explain

- Draw each symbol of wiring diagram and explain its significance with the help of participant handbook.

Do

- Draw a bedroom wiring diagram on the whiteboard.

Elaborate

- Elaborate the concept of wiring diagram and how it is useful for wiring the bedroom.

Team Activity

- Divide the class into two groups.
- Assign the following topics to each group:
- Group A - House wiring diagram
- Group B - Bedroom wiring diagram
- Ask each group to discuss about the topic and present in front of the class.
- Allot 10 minutes for discussion and 5 minutes to explain the topic.
- Facilitate the discussion and add points if the participants have missed anything.

Do

- Display the tools one by one in front of the class and simultaneously ask them to identify the tool's name and its use.

Ask

- Ask the participants to observe the tools and equipment based on the names.

Do

- Distribute blank papers and pencils and erasers among the participants. Ask them to draw these tools on paper.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

Unit 2.2 Troubleshooting and Repairing of Domestic Electric Wiring

Unit Objectives

At the end of the session, participant will be able to:

- Inspect fault locating points e.g. fuse blown, MCB, RCD trip or short circuit location in wiring circuit.
- Check polarity to ensure all switches are connected in phase conductors.
- Check equal distribution of load on three phase wiring in large residential and commercial units.
- Check the color coding, connection and identification of conductors, cables and wires.
- Check routing of cables, proper selection of conductors, wires and connectors and connection of single pole devices.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- Have you ever experienced a short circuit in your home or workplace?
- Did you investigate the cause of the short circuit?

Discussion

- Have a discussion on the following:
 - Short circuit
 - Short circuit vs. overload

Ask

- What are the causes of short circuit?

Team Activity

- Divide the class into two groups.
- Assign the following topics to each group:
- Group A - House wiring diagram
- Group B - Bedroom wiring diagram
- Ask each group to discuss about the topic and present in front of the class.
- Allot 10 minutes for discussion and 5 minutes to explain the topic.
- Facilitate the discussion and add points if the participants have missed anything.

Team Activity

- Divide the class into groups of 5 participants.
- Assign the numbers 1 to 5 to each participant in each group.
- Give 10 mins to each group to discuss the steps of fixing the short circuit themselves.
- Each participant must explain steps of fixing the short circuit as per the number assigned to them.
- In this way, each group should explain all the steps in front of the other groups.

Ask

- What happened to cause an MCB to trip?
- What are the causes of MCB's trip?
- How do you fix MCB tripping?

Explain

- Explain how MCB tripping occurred?
- Explain the causes for MCB's tripping by referring to the participant handbook.
- Discuss how to fix MCB's tripping using the participant handbook.

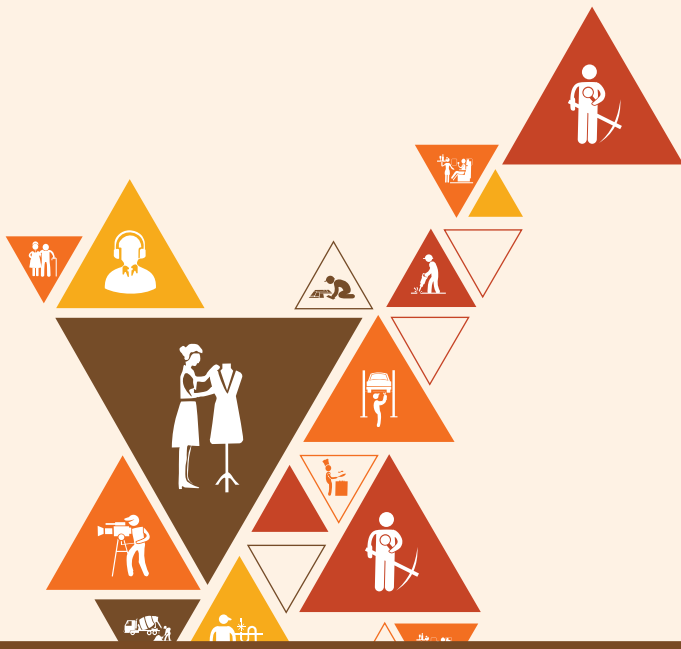
Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.



3. Main Distributions, Control Circuits and Protection in House

Unit 3.1 –Single Phase Home Wiring



Unit 3: Mains, Distribution, Controls Circuits and Protection in House

Key Learning Outcomes

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

Theory - Key Learning Outcomes	Practical - Key Learning Outcomes
<ul style="list-style-type: none"> • Understand standard location of service line connection. • Understand layout of main switch, circuit breakers require at main board. • Understand types of conduit, batten, underground and open wiring. • Read plan Ensure around obstructions like electrical wiring, gas fittings etc. • Prepare extended line for additional points with bearing capacity of existing system or augment/replace existing lines to withhold the additional load. • Ensure proper working and functioning of all protective devices that are necessary to save lives of human, livestock, animals through earthing diagrams (TT). • Ensure fuse, switch or circuit breaker is not placed in an earthed neutral conductor and are wired only in the phase conductor only. • Ensure all connections are made properly, tightened and color coding • Ensure that the correct type, size and current-carrying capacity of cables is chosen to bear the load. • Ensure that all accessible points which may be switched on/off must be easily approached by the users and made as per CEA guidelines standards. • Understand types of earthing plate and pipe earthing lay out location. • Understand importance of earth connection with household gadgets and equipments. • 	<ul style="list-style-type: none"> • Install controlling and protection devices for different circuits being used for lighting and power loads at each floor or portion. • Locate and mark the position of conduit pipe Ensures, connections into the structures with proper equipment like measuring tape, hammer, saw, drill machines etc. • Cut openings in structures to accommodate conduit pipes or pipe fittings, using hand or power tools. • Lay conduit pipe with clamps. • Install brackets and hangers to support electrical equipment. • Install, replace and repair lighting fixtures and electrical control and distribution equipment, such as tube lights, lamps, chandeliers, regulators switches, relays and circuit breaker panels. • Lay and pull wires through conduits and through holes in walls, ceiling, lanterns and floors. • Join and connect wire to fixtures and components to form circuits. • Install the protective device i.e. ratings as per the load. • Make connections and operate instruments to check the healthiness of house wiring in terms of leakage insulation resistance. • Operate instruments to check the continuity, open circuit, short circuit and load flow.

Theory - Key Learning Outcomes	Practical - Key Learning Outcomes
<ul style="list-style-type: none">• Understand procedure of earth connection with appliance, sockets main board and distribution board.• Use of devices available in market• such as Timers, impulse relay, programmable switch, twilight switch, movement detector.• Ensure and assembling of various type, design and capacity fans, tube lights, LED Lights, bulbs, lamps, doorbells, switches, geysers, inverters, exhaust fan, safety alarms, decorative lights and chandeliers.• Ensure of various size and capacity water pump motors according to the load with their control circuit of water level in tank.	

Unit 3.1 Single Phase Home Wiring

Unit Objectives

At the end of the session, participant will be able to:

- Understand standard location of service line connection.
- Understand layout of main switch, circuit breakers require at main board.
- Understand types of conduit, batten, underground and open wiring.
- Read plan Ensure around obstructions like electrical wiring, gas fittings etc.
- Prepare extended line for additional points with bearing capacity of existing system or augment/replace existing lines to withhold the additional load.
- Ensure proper working and functioning of all protective devices that are necessary to save lives of human, livestock, animals through earthing diagrams (TT).
- Ensure fuse, switch or circuit breaker is not placed in an earthed neutral conductor and are wired only in the phase conductor only.
- Ensure all connections are made properly, tightened and color coding.
- Ensure that the correct type, size and current-carrying capacity of cables is chosen to bear the load.
- Ensure that all accessible points which may be switched on/off must be easily approached by the users and made as per CEA guidelines standards.
- Understand types of earthing plate and pipe earthing lay out location.
- Understand importance of earth connection with household gadgets and equipment.
- Understand procedure of earth connection with appliance, sockets main board and distribution board.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- What is single phase wiring?
- Have you ever noticed a single-phase electrical wiring arrangement in your home or workplace?

Explain

- Using the diagram in the participant handbook, explain the concept of single-phase wiring.
- Explain the following related to single phase wiring:
 - Circuit load
 - Per load items needed
 - Current calculation and item selection

Ask

- What is the meaning of earthing in electricity?
- What is the main purpose of earthing?

Explain

- Explain the concept of earthing by describing the steps to prevent electrical shock.

Team Activity

- Divide the class into groups of 5 participants.
- Assign the numbers 1 to 5 to each participant in each pair.
- Give 10 mins to each pair to discuss the steps among themselves.
- Each participant must perform two steps of earthing as per the number assigned to them.
- In this way, each group should explain all the steps in front of the other groups.

Ask

- What are the house wiring procedures?

Explain

- Explain the following steps/processes/instruments involved in house wiring procedures:
 - Preparatory work
 - Electrical Piping work
 - Switch boxes
 - Wiring cables

Discussion

- Have a discussion on the electrical earthing and tools required for electrical piping and electric wiring works.

Ask

- What are the ISI mounting height standards for electrical accessories?

