PRETECHNICAL GRADE 8 COMPLETE TEACHING NOTES

STRAND 1: FOUNDATION OF PRETECHNICAL STUDIES

1.1 -Fire and Data Safety.

Importance of safety in a work environment.

- Reduces financial losses needed to repair damaged property.
- Increases business rating because of customer and worker satisfaction.
- Reduces job losses that comes from permanent injuries.
- Reduces financial losses needed for medical expenses.
- Reduces damage to property because of lower number of accidents at workplaces.
- Reduces cases of injury because of lower number of accidents at workplaces.
- It improves productivity.

Causes of fire in a work environment.

Some of the possible causes of fire outbreak in the work environment include:

Faulty equipment such as extension cables in places such as kitchens, offices, workshop or warehouses.

Fires when performing tasks such as welding, flame-cutting or grinding. This work generates heat, sparks or flames to cause fire.

Improper storage of flammable and combustible materials such as flammable liquids or charcoal in workplace.

Human errors such as using equipment such as electric cooker incorrectly, not reporting faulty machinery as well as leaving cooking food unattended may lead to fire accidents.

<u>Injuries caused by fire at work places.</u>

Injuries caused by fire occurs when you get in contact with open fire or burning objects.
Some of the injuries caused by fire in a work environment include:

Burns-where fire raises temperature of the skin and tissues causing the tissues and cells to die.

Smoke chocking- where the victim