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Lab - Safety

Objectives

In this lab, you will use common safety procedures while building and/or servicing computer hardware.

Part 1: Personal Safety

Part 2: Electrical Safety

Part 3: Fire Safety

Part 4: Compliance with Government Regulations

Background / Scenarios

Safe working conditions help prevent injury to people and damage to computer equipment. A safe workspace is clean, organized, and properly lit. Everyone must understand and follow safety procedures.

In this activity, you will review some of the safety procedures.

Suggested Resources

- Internet access
- Fire extinguisher
- Safety goggles
- Air filtration mask

Instructions

Part 1: Personal Safety

Some personal safety guidelines can prevent cuts, burns, electrical shock, and damage to eyesight. As a best practice, make sure that a fire extinguisher and first-aid kit are available. Proper cable management can prevent tripping hazards in a network installation.

Here are a few examples of basic safety precautions:

- Remove your watch and jewelry and secure loose clothing.
- Keep food and drinks out of your workspace.
- Wear safety goggles to prevent damage to eyesight.
- Wear an air filtration mask when there is dust or other air contaminants.
- Bend your knees when lifting heavy objects to avoid injuring your back.
- Before cleaning or repairing equipment, make sure that your tools are in good condition. Clean, repair, or replace items that are not functioning adequately.

What other simple precautions can you take to prevent injury or cause equipment damage while working with computer hardware?

Part 2: Electrical Safety

Following electrical safety guidelines helps to prevent electrical fires, injuries, and fatalities.

For example, some printer parts become hot during use. Power supplies contain high voltage.

What can you do to prevent injury or damage to printer parts?

What can you do to prevent injury or damage power supplies for computers?

Equipment Grounding

To protect the technicians, electrical equipment should be grounded to prevent electrocution. If the metal parts in the equipment becomes energized, the equipment ground provides a lower resistant path for the current to flow to the ground rather than through the handler of the faulty device.

Perform an internet search to answer the following questions:

How do you ground devices, such as PCs and printers?

How are large metal equipment racks grounded?

Note: In some countries, portable appliance testing is done to ensure that an equipment is safe to use.

Part 3: Fire Safety

Fire can spread rapidly and be very costly. Proper use of a fire extinguisher can prevent a small fire from getting out of control. Locate and read the instructions on the fire extinguishers in your workplace before you need to use them.

When working with computer components, be alert for odors emitting from computers and electronic devices. When electronic components overheat or short out, they emit a burning smell. If there is a fire, follow these safety procedures:

- Never fight a fire that is out of control or not contained.
- Always have a planned fire escape route before beginning any work.
- Get out of the building quickly.
- Contact emergency services for help.

Use a web browser or a fire extinguisher to review the proper procedure to use a fire extinguisher to answer the following questions.

a. How does the memory aid P-A-S-S help with remembering the basic rules of fire extinguisher operation?

b. Each type of fire extinguisher has specific chemicals to fight different types of fires. List the different types of fire extinguishers used in your country or region.

Part 4: Compliance with Government Regulations

When maintaining a PC or installing new equipment, you should be aware of your compliance to local government regulation with regards to health and safety laws, building codes and environmental regulations.

Health and Safety Laws

For example, Occupational Safety and Health Administration (OSHA) standards are a set of guidelines and requirements to minimize health and safety risks in United States-based workplaces. The employers provide safe and healthy working environments for their employees. The employees should be informed and complied with the guidelines, report any hazards and modify or install any equipment or materials without proper authorization.

Perform an internet search to locate the governing body for health and safety in the workplace for your country. Record the official title and link to the website.

Using the answer to previous question, document the safety guidance or standards about electrical safety from the website. Be sure to include anything that could prevent electrical hazards.

Building Codes

Building codes are the legal regulations that must be followed to meet the minimum acceptable level of safety for building and structures. The building regulations ensure the heath, safety, and protection of the public during construction and occupancy of the buildings.

The building regulations are determined by the appropriate authorities and can vary depending on the location.

Perform an internet search for your local building codes. List of some of the building codes that is adopted locally.

Environmental Regulations

When any equipment has reached the end of life, it should be disposed correctly. The equipment may be donated, recycled, or destroyed per environmental regulations.

A business has replaced 50 laptops and looking for a way to disposed of them properly. Find a local facility that can disposed of them properly and describe what will the local facility do with the laptops.

Reflection Questions

In your opinion, what is the most important safety rule when servicing a computer? Explain.