Explain

- Explain the mounting Height of Electrical Accessories as per IS Standards by referring to the participant handbook.

Ask

- What is Inspection Quality Control (QC) Methodology?

Elaborate

- Elaborate the inspection QC methodology.

Team Activity

- Ask the participants to think and note down the steps of inspection QC methodology.
- Then, ask each participant to pair up with another classmate to discuss the causes that they have noted.
- Ask the groups to share their answers with the class.
- Ask each group to present the causes of short circuit and discuss them with other groups.
- Facilitate the discussion and add points if the participants have missed anything.

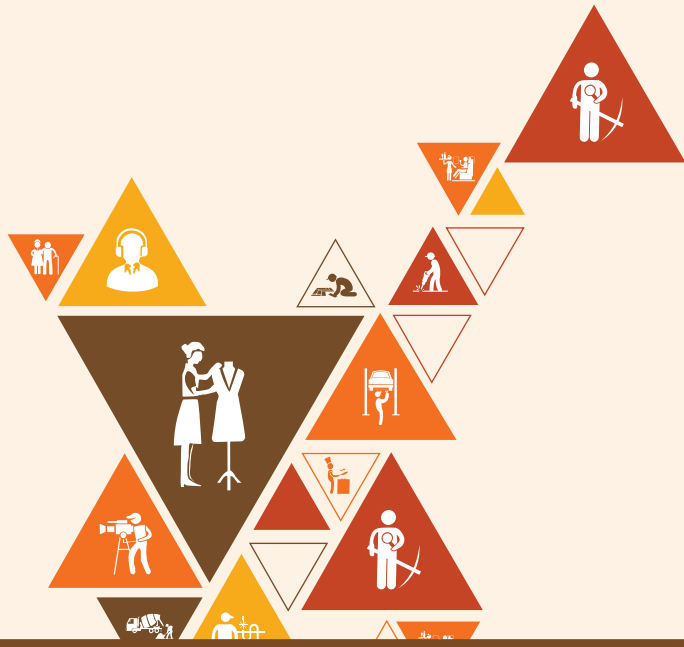
Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

4. Maintenance & Repair of Household Gadgets

Unit 4.1 – Single Phase Motor

Unit 4.2– Repair and Maintenance of Home Gadgets



Unit 4: Mains, Distribution, Controls Circuits and Protection in House

Key Learning Outcomes

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

Theory - Key Learning Outcomes	Practical - Key Learning Outcomes
<ul style="list-style-type: none"> • Specifications of the electrical equipment and gadgets. • Understand the capacity in kW, load in Amperes and power consumption in kWh for each appliance. • Check connection of equipment and status of tripping device. • Ensure presence of appropriate devices for isolating and switching. • Operate principle of single phase motor, various types of motors like self-start, capacitor start, capacitor run, universal motors and their applications and functions of condenser. • Understand how a rotating field is developed in single phase motor. • Understand the significance of the number of poles in motor winding for rpm, speed and connections for change of direction. • Check insulation resistance of motor winding with live conductors to earth and between live conductors. • Various parts of motors, pumps and their functions like ball bearings, cooling fans, fins and bushes. • Various types of winding wires, their gauge and insulating materials for motor winding. • Understand material used to make various types of heating elements like nichrome, kanthal, eureka etc., various shape, size and capacity of heating elements according to applications and usages. 	<ul style="list-style-type: none"> • Check connection of equipment and status of tripping device. • Operate principle of single phase motor, various types of motors like self-start, capacitor start, capacitor run, universal motors and their applications and functions of condenser. • Check insulation resistance of motor winding with live conductors to earth and between live conductors. • Various parts of motors, pumps and their functions like ball bearings, cooling fans, fins and bushes. • Various types of winding wires, their gauge and insulating materials for motor winding.

Theory - Key Learning Outcomes	Practical - Key Learning Outcomes
<ul style="list-style-type: none"> • Understand types of thermal insulations used in electrical gadgets like mica, asbestos, ceramics, glasswool etc. • Understand about timers (motorized, mechanical), thermal relays, bimetallicstrips. • Ensure preventive maintenance, regular cleaning, oiling, greasing of household gadgets like fans, desert cooler, water pump motors etc. • Ensure replacement of damaged switches, MCB, fan- capacitor, regulator, lighting points i.e. holder, choke, starters, water coolers and their pump & motor. • Ensure regular maintenance of - iron, toaster, induction-plate & cooker. • Ensure regular maintenance of doorbells, FL tube starters & chokes. • Preventative maintenance of batteries. • Ensure soldering of winding wires, cables and their joints in electrical gadgets. • Verify system grounding and measure insulation resistance. • Clean solar panels for removal of dust, bird droppings, pollen, leaves, branches etc. as per maintenance schedule. • Ensure all electrical connections as per specification, measure and record DC voltages and currents and identify the faults in the system. • Check for working condition of fuses, circuit breakers and all cables for loose connections. • Take adequate precautionary measures while handling electrical system adhering to relevant health and safety standards. • Understand that if reason of error is not clear, do not try to fix anything and call OEM repair and maintenance team. 	

Unit 4.1 Single Phase Motor

Unit Objectives

At the end of the session, participant will be able to:

- Operate principle of single-phase motor, various types of motors like self-start, capacitor start, capacitor run, universal motors and their applications and functions of condenser.
- Understand how a rotating field is developed in single phase motor.
- Understand the significance of the number of poles in motor winding for rpm, speed and connections for change of direction.
- Check insulation resistance of motor winding with live conductors to earth and between live conductors.
- Various parts of motors, pumps and their functions like ball bearings, cooling fans, fins and bushes.
- Various types of winding wires, their gauge and insulating materials for motor winding.
- Understand material used to make various types of heating elements like nichrome, kanthal, eureka etc., various shape, size and capacity of heating elements according to applications and usages.
- Understand types of thermal insulations used in electrical gadgets like mica, asbestos, ceramics, glass wool etc.
- Understand about timers (motorized, mechanical), thermal relays, bimetallic strips.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- What is a single-phase motor?
- When and where is a single-phase motor used?
- What is the difference between a single-phase motor and three-phase motor?
- What are the uses of single-phase motor?

Elaborate

- Elaborate on the concept of single-phase motor.
- Elaborate on the difference between single phase and three phase motor.
- Elaborate on the uses of single-phase motor.

Team Activity

- Divide the class into three groups.
- Each group must be assigned one topic as follows:
Group 1: Single-phase motor
Group 2: Single-phase motor vs. Three-phase motor
- Group 3: Uses of Single-phase motor
- Give 30 mins to prepare the presentation on the assigned topics.
- Ask the groups to present the information in front of the class.
- Ask the groups to ask questions to the presenting groups in case of questions/doubts.

Say

- Let's discuss the working principle of a single-phase motor by referring to the participant handbook.

Say

- Let's discuss the working principle of a single-phase motor by referring to the participant handbook.

Discussion

- Discuss the working principle of a single-phase motor.

Say

- Let's learn the advantages and disadvantages of single-phase motor by conducting one group activity.

Team Activity

- Divide the class into two groups.
- Ask one group to think and note down the advantages of single-phase motor.
- Similarly ask another group to think and note down the disadvantages of single-phase motor.
- Then, ask each participant to pair up with another classmate to discuss the advantages and disadvantages that they have noted.
- Ask the groups to share their answers with the class.

Ask

- What are the parts of a motor?

Team Activity

- Using the diagram in the participant handbook, explain the following parts of single-phase motor.
 - Rotor
 - Magnetic poles
 - Motor slip
 - Critical torque levels
 - Motor windings
 - Ball-bearing
 - Cooling fan
 - Fins
 - Bushes
 - Timer
 - Thermal Relays
 - Bimetallic strips

Ask

- What are the different types of single-phase motor?

Explain

- Explain different types of single-phase motor by referring to the participant handbook.

Team Activity

- Divide the class into five groups.
- Each group must be assigned one topic as follows:
 - Group 1: Resistance-Start Single-Phase Induction Motor
 - Group 2: Capacitor-Start Single-Phase Induction Motor
 - Group 3: Capacitor-Start, Capacitor-Run Single-Phase Induction Motor
 - Group 4: Permanent Capacitor Single-Phase Induction Motor
 - Group 5: Shaded Pole Motor
- Give 30 mins to prepare the presentation on the assigned topics.
- Ask the groups to present the information in front of the class.
- Ask the groups to ask questions to the presenting groups in case of questions/doubts.

Say

- Let's discuss heating elements by referring to the participant handbook.

Elaborate

- Elaborate on the materials used in heating elements.

