DOMESTIC APPLIANCE MAINTENANCE

Lesson 10: Teacher's guide

Electrical power cables



A. Electrical power cables and their safe uses



B. Competencies

Main competency:

- 1. Safely handle simple tools, electrical components, and potentially hazardous materials.
- 2. Identify and mitigate potential electrical hazards in appliances and work environments.
- 3. Use basic tools safely for maintenance and repairs of domestic appliances.

Sub competencies:

- Demonstrate proper handling of basic tools (e.g., screwdrivers, pliers).
- Handle electrical components (wires) with care to avoid damage or injury.
- Recognise common electrical hazards (e.g., exposed wires, water around appliances)
- Propose practical solutions to mitigate identified hazards (e.g., unplugging appliances, repairing broken wires).
- Handle tools safely to avoid injury or damage to components.
- Select appropriate tools for the task (e.g., screwdriver for screws, pliers for wires).

C. Learning outcomes

By the end of this lesson students should be able to:

- 1. identify the basic parts of a power cord.
- 2. recognise signs of damage in power cords (e.g., fraying, worn insulation).
- 3. understand what a fuse does and how to check whether it is in working condition or blown.
- 4. perform a simple visual continuity test on a power cord.

D. Resources and materials

Set of items for demonstration:

- Sample power cords (safe, non-live): one with plastic insulation, one with fabric coating, one frayed (or photos/drawings).
- Plug with removable fuse.
- Multimeter (optional, not used for actual testing).
- Safety gloves and goggles.

E. Implementation guidelines

Introduction

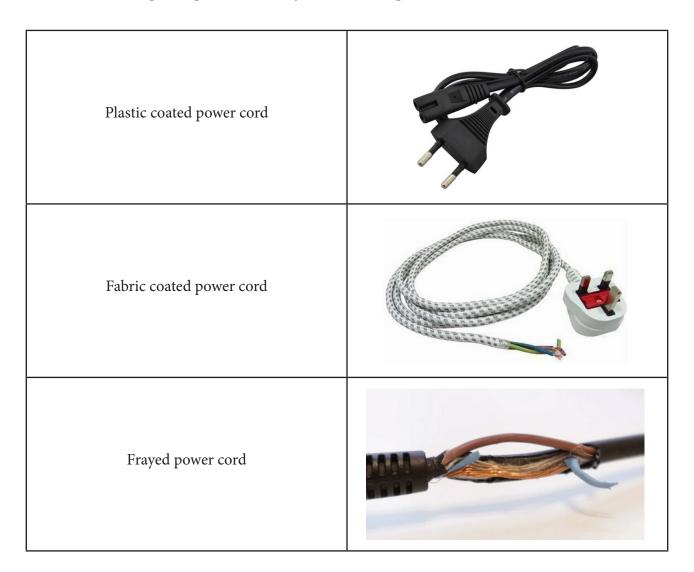
• Show a picture of a damaged cord similar to the one shown below.



- Ask the students to explain whether such a wire can be used safely.
- Discuss a few key safety rules, such as:
 - Never touch cords with wet hands.
 - 🗷 Do not use cords that are broken or frayed.
- Ask the students to read the above rules aloud to emphasise their importance.

Types of power cords

- Ask the students to recall and describe the different types of power cords/cables that they have seen.
- Show real examples of power cords or you can use the pictures below.



- Ask the students to:
 - 1) identify the different types of power cords.
 - 2) explain why we have different types of power cords.
 - 3) state which power cord is not safe for use.

- Tell the students that the fabric insulation:
 - » ensures that the cord does not become frayed/damaged easily (due to friction/rubbing) as compared to one with plastic insulation.
 - » does not melt if the cord comes into contact with the base plate of a hot electric iron.
- Explain that there is the risk of electric shock if frayed cables are used.

Visual inspection for frayed/damaged cord

Teacher will guide the students on how to check whether a cable is suitable for use without connecting it to the mains.

- Steps to inspect the whole cord:
 - 1. Unplug first.
 - 2. Look for cuts, kinks, or exposed wires along the whole length of the cord.
 - 3. Gently bend the cord to spot hidden breaks along the whole length of the cord.

Let students inspect the sample cords (safe ones only).

Recap

Summarise the key points:

- Power cord with fabric coating is used for electric iron.
- Power cords with cuts, kinks, hidden breaks, frayed or exposed wires are not safe.

F. Assessment (in worksheet)

G. Extension activity

Additional ideas that the teacher can implement could be:

- Practice unplugging devices safely.
- Create a poster: "How to check a cord".
- Arrange for a short video projection on electrical safety.