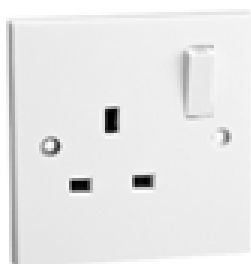


DOMESTIC APPLIANCE MAINTENANCE

Lesson 6: Teacher's guide

Electrical sockets



A. Electrical Sockets



B. Competencies

Main competency: Safely handle simple tools, electrical components, and potentially hazardous materials.

Sub competencies:

1. Demonstrate proper handling of basic tools (e.g., screwdrivers, pliers).
2. Recognise common electrical hazards (e.g., exposed wires, water near appliances)
3. Explain how to prevent short circuits and electrical shocks.
4. Identify risks associated with overloading sockets or using damaged appliances.
5. Identify common issues (e.g., no power, broken parts) in appliances.
6. Use tools safely to inspect and repair simple faults (replacing a fuse, tightening loose wires).
7. Follow a logical troubleshooting process (e.g., checking power supply, inspecting connections).
8. 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 show an understanding of:

1. the different types of sockets.
 - Indoor and outdoor sockets.
 - Wall mounted and extension sockets.
 - British standard and French sockets.
2. the importance of the waterproof casing of an outdoor socket.
3. electrical hazards due to the overloading of sockets.
4. the differences between British Standard (BS) and Norme Française (NF) sockets.

D. Resources and materials

Set of items for students working in groups of 4:

For activity:

- screwdrivers (slotted and cross slot)
- single switch socket (indoor) enclosed in its casing (BS- British Standard)
- double switch socket (indoor) enclosed in its casing (BS- British Standard)
- outdoor socket with casing (BS- British Standard)
- extension socket
- one NF socket (Norme Française socket)

For worksheet:

- four different sockets per group: single switch socket (BS), double switch socket (BS), outdoor socket (BS) and one NF socket. Note: if there are more than four students in a group, provide more sockets (consider other types of additional sockets).
- three different single core (2.5 mm) stripped wires (L, N & E) per student/group.
- screwdrivers (slotted and cross slot, depending on the type of screw in the sockets).

E. Implementation guidelines

Introduction

- Begin with a brief discussion on the common electrical socket used in Mauritius.
 - 1) Differentiate between single switch and double switch socket.



Single switch socket



Double switch socket

- 2) State the difference between indoor and outdoor sockets.



Indoor socket



Outdoor socket

- 3) Discuss the importance of the casing in an outdoor electrical socket.

Activity: Disassembling different types of socket

Instructions:

1. Students will work in groups of 4 persons.
2. Provide each group with three types of sockets.
 - Single switch socket (indoor) enclosed in its casing (BS)
 - Double switch socket (indoor) enclosed in its casing (BS)
 - Outdoor socket with casing (BS)
3. Students are required to disassemble the different sockets (separate them from their casing) (one at a time) under the supervision of the teacher.



4. Ask students to observe the disassembled sockets and to identify the three main terminals (L, N & E) in each socket.
5. Ask students to explain the meaning of the letters (L, N & E). L is the terminal of the Live wire (brown), N for Neutral (blue) and E for Earth (Yellow and green).
6. Encourage students to identify the similarities and differences in the three types of socket.
7. Provide students with a fourth socket which is the extension socket.



8. Asks students to state the use of the extension socket and identify its difference from the indoor sockets seen previously (wall mounted).

Safety Aspect:

- Waterproof casing in an outdoor socket avoids electrical hazard due to damp conditions.
- Use of two gang switch sockets over one gang switch socket. Avoids overloading sockets by using multi-plugs.

Note: it is recommended not to use multi-plugs as most of them do not satisfy safety requirements/standards.

- Plugs of appliances such as iron, rice-cooker and oven should not be connected to multi-plugs. The multi-plug and its fuse will melt.



- Discuss the importance of switching off the main supply before performing maintenance to ensure electrical safety during the process.

Conclusion:

Recap the key points:

- The three main terminals in sockets (L, N & E).
- Importance of the waterproofing casing in outdoor sockets.
- How to avoid the use of multi-plugs by having more than two gang switch sockets.
- Always switch off the main supply before doing any electrical repair at home.

F. Assessment(in worksheet)

G. Extension activity

Encourage students to state the other types of sockets which may be used in Mauritius.

Mention that there are also other types of sockets according to standards of different countries, for example, the Norme Française (NF) and US standard sockets.

Norme Française (NF) sockets		Front  Back 
US Standard Socket		