Discussion

- Discuss the following heating elements:
 - Nichrome
 - Kanthal
 - Eureka

Elaborate

- Elaborate on the thermal insulation process.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

Unit 4.2 Repair and Maintenance of Home Gadgets

Unit Objectives

At the end of the session, participant will be able to:

- Ensure preventive maintenance, regular cleaning, oiling, greasing of household gadgets like fans, desert cooler, water pump motors etc.
- Ensure replacement of damaged switches, MCB, fan- capacitor, regulator, lighting points i.e. holder, choke, starters, water coolers and their pump & motor.
- Ensure regular maintenance of - iron, toaster, induction-plate & cooker.
- Ensure regular maintenance of doorbells, FL tube starters & chokes.
- Preventative maintenance of batteries.
- Ensure soldering of winding wires, cables and their joints in electrical gadgets.
- Clean solar panels for removal of dust, bird droppings, pollen, leaves, branches etc. as per maintenance schedule.
- Ensure all electrical connections as per specification, measure and record DC voltages and currents and identify the faults in the system.
- Check for working condition of fuses, circuit breakers and all cables for loose connections.
- Take adequate precautionary measures while handling electrical system adhering to relevant health and safety standards.
- Understand that if reason of error is not clear, do not try to fix anything and call OEM repair and maintenance team.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- What is preventive maintenance?
- What are the categories of preventive maintenance?

Elaborate

- Elaborate on the concept of preventive maintenance.
- Elaborate Time-based Preventive Maintenance category
- Elaborate Utilization-based Preventive Maintenance category
- Elaborate Condition-based Preventive Maintenance category

Explain

Explain the preventive maintenance procedures for the following household appliances:

- Wall Fan
- Exhaust Fan
- Ceiling Fan
- Steam Iron
- Toaster
- Cooktop
- Refrigerator
- Washing Machine
- Air Conditioner
- Water Pump
- Solar Panel

Team Activity

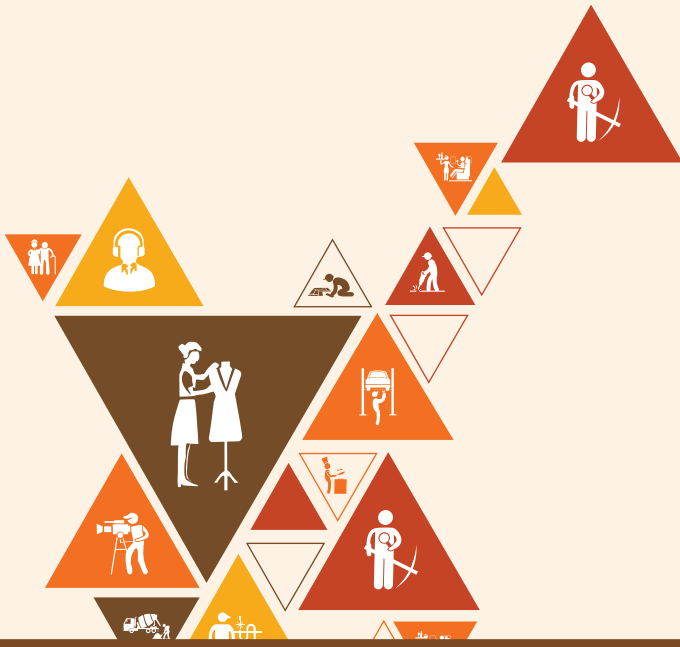
- Divide the class into 2 groups of 4 to 5 participants.
- Give each group a blank sheet of paper.
- Assign the following topics to each group and ask them to write down the preventive maintenance steps.
 - Ceiling Fan
 - Washing Machine
 - Air Conditioner
 - Water Pump
 - Water Pump
- Each group should discuss and write down the preventive maintenance for each home appliances within 30 minutes.
- After the activity, evaluate the sheet and reveal the outcome.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

5. Assemble, Repair and Maintain HPT

Unit 5.1 Hand Propelled Tricycle (HPT) – Assembly, Repair and Maintenance



Unit 5: Assemble, Repair and Maintain a Hand Propelled Tricycle (HPT)

Key Learning Outcomes

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

Theory - Key Learning Outcomes	Practical - Key Learning Outcomes
<ul style="list-style-type: none"> • List the sources of material required in the assembly of HPT. • Describe the various parts of HPT and their function. • Describe the common faults that occur in HPT and the tools required to repair. • List the tools and equipment used to assemble/ service HPT. • Explain the steps of the standard operating procedures for assembly and repair of HPT. • Explain the safety measures prescribed for handling various equipment and components of HPT. • Describe the steps to test and repair HPT 	<ul style="list-style-type: none"> • Prepare a list of various HPT components, tools & equipment required for assembly and repair. • Demonstrate the steps of assembling various parts of HPT (pedal crank, brake assembly) in line with manufacturer's guidelines). • Demonstrate the working of HPT. • Perform a check of the various parts of HPT to identify problems. • Demonstrate the steps to accurately complete the process of repair of HPT. • Show how to re-align panels and components of HPT. • Perform the process for adjustment of the braking system. • Perform the steps required to align the wheels. • Show the steps for inflation of tyres and lubrication of operating mechanisms. • Conduct a test drive to ensure accurate functioning of the repaired HPT.

Unit 5: Assemble, Repair and Maintain a Hand Propelled Tricycle (HPT)

Unit Objectives

At the end of the session, participant will be able to:

- List the sources of material required in the assembly of HPT.
- Describe the various parts of HPT and their function.
- Describe the common faults that occur in HPT and the tools required to repair.
- List the tools and equipment used to assemble/ service HPT.
- Explain the steps of the standard operating procedures for assembly and repair of HPT.
- Explain the safety measures prescribed for handling various equipment and components of HPT.
- Describe the steps to test and repair HPT.
- Prepare a list of various HPT components, tools & equipment required for assembly and repair.
- Demonstrate the steps of assembling various parts of HPT (pedal crank, brake assembly) in line with manufacturer's guidelines).
- Demonstrate the working of HPT.
- Perform a check of the various parts of HPT to identify problems.
- Demonstrate the steps to accurately complete the process of repair of HPT.
- Show how to re-align panels and components of HPT.
- Perform the process for adjustment of the braking system.
- Perform the steps required to align the wheels.
- Show the steps for inflation of tyres and lubrication of operating mechanisms.
- Conduct a test drive to ensure accurate functioning of the repaired HPT.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- Have you ever seen or ridden a Hand-Powered Tricycle (HPT)?
- Are you familiar with its mechanism?

Elaborate

- Elaborate on the concept of Hand-Powered Tricycle (HPT).
- Elaborate the driving mechanism of HPT.
- Elaborate the steering mechanism of HPT. category
- Elaborate Condition-based Preventive Maintenance category

Say

- Let's learn the driving and steering mechanism of HPT by referring to the participant handbook.

Explain

- Explain the steering and driving mechanism of Hand-Powered Tricycle (HPT) in detail.

Ask

- What are the components of a Hand-Powered Tricycle (HPT)?

Explain

- Explain the components of a Hand-Powered Tricycle (HPT) by referring to the participant handbook.

Do

- Demonstrate the steps for assembly of a Hand-Powered Tricycle (HPT).

Team Activity

- Ask the participants to demonstrate the assembly of a Hand-Powered Tricycle (HPT)
- Resources required:
 - Allen wrenches 4mm, 5mm, and 6mm.
 - Wrenches: 9mm, 10mm, 13mm, 14mm, and 15mm.
 - Phillips Screwdriver
 - Scissors or a Box-Cutter Utility Knife
 - Chain lubricant
 - Grease
- Divide the class into groups of 15 participants.
- Assign the numbers 1 to 15 to each participant in each group.

- Give 15 mins to each group to discuss the steps among themselves.
- Each participant must perform one step of the assembly process of HPT as per the number assigned to them.
- In this way, each group should demonstrate all the steps in front of the other groups.

Ask

- How do you maintain any tricycle?
- What are the maintenance and repair procedure of a Hand-Powered Tricycle (HPT)?

Elaborate

- Elaborate on the steps involved in weekly, monthly, and annual maintenance of a Hand-Powered Tricycle (HPT).

Ask

- How do you repair the puncture of a hand-powered tricycle?

Do

- Demonstrate the steps required to repair the puncture of a Hand-Powered Tricycle (HPT).

