

ELECTRICAL SAFETY

LAB ACTIVITIES

1.

Shop assessment using Electrical Safety Checklist:

- Divide class in 2-4 groups and assign each group an area of the shop to inspect.
- Give each group of students a copy of one Electrical Safety Checklist on the following pages.
- Give each group of students red tags or colored tape to mark damaged items.
- Ask each group of students to examine ALL electrical cords, junction boxes, outlets, electrical panels, machine cords in their assigned area and complete the checklist.
- All student groups report their findings:
 - How many items were examined? (number of cords, junction boxes, outlets, electrical panels, machine cords)
 - Was any damaged identified?
 - Were damaged items marked with tags or colored tape?
- Collect the inspection sheets and follow-up on identified issues.

2.

Demonstrate testing of a GFCI outlet with a running tool plugged in.

3.

Show students where the automated external defibrillators (AEDs) are located in/around the shop.

This video from Red Cross video demonstrates how an AED is used. Notice that the AED “tells” the user what to do using step-by-step instructions: <http://www.redcrossrefresher.com/media/videos/cpro-aed.html>

Written step-by-step AED instructions are available here: <https://www.redcross.org/take-a-class/aed/using-an-aed/aed-steps>

4.

Tell students what are they expected to do in case of emergency. Show students where this information is available/posted.



ELECTRICAL SAFETY CHECKLIST – Cords and Panels

Electrical cords:

cords evaluated: _____

- Cords on all shop equipment are in good condition
 - No damaged insulation
 - No lose or missing prongs
 - No exposed wires
 - No splices
- Extension cords are not used instead of permanent wiring.
- Cords are unplugged from the wall outlet and stored properly when not in use.
- Extension cords and power strips are not plugged into one another.

Electrical panels:

panels evaluated: _____

- Panels are easily accessible.
- Panels are in good condition (no missing or damaged covers)
- Panel covers are kept closed.
- There are no missing breakers or other openings that expose panel wires.
- Breakers are labeled.

Problems? _____ No
 _____ Yes

Date of inspection: _____

Do not use equipment with damaged electrical components! Report the damage!



ELECTRICAL SAFETY CHECKLIST – Outlets, Junction Boxes, and Strain Reliefs

Electrical outlets:

outlets evaluated: _____

- No unguarded openings or missing parts
- No signs of fire
- In areas where water is present electrical outlets are connected to a ground fault circuit interrupter (GFCI).
- GFCI test/retest buttons work properly

Junction Boxes:

junction boxes evaluated: _____

- No open junction boxes
- No junction boxes with missing parts
- No exposed electrical wires or “live” wires in the shop

Strain Relief:

machine evaluated: _____

On every machine permanently wired verify the following:

- Strain relief present (both near the ceiling and at point of entry in the machine)
- Electrical insulation is good condition (no exposed wires)

Problems? _____ No
_____ Yes

Date of inspection: _____

Do not use equipment with damaged electrical components! Report the damage!