Team Activity

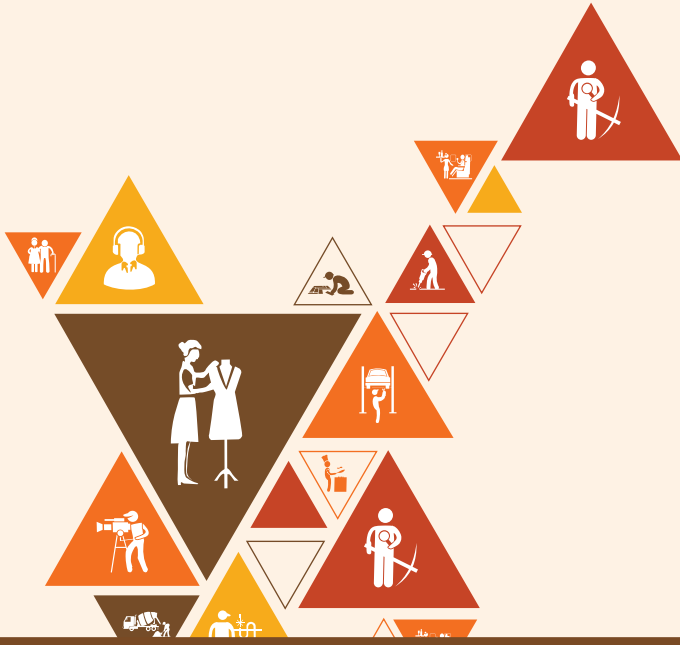
- Ask the participants to demonstrate the steps required to repair the puncture of a Hand-Powered Tricycle (HPT).
- Resources required:
 - Allen wrenches 4mm, 5mm, and 6mm.
 - Wrenches: 9mm, 10mm, 13mm, 14mm, and 15mm.
 - Phillips Screwdriver
 - Scissors or a Box-Cutter Utility Knife
 - Chain lubricant
 - Grease
- Divide the class into groups of 5 participants.
- Assign the numbers 1 to 5 to each participant in each group.
- Give 15 mins to each group to discuss the steps among themselves.
- Each participant must perform one step required to repair the puncture of an HPT as per the number assigned to them.
- In this way, each group should demonstrate all the steps in front of the other groups.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

6. Assemble, Repair and Maintain a Folding Wheelchair

- Unit 6.1 – Folding Wheelchair and its Parts
- Unit 6.2 – Assembling, Repairing and Maintenance of Folding Wheelchair



Unit 6: Assemble, Repair and Maintain the Folding Wheelchair

Key Learning Outcomes

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

Theory - Key Learning Outcomes	Practical - Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the various parts of a folding wheelchair and their function. • Select the standard gradings of various components and hardware and fittings used in the assembly of a folding wheelchair. • List the tools and equipment used to assemble/service a folding wheel chair. • Explain the procedure of repair and maintenance of a folding wheel chair. • Describe the steps for quality check to ensure the smooth functioning of the folding wheelchair. 	<ul style="list-style-type: none"> • Select the various parts of a folding wheel chair. • Demonstrate the steps of fitting a strip folding and its fasteners on a folding wheelchair. • Show the steps to assemble cloth guard with the side frame using self- tapping screw. • Demonstrate how to fix both side frames assembly with strip holding. • Demonstrate how to fit a rim assembly, tyre mounting, axle fitting with the rear wheel, using appropriate fasteners as per specifications. • Show how to fix a castor wheel with stem, fork, and plate bearings. • Demonstrate the assembly of seat and back rest with appropriate self- tapping screw. • Show the steps to assemble foot rest with rubber pad in the folding wheelchair. • Perform a check of the various parts of a folding wheelchair to identify faults. • Perform repair and service of folding wheelchair. • Conduct a test drive to ensure accurate functioning of the folding wheelchair.

Unit 6.1 Folding Wheelchair and its Components

Unit Objectives

At the end of the session, participant will be able to:

- Describe the various parts of a folding wheelchair and their function.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- Do you have any wheelchair experience?
- Can you explain the benefits of using a wheelchair?

Elaborate

- Elaborate on the benefits of a wheelchair.
- Elaborate on the factors to consider when selecting a wheelchair.

Say

- Let's learn the different types of wheelchairs by referring to the participant handbook.

Explain

- Explain the following types of wheelchairs by referring to the participant handbook:
- Self-propelled
- Attendant-propelled
- Motorized or powered wheelchair
- Other types of wheelchairs

Team Activity

- Divide the class into three groups.
- Each group must be assigned one topic as follows:
Group 1: Self-Propelled
Group 2: Attendant propelled
Group 3: Motorized or powered wheelchair
- Give 30 mins to prepare the presentation on the assigned topics.
- Ask the groups to present the information in front of the class.
- Ask the groups to ask questions to the presenting groups in case of questions/doubts.

Ask

- What are the parts of a wheelchair?

Explain

- Explain the following types of wheelchairs by referring to the participant handbook:
- Tyres, wheels, axles, casters, leg rests, armrests

Team Activity

- Divide the class into 2 groups of 4 to 5 participants.
- Give each group a sheet with an unlabelled wheelchair diagram.
- Each group should discuss and label the entire wheelchair diagram within 30 minutes.
- After the activity, evaluate the sheet and reveal the outcome.
- The wheelchair diagram with the most labels wins.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

Unit 6.2 Assembly, Repair and Maintenance of Folding Wheelchair

Unit Objectives

At the end of the session, participant will be able to:

- Select the standard gradings of various components and hardware and fittings used in the assembly of a folding wheelchair.
- List the tools and equipment used to assemble/service a folding wheel chair.
- Select the various parts of a folding wheel chair.
- Demonstrate the steps of fitting a strip folding and its fasteners on a folding wheelchair.
- Show the steps to assemble cloth guard with the side frame using self-tapping screw.
- Demonstrate how to fix both side frames assembly with strip holding.
- Demonstrate how to fit a rim assembly, tyre mounting, axle fitting with the rear wheel, using appropriate fasteners as per specifications.
- Show how to fix a castor wheel with stem, fork, and plate bearings.
- Demonstrate the assembly of seat and back rest with appropriate self-tapping screw.
- Show the steps to assemble foot rest with rubber pad in the folding wheelchair.
- Perform a check of the various parts of a folding wheelchair to identify faults.
- Perform repair and service of folding wheelchair.
- Conduct a test drive to ensure accurate functioning of the folding wheelchair.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Say

- Let's learn the Assembly of folding wheelchair by referring to the participant handbook.

Do

- Demonstrate the steps for assembly of a folding wheelchair.

Team Activity

- Ask the participants to demonstrate the assembly of a folding wheelchair.
- Resources required:
 - o Chassis
 - o Rear Wheels
 - o Castor Wheels
 - o Back Rest
 - o Foot rest
 - o Or Footplates
 - o Brakes
 - o or Handbrake
 - o Side Guard
 - o Anti-tip
 - o Push handles
- Divide the class into groups of 8 participants.
- Assign the numbers 1 to 8 to each participant in each group.
- Give 30 mins to each group to discuss the steps among themselves.
- Each participant must perform one step of the assembly process of folding wheelchair as per the number assigned to them.
- In this way, each group should demonstrate all the steps in front of the other groups.

Ask

- How do you keep a folding wheelchair in good condition?

Elaborate

- Elaborate on the steps involved in the maintenance of a folding wheelchair.

Ask

- How do you repair a folding wheelchair?

Do

- How do you repair a folding wheelchair?

Team Activity

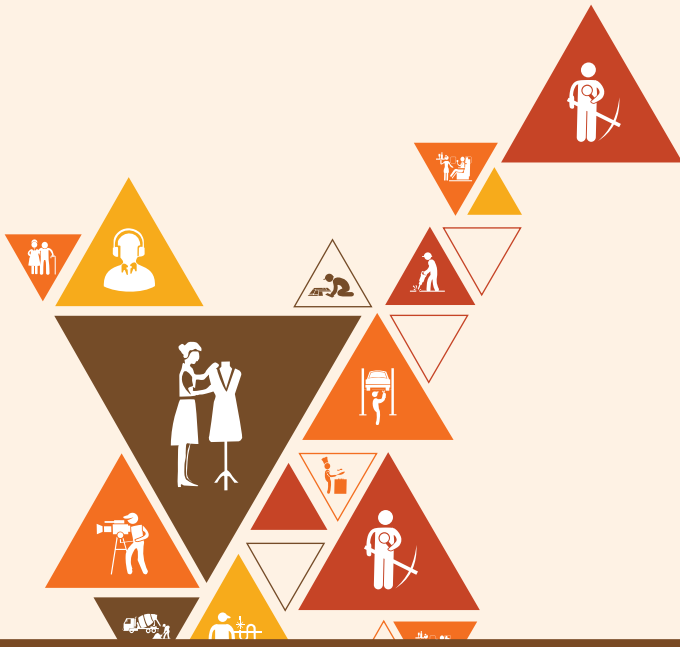
- Ask the participants to demonstrate the steps required to repair a folding wheelchair.
- Divide the class into groups of 11 participants.
- Assign the numbers 1 to 11 to each participant in each group.
- Give 15 mins to each group to discuss the steps among themselves.
- Each participant must perform the step of the assembly process of HPT as per the number assigned to them.
- In this way, each group should demonstrate all the steps in front of the other groups.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

7. Assemble, Repair and Maintain Battery-Operated Motorized Tricycle/ Wheelchair

Unit 7.1– Assemble, Repair and Maintain Battery-Operated
Motorized Tricycle



Unit 7: Assemble, Repair and Maintain a Battery-operated Motorized Tricycle/Wheelchair.

Key Learning Outcomes

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

Theory - Key Learning Outcomes	Practical - Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the various parts of a battery-operated motorized tricycle/wheelchair and their function. • List the tools and equipment required for repair of the motorized wheelchair. • Explain the steps of the standard operating procedures for assembly and repair of a battery-operated motorized tricycle/wheelchair. • Explain the function and the operating procedure of a digital multi-meter. • State how to use a SMPS battery charger. • Describe the steps for repair and maintenance of a battery-operated motorized tricycle/ wheelchair. • State the common faults in a battery-operated motorized tricycle/ wheelchair and discuss solutions 	<ul style="list-style-type: none"> • Perform the steps to assemble the various parts of a battery- operated motorized tricycle/wheelchair. • Demonstrate how to use a digital multi-meter to check the battery of a battery-operated motorized tricycle/wheelchair. • Show the steps for acceleration and speed check on a battery- operated motorized tricycle/ wheelchair. • Perform a check on the functioning of horn, light, and indicator. • Show the steps to replace the battery, if required. • Select the appropriate tools and equipment required for repair and maintenance of a battery-operated motorized tricycle/wheelchair. • Perform a check to identify any loose/wrong wiring or physical damage in a battery-operated motorized tricycle/ wheelchair. • Show the steps for repair and maintenance of a battery- operated motorized tricycle/wheelchair as per industry standards. • Conduct a test drive to ensure accurate functioning of a battery-operated motorized tricycle/wheelchair

Unit 7.1 Assemble, Repair and Maintain Battery-Operated Motorized Tricycle

Unit Objectives

At the end of the session, participant will be able to:

- Describe the various parts of a battery- operated motorized tricycle/ wheelchair and their function.
- List the tools and equipment required for repair of the motorized wheelchair.
- Explain the steps of the standard operating procedures for assembly and repair of a battery-operated motorized tricycle/wheelchair.
- Explain the function and the operating procedure of a digital multi-meter.
- State how to use a SMPS battery charger.
- Describe the steps for repair and maintenance of a battery-operated motorized tricycle/wheelchair.
- State the common faults in a battery- operated motorized tricycle/ wheelchair and discuss solutions.
- Perform the steps to assemble the various parts of a battery- operated motorized tricycle/wheelchair.
- Demonstrate how to use a digital multi-meter to check the battery of a battery-operated motorized tricycle/wheelchair.
- Show the steps for acceleration and speed check on a battery- operated motorized tricycle/ wheelchair.
- Perform a check on the functioning of horn, light, and indicator.
- Show the steps to replace the battery, if required.
- Select the appropriate tools and equipment required for repair and maintenance of a battery-operated motorized tricycle/wheelchair.
- Perform a check to identify any loose/wrong wiring or physical damage in a battery-operated motorized tricycle/ wheelchair.
- Show the steps for repair and maintenance of a battery- operated motorized tricycle/wheelchair as per industry standards.
- Conduct a test drive to ensure accurate functioning of a battery-operated motorized tricycle/ wheelchair.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- Have you ever assemble the battery-operated motorized tricycle?
- Are you familiar with battery-operated motorized tricycle?

Elaborate

- Elaborate the various parts of battery-operated motorized tricycle/wheelchair.
- Elaborate the various types of tools and equipment to repair motorized tricycle.
- Elaborate the standard procedures for assemble the motorized tricycle.
- Elaborate the digital multimeter.

Say

- Let's learn the tools and equipment to repair the motorized tricycle by referring to the participant handbook.

Explain

- Explain the digital multimeter in detail.

Ask

- What is the Switch Mode Power Supply (SMPS) battery charger?

Do

- Demonstrate the steps to assemble the various parts of a battery- operated motorized tricycle/wheelchair.

Team Activity

- Ask the participants to demonstrate the assembly various parts of a battery-operated motorized tricycle/wheelchair.
- Materials Required:
 - o Frame
 - o Wheels
 - o Battery
 - o Motor
 - o Controller
 - o Wiring
 - o Various bolts and screws.

- Remove all the parts of the kit from the packaging and organize them into different groups based on their functionality.
- These parts may include the frame, wheels, battery, seat, motor, wiring harness, and other hardware.
- The first step in assembling the tricycle/wheelchair is to put together the frame.
- Attach the front and rear wheels to the frame using bolts and nuts.
- Make sure that the wheels are properly aligned and tightened to prevent wobbling.
- The next step is to install the motor onto the frame.
- The motor should come with a mounting bracket and bolts to attach it to the frame.
- Make sure that the motor is aligned properly and tightened securely.
- The wiring harness is used to connect the battery, motor, and other electrical components.
- Locate the wiring harness and connect the wires to their respective components based on the instructions provided by the manufacturer.
- The battery is usually located under the seat of the tricycle/wheelchair.
- Install the battery by sliding it into the battery compartment and securing it with bolts or straps.
- The seat is usually attached to the frame using bolts and nuts.
- Make sure that the seat is aligned properly and tightened securely.
- Once you have completed the assembly, it's time to test the tricycle/wheelchair.
- Turn on the power switch and test the motor and other electrical components to make sure that they are working properly.

Do

- Demonstrate how to use a digital multi-meter

Team Activity

- Ask the participants how to use a digital multi meter to check the battery of a battery-operated motorized tricycle/wheelchair.
 - o Digital multimeter
 - o Battery-operated motorized tricycle/wheelchair
 - o Safety gloves and goggles (optional but recommended)
- Safety gloves and goggles (optional but recommended)
- Make sure the motorized tricycle/wheelchair is turned off and unplugged from any power source.
- Put on your safety gloves and goggles if you choose to use them.
- Locate the battery on the motorized tricycle/wheelchair.
- DC voltage should be selected on your digital multimeter.
- Switch on your multimeter and connect the black probe to the battery's negative terminal and

the red probe to the positive terminal.

- Check the voltage that is shown on the multimeter.
- A battery that is completely charged should register between 12.6 and 12.8 volts.
- If the voltage is significantly lower than the normal range, try charging the battery and testing it again after charging.
- After you finish testing, turn off your multi-meter and disconnect the probes from the battery.
- Remember to handle the battery with care and follow proper disposal procedures if it needs to be replaced.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

Ask

- What are the maintenance and repair procedure of a battery-operated motorized tricycle/wheelchair?

Elaborate

- Elaborate the steps of the common faults in a battery-operated motorized tricycle/wheelchair.

Do

- Demonstrate the steps required for maintenance and repair of a battery-operated motorized tricycle/wheelchair.

Team Activity

- Ask the participants to demonstrate the steps required for maintenance and repair of a battery-operated motorized tricycle/wheelchair.
- Materials Required:
 - o Battery-operated motorized tricycle/wheelchair
 - o Set of hand tools (e.g. wrenches, screwdrivers, pliers)
 - o Multimeter
 - o Battery charger
 - o Replacement parts as needed (e.g. batteries, tires)
- Inspect the tricycle/wheelchair for any visible damage, loose connections, or worn-out parts.

- Check the battery condition using a multimeter and ensure that it has sufficient charge.
- Check the battery terminals and connectors for any corrosion or loose connections.
- Clean the terminals and connectors with a wire brush if necessary.
- Check the wheels and tires for any visible damage, worn-out treads, or punctures.
- Replace any damaged tires or wheels as needed. Inflate the tires to the recommended pressure.
- Test the brakes to ensure that they are functioning correctly.
- Adjust the brake pads or replace them if they are worn out.
- Check the motor for any damage or loose connections.
- Ensure that it is running smoothly and not making any unusual noises.
- Lubricate the motor bearings if necessary.
- Check the wiring harness for any damage, loose connections, or corrosion.
- Repair or replace any damaged wires or connectors.
- Inspect the control panel for any damage or loose connections.
- Check the buttons and switches to ensure that they are functioning correctly.
- Once you have completed all the repair and maintenance tasks, take the tricycle/wheelchair for a test run.
- Test the brakes, accelerator, and steering to ensure that they are functioning correctly.
- Verify the battery charge and range of the tricycle/wheelchair.
- Clean the tricycle/wheelchair and tools used during the repair and maintenance process.

Do

- Demonstrate the steps required for acceleration and speed check on a battery- operated motorized tricycle/ wheelchair.

Team Activity

- Ask the participants to demonstrate the steps required for acceleration and speed check on a battery- operated motorized tricycle/ wheelchair.
- Resources required:
 - Battery-operated motorized tricycle/wheelchair
 - Stopwatch
 - Measuring tape
 - Flat, straight and clear pathway with minimal to no obstruction
 - Safety gear such as helmets, knee pads, elbow pads, and gloves.
- Before starting the activity, ensure that the battery-operated tricycle/wheelchair is in good condition, the battery is fully charged, and all safety precautions are taken.
- Choose a flat, straight, and clear pathway with minimal to no obstructions.
- Set up a measuring tape on the pathway to measure the distance travelled by tricycle/wheelchair.

Ask

- Mark the start and end points with a cone or a marker to ensure accurate measurement.
- Start the tricycle/wheelchair and gradually increase the speed by pressing the accelerator.
- Note down the time taken by the tricycle/wheelchair to cover a distance of 10 meters.
- Repeat the experiment at least 3 times and calculate the average time taken.
- Calculate the acceleration of the tricycle/wheelchair using the formula:
acceleration (m/s^2) = $2 \times \text{distance (m)} / \text{time}^2 (s^2)$
- To check the maximum speed of the tricycle/wheelchair, gradually increase the speed until the maximum speed is reached.
- Note down the maximum speed in km/h
- Repeat the above steps at least 3 times to ensure accuracy.
- After completing the experiment, turn off the tricycle/wheelchair and analyze the results.

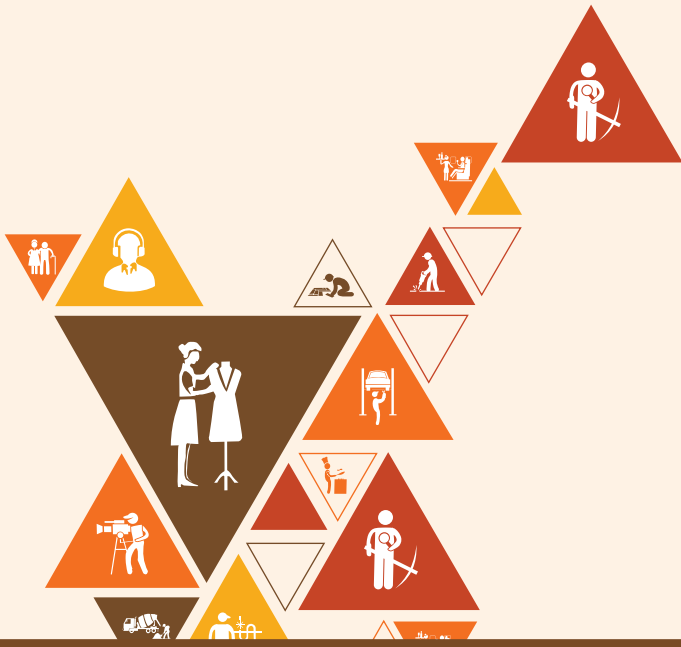
Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

8. Repair and Maintain Hearing Aids (Digital)

Unit 8.1 – Hearing Aids

Unit 8.2 – Repairing and Maintenance of Digital Hearing Aids



Unit 8: Repair and Maintain Hearing Aids (Digital)

Key Learning Outcomes

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

Theory - Key Learning Outcomes	Practical - Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the various types of hearing aids and their functions. • Describe the various parts of a hearing aid (Digital) and their functions. • Explain the steps for maintenance and repair of hearing aids (Digital). • Describe how to use basic electronic components to service and repair hearing aids (Digital). • State the common faults in a hearing aid (Digital) and discuss solutions 	<ul style="list-style-type: none"> • Show how to assemble electronic circuits using basic electrical tools (like multi-meters, soldering equipment etc.). • Select the appropriate method and tools to repair a hearing aid (Digital). • Demonstrate the steps to repair common faults in a hearing aid (Digital). (Check if battery is on or volume is set too low). • Perform the steps for maintenance of the hearing aid (such as cleaning the hearing aid, replacing the battery etc.). • Show the steps to reassemble a hearing aid (Digital) after repair. • Conduct a test to ensure the proper functioning of the hearing aid after repair.

Unit 8.1 Hearing Aids

Unit Objectives

At the end of the session, participant will be able to:

- Describe the various types of hearing aids and their functions.
- Describe the various parts of a hearing aid (Digital) and their functions.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- Have you seen or used a hearing aid before? If yes,
- Can you explain the working of hearing aids?

Elaborate

- Elaborate on the importance of a hearing aid.
- Elaborate on the working of hearing aids.

Ask

- What are the parts of hearing aids?

Explain

- Explain the following types of hearing aids by referring to the participant handbook:
- Microphone, Amplifier, Speaker, Battery, and Receiver

Team Activity

- Conduct the quiz on the parts of hearing aids.
- Divide the participants into two groups – A and B.
- Display the figure of the hearing aids where the parts are numbered on the PPT.
- Ask each group to identify the part name.
 - For example: Ask group A to identify part 1 microphone.
 - If they are not able to answer, pass on the question to group B.
 - If group A answers correctly, ask group B to identify part 5.
- Each group will get a point for the correct answer.
- The group with the more points will win the quiz.

Say

- Let's discuss the new concepts of hearing aids by referring to the participant handbook.

Explain

- Explain the concepts of hearing aids: Analogue and Digital hearing aids.

Say

- Let's discuss the difference between the analogue and digital hearing aids through a group activity

Team Activity

- Divide the class into 2 different groups.
- Assign each group one topic:
 - Group A: Analogue hearing aids
 - Group B: Digital hearing aids
- Ask each group to discuss about the topics and note down the important points.
- Give 10 mins for discussion and 5 mins for presentation.
- Facilitate the discussion during the presentation and add points if the participants have missed anything.

Ask

- What are the different styles of hearing aids?

Elaborate

- Elaborate the following styles of hearing aids:
 1. Behind the Ear (BTE)
 2. Mini BTE
 3. In the Ear (ITE)
 4. In the Canal (ITC)
 5. Completely in Canal (CIC)

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

Unit 8.2 Repair and Maintenance of Digital Hearing Aids

Unit Objectives

At the end of the session, participant will be able to:

- Explain the steps for maintenance and repair of hearing aids (Digital).
- Describe how to use basic electronic components to service and repair hearing aids (Digital).
- State the common faults in a hearing aid (Digital) and discuss solutions.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Say

- Let's discuss the digital multimeter device and its functioning by referring to the participant handbook.

Explain

- Explain how Voltage and current measure with the help of a multimeter by referring participant handbook.

Do

- Demonstrate the steps to measure voltage using multimeter device.
- Demonstrate the steps to measure current using multimeter device.
- Demonstrate the steps to measure the resistance using multimeter device.

Team Activity

- Divide participants into three large groups. Group A, Group B and Group C. The groups should sit facing each other. This activity should be played in three rounds.
- Distribute the digital multimeters to each group.
- In the first round, the participants of Group A should measure voltage by multimeter. The participants of Group B should measure current by multimeter. The participants of Group C should measure resistance by multimeter.

Elaborate

- In the second round, the roles should be reversed.
- For each round, allot 15 minutes to perform the task.
- Check the multimeter's digital display and ask the participants to note down the measurement.

Debrief

At the end of the game, ask the following questions to the participants:

- How did you find this device and share your experience with the other teams?
- List the components of a multimeter.
- What are the steps you use to measure AC and DC voltage by using multimeter?

Ask

- Do you know what a soldering iron is?
- What is the purpose of a soldering iron?

Explain

- Using the participant handbook, explain how to melt solder in a soldering iron.
- Using the participant handbook, explain the purpose of soldering station.

Elaborate

- Elaborate on the hearing aids Printed Circuit Board (PCB).

Ask

- How do you keep your digital hearing aids in good functioning condition?

Elaborate

- Elaborate on the steps involved in the maintenance of Digital hearing aids.

Say

- Let's discuss the troubleshooting of digital hearing aids by referring to the participant handbook.

Explain

- Explain the troubleshooting procedures for the following four most common hearing aid problems:
- Hearing Aids are not Producing Sound
- Hearing Aids are not Loud Enough
- Hearing Aids produce Distorted Sound
- Hearing Aids are giving Whistling or Feedback

Team Activity

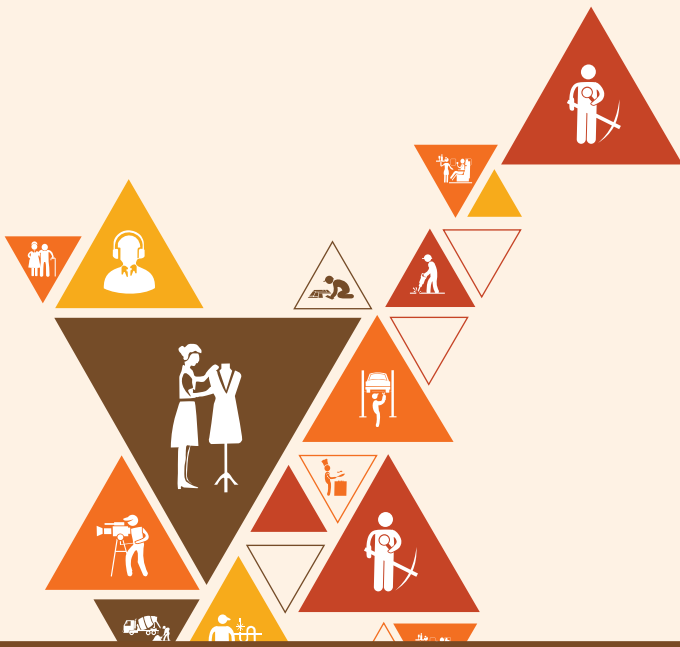
- Conduct the quiz on the digital hearing aids exploded view.
- Divide the participants into two groups – A and B.
- Display the figure of digital hearing aids exploded view where the parts are numbered on the PPT.
- Ask each group to identify the part name.
 - For example: Ask group A to identify part 1 signal processor.
 - If they are not able to answer, pass on the question to group B.
 - If group A answers correctly, ask group B to identify part 2.
- Each group will get a point for the correct answer.
- The group with the more points will win the quiz.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

9. Communicate Effectively with Others

- Unit 9.1 – People First Language (PFL)
- Unit 9.2 – Bias-Free Communication
- Unit 9.3 – Gender Sensitivity
- Unit 9.4 – Workplace Harassment and POSH
- Unit 9.5 – Preparation of Teaching Material
- Unit 9.6– Digital Communication



Unit 9: Communicate Effectively with Others

Key Learning Outcomes

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

Theory - Key Learning Outcomes	Practical - Key Learning Outcomes
<ul style="list-style-type: none"> • Explain People First Language (PFL). • Explain the significance of disability sensitization. • Discuss the challenges faced by a person with Disability • Demonstrate bias-free communication disability at the workplace and suggest ways to assist them. • Explain bias-free communication. • Explain gender concepts (gender as a social construct, gender sensitivity, gender equality etc.), issues and applicable legislations. • Discuss workplace harassment, its indicators and the process of reporting it. • Discuss Prevention of Sexual Harassment Act, 2013. • Differentiate between ethical and unethical behaviour and practices. • Discuss the benefits of understanding the socio-economic status, disability, challenges and aspirations of the learners. • Explain the protocols to be followed while dealing with persons with disability, who are at increased risk of sexual abuse as per guidelines. 	<ul style="list-style-type: none"> • Compile a list of words and phrases indicating the appropriate use of people first language • Demonstrate bias-free communication while interacting with differently abled students in a classroom environment. • Design sample teaching material/activities to inculcate skills such as peer bonding, confidence, etc. • Demonstrate how to use smart phone features such as messaging, clock, calculator, cameras, etc. • Demonstrate how to connect to internet, Bluetooth etc. and create an email ID. • Demonstrate the use of various social media platform and safety and security measures related to it.

Unit 9.1 People First Language (PFL)

Unit Objectives

At the end of the session, participant will be able to:

- Explain People First Language (PFL).
- Compile a list of words and phrases indicating the appropriate use of people first language.
- Explain the significance of disability sensitization.
- Discuss the challenges faced by a Persons with Disability.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Say

- If you see a person in a wheelchair who is unable to climb the stairs to enter a building, would you say, "There is a handicapped person who is unable to climb stairs," or "There is a person with a disability who is unable to access a building?" How should someone with a disability be addressed or introduced? Let us talk about the new language for individuals with disabilities.

Elaborate

- Elaborate the People First Language (PFL) concept in detail.

Ask

- What words or phrases are used to describe people with disabilities?

Explain

- Explain the PFL words and phrases that are used to describe people with various types of disabilities.

Ask

- What are the challenges that people with disabilities face?

Elaborate

- Elaborate seven most common challenges that people with disabilities face.

Ask

- What do you mean by disability sensitization?

Explain

- Explain the concept of disability sensitization by referring to the participant handbook.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

Unit 9.2 Bias-Free Communication

Unit Objectives

At the end of the session, participant will be able to:

- Explain bias-free communication.
- Demonstrate bias-free communication disability at the workplace and suggest ways to assist them.
- Demonstrate bias-free communication while interacting with differently abled students in a classroom environment.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- What is bias-free communication?

Explain

- Explain the bias-free communication by referring to the participant handbook.

Ask

- What are effective communication strategies?

Elaborate

- Elaborate the effective communication strategies.

Do

- Demonstrate how to communicate with someone who is blind or has low vision by referring to the participant handbook.

Team Activity

- Conduct role plays to show how to speak with someone who is blind or has low vision.
- Call two participants to pose characters as following:
 - o Person A: Normal person
 - o Person B: A person who is blind or has low vision
- Ask person A to use effective communication strategies and communicate with person B who is playing blind person character.
- Ask person B to respond to person A.
- After role play, as the class to evaluate the role-plays.
- Ask the class if person A met expectations or if there is anything they could do better when communicating with person B.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

Do

- Refer to the participant handbook to demonstrate how to communicate with someone who is deaf or hard of hearing.

Team Activity

- Conduct role plays to show how to speak with someone who is deaf or hard of hearing.
- Call two participants to pose characters as following:
 - o Person A: Normal person
 - o Person B: A person who is deaf or hard of hearing
- Ask person A to use effective communication strategies and communicate with person B who is playing deaf person character.
- Ask person B to respond to person A.
- After role play, as the class to evaluate the role-plays.
- Ask the class if person A met expectations or if there is anything they could do better when communicating with person B.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

Unit 9.3 Gender Sensitivity

Unit Objectives

At the end of the session, participant will be able to:

- Explain gender concepts (gender as a social construct, gender sensitivity, gender equality etc.), issues and applicable legislations.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- What is the distinction between sex and gender?

Explain

- Refer to the participant handbook to explain the concepts of sex and gender as per WHO.

Ask

- Have you heard of the term "Gender Sensitization"? If so, please elaborate.

Elaborate

- Elaborate the concept of Gender Sensitization.

Explain

- Explain the best practices for fostering a gender-sensitive workplace by referring to the participant handbook.

Ask

- What is gender equality?

Elaborate

- Elaborate the concept of gender equality.

Do

- Write down the Gender Sensitization laws in India on the whiteboard and read them aloud to the class.

Explain

- Refer to the participant handbook to explain the Gender Sensitization laws in India.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

Unit 9.4 Workplace Harassment and POSH

Unit Objectives

At the end of the session, participant will be able to:

- Discuss workplace harassment, its indicators and the process of reporting it.
- Discuss Prevention of Sexual Harassment Act, 2013.
- Explain the protocols to be followed while dealing with persons with disability, who are at increased risk of sexual abuse as per guidelines.
- Differentiate between ethical and unethical behaviour and practices.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- What is workplace harassment?

Explain

- Refer to the participant handbook to explain the concept of workplace harassment.

Ask

- What are the different types of workplace harassment?

Explain

Explain the following types of workplace harassment by referring to the participant handbook.

- Verbal harassment
- Psychological harassment
- Sexual harassment
- Physical harassment

Team Activity

- Present the following scenario in front of the class.
- Scenario: Neha is a software engineer who works in Parag's team. Neha's desk is just next to Parag's. During the first few weeks of the project, Parag is quite happy with Neha's work and expresses his appreciation for her by making sexual comments, which make Neha uncomfortable. Neha observes one day that Parag's computer screen saver is a sequence of derogatory images of women. Parag is aware that this makes Neha uncomfortable, yet he refuses to change it. However, he stopped harassing her after she flatly refuses his sexual advances. Now, he makes fun of her job and humiliates her in front of coworkers and customers. He discriminates against her by assigning projects to her and then arbitrarily revoking them.
- Ask two participants from the class to volunteer for role play.
- Ask the volunteers to enact the following roles:
 - o Parag
 - o Neha
- Give 5 mins to think or discuss the scenario with their peers.
- Ask the other participants to note down the observations.
- Ask the participants to identify the type of harassment and have a discussion about it.

Ask

- What is the Prevention of Sexual Harassment Act of 2013?

Explain

- Explain the Prevention of Sexual Harassment Act of 2013 by referring to the participant handbook.

Ask

- Have you ever heard the term 'POSH'?
- What are the salient features of POSH Act?

Elaborate

- Elaborate the salient features of POSH Act.

Team Activity

- Ask the participants to think and note down the salient features of POSH Act.
- Then, ask each participant to pair up with another classmate to discuss the causes that they have noted.
- Ask the groups to share their answers with the class.
- Ask each group to present the salient features of POSH Act and discuss them with other groups.
- Facilitate the discussion and add points if the participants have missed anything.

Explain

- Refer to the participant handbook and explain what factors increase the risk of sexual abuse for people with disabilities.

Ask

- What is the difference between ethical and unethical behaviour?

Elaborate

- Refer to the participant handbook and explain ethical and unethical behaviour.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

Unit 9.5 Preparation of Teaching Material

Unit Objectives

At the end of the session, participant will be able to:

- Discuss the benefits of understanding the socio-economic status, disability, challenges and aspirations of the learners.
- Design sample teaching material/activities to inculcate skills such as peer bonding, confidence, etc.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- What is the importance of knowing your learners?

Explain

- Refer to the participant handbook to explain the importance of knowing your learners.

Say

- How do you create a teaching material for people who have disabilities? Let us discuss it step by step.

Explain

Explain the steps to create teaching material for people who have disabilities by referring to the participant handbook.

Team Activity

- Divide the class into 3-4 groups depending upon the batch size.
- Ask each group to create a sample of teaching material for people who have disabilities.
- List down the steps that are needed to create teaching material on the whiteboard.
- Share the sample teaching material with the other groups.
- Ask the participants to evaluate the sample teaching materials of the other groups.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

Unit 9.6 Digital Communication

Unit Objectives

At the end of the session, participant will be able to:

- Demonstrate how to use smart phone features such as messaging, clock, calculator, cameras, etc.
- Demonstrate how to connect to internet, Bluetooth etc. and create an email ID.
- Demonstrate the use of various socialmedia platform and safety and security measures related to it.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Do

- Show the smartphone to the class and explain the basic features of the smartphone by referring to the participant handbook.

Ask

- Do you know how to connect a Bluetooth device to your android phone? Can anyone demonstrate it?

Do

- Demonstrate the steps to connecting a Bluetooth device to an android phone.

Team Activity

- Ask the participants to demonstrate the steps to connect a Bluetooth device to an android phone.
- Resources required:
 - o Android phone
- Divide the class into groups of 5 participants.

- Assign the numbers 1 to 5 to each participant in each group.
- Give 10 mins to each group to discuss the steps among themselves.
- Each participant must perform one step of connecting a Bluetooth device to an android handset as per the number assigned to them.
- In this way, each group should demonstrate all the steps in front of the other groups.
- Ask the groups in the audience to observe the demonstration and identify if there are any discrepancies in the demonstration.

Do

- Demonstrate the steps to internet installation.

Team Activity

- Ask the participants to demonstrate the steps to internet installation.
- Resources required:
 - o Wi-fi router
- Divide the class into groups of 4 participants.
- Assign the numbers 1 to 4 to each participant in each group.
- Give 10 mins to each group to discuss the steps among themselves.
- Each participant must perform one step of internet installation as per the number assigned to them.
- In this way, each group should demonstrate all the steps in front of the other groups.
- Ask the groups in the audience to observe the demonstration and identify if there are any discrepancies in the demonstration.

Do

Show the steps for creating an email ID on the computer using the participant handbook.

Team Activity

Ask the participants to demonstrate the steps for creating an email ID.

- Resources required:
 - o Computer
- Divide the class into groups of 2 participants.
- Assign the numbers 1 to 42 to each participant in each group.
- Give 10 mins to each group to discuss the steps among themselves.
- Each participant must perform one step of creating an email ID as per the number assigned to them.
- In this way, each group should demonstrate all the steps in front of the other groups.
- Ask the groups in the audience to observe the demonstration and identify if there are any discrepancies in the demonstration.

Ask

- How do you keep your social media account secure?

Elaborate

- Elaborate on the social media safety tips.

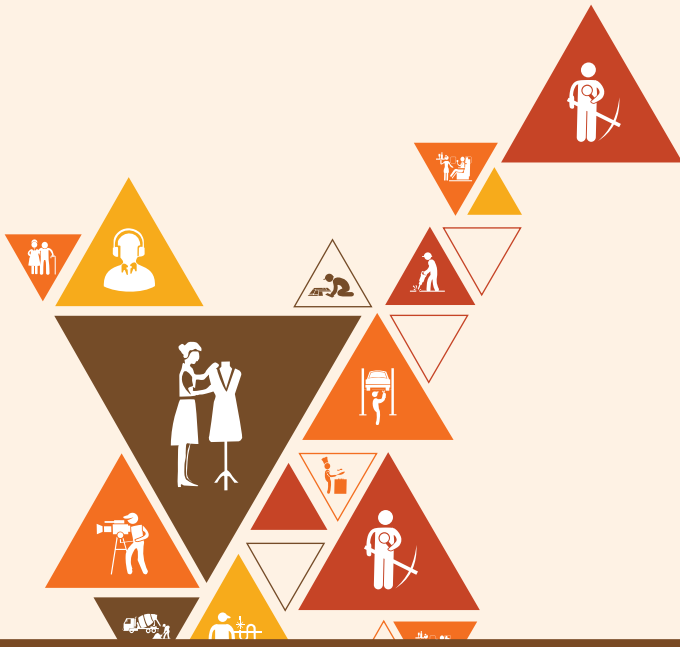
Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.



10. Follow Health, Safety, and Hygiene Practices

- Unit 10.1 – Personal and Workplace Hygiene
- Unit 10.2 – Health and Safety Measures at Workplace for Persons with Disability
- Unit 10.3 – Workplace Cleanliness and Waste Management



Unit 10: Follow Health, Safety, and Hygiene Practices

Key Learning Outcomes

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

Theory - Key Learning Outcomes	Practical - Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the health, hygiene and safety requirements for PwD in their surrounding environment as per guidelines. • Discuss the various emergencies that may happen such as fire, accident, fall etc. • Describe alternative ways and aids (audio alarms for the blind and visual alarms, simple diagrams or pictures, wheelchair, etc.) to ensure the safety of PwD. • Discuss the process and significance of reporting accidents and hazards. • Explain the importance of maintaining a clean and tidy workplace. • Discuss the significance of maintaining personal hygiene. • Discuss the significance of following health and hygiene practices as per guidelines. 	<ul style="list-style-type: none"> • Prepare a summary of health and safety requirements specific to PwD. • Demonstrate safety drills for different emergency situations. • Demonstrate ways to administer basic first aid in different situations to PwD and the correct use of PPE.

Unit 10.1 Personal and Workplace Hygiene

Unit Objectives

At the end of the session, participant will be able to:

- Discuss the significance of maintaining personal hygiene.
- Discuss the significance of following health and hygiene practices as per guidelines.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- How do you keep your personal hygiene up?

Elaborate

- Elaborate the People First Language (PFL) concept in detail.

Discuss

- Discuss the importance of personal hygiene.

Explain

- Explain neat and tidy methods by referring to the participant handbook.

Team Activity

- Divide the class into 5 groups based on the five methods of neat and tidy explained in the participant handbook.
- Assign the following methods to the groups.
 - o Daily Shower
 - o Clean Hair

Ask

- o Clean Clothing
- o Clean Nails
- o Oral Hygiene
- Each group should be assigned one method of neat and tidy.
- Allow 20 minutes for discussion and 5 minutes to present the method in front of the class.
- Note down the key points from the presentations and add the points if the participants have missed anything.

Elaborate

- Elaborate on the personal hygiene for persons with disability.

Ask

- What are the components of workplace hygiene?

Explain

- Explain the components of workplace hygiene by referring to the participant handbook.

Say

- Let us discuss the ways that can keep the workplace clean.

Discuss

- Discuss the ways that can keep the workplace clean by referring to the participant handbook.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

Unit 10.2 Health and Safety Measures at Workplace for Persons with Disability

Unit Objectives

At the end of the session, participant will be able to:

- Discuss the health, hygiene and safety requirements for PwD in their surrounding environment as per guidelines.
- Discuss the various emergencies that may happen such as fire, accident, fall etc.
- Describe alternative ways and aids (audio alarms for the blind and visual alarms, simple diagrams or pictures, wheelchair, etc.) to ensure the safety of PwD.
- Discuss the process and significance of reporting accidents and hazards.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- What is disability?

Elaborate

- Refer to the participant handbook to elaborate on the Persons with Disability (PwD) concept.

Say

- Let us discuss on the natural emergencies.

Discuss

- Discuss the emergencies that can result from natural occurrences.

Ask

- Do you know what the emergency action plan is?

Explain

- Refer to the participant handbook to explain the components of any emergency action plan.

Ask

- What are the steps of handling the emergency?

Explain

- Explain the steps of handling the emergency by using the participant handbook.

Team Activity

- Ask the participants to think and note down the steps of handling the emergency.
- Then, ask each participant to pair up with another classmate to discuss the steps that they have noted.
- Ask the groups to share their answers with the class.
- Ask each group to present the steps of handling the emergency and discuss them with other groups.

Elaborate

- Refer to the participant handbook to elaborate on the topic of periodic drills for emergency planning.

Say

- Let us discuss important emergency notification devices.

Discuss

- Discuss the emergency notification devices by referring the participant handbook.

Ask

- What is Fire Evacuation plan?

Explain

- Explain the fire evacuation plan by referring the participant handbook.

Discuss

- Discuss the Disability first aid application by referring the participant handbook.

Ask

- How will you report any incidents involving potential workplace hazards?

Explain

- Explain the process of accidents and hazards reporting by referring the participant handbook.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.

Unit 10.3 Workplace Cleanliness and Waste Management

Unit Objectives

At the end of the session, participant will be able to:

- Explain the importance of maintaining a clean and tidy workplace.

Resources to be Used

- White board, markers, duster etc.
- PowerPoint slides, pictures/ posters.
- Resources like websites, PDF documents, and samples.
- Assignments included in participants manual.

Ask

- What do you mean by "cleanliness" in the workplace?

Elaborate

- Refer to the participant handbook to elaborate on workplace cleanliness and how to maintain it.

Discuss

- Discuss five essential cleaning materials that we should use on a daily basis.

Ask

- What is "waste management"?

Team Activity

- Divide the class into 2 groups to discuss the waste management topic.
- Ask them to discuss the topic and prepare the presentation.
- Give 15 mins for discussion and 5 mins to each group for presentation.
- Facilitate the discussion during the presentation and add points if the participants have missed anything.

Notes for Facilitation

- Summarize the main points.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ensure that every participant answer all the questions.



Skill India
कौशल भारत - कुशल भारत



सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP



N.S.D.C.
National
Skill Development
Corporation
Transforming the skill landscape



Scan this QR to access eBook

<https://eskillindia.org/Home/handbook/199>



दिव्यो ग व्यक्तिर्यो के लिए कोशल परिषद्
Skill Council for Persons with Disability

Address: 501-City Centre, 5th Floor,
Gokalpuri, Dwarka, New Delhi, Delhi 110075

Email: info@scpwd.in

Web: <https://www.scpwd.in/>

Phone: 011 2808 5058

CIN No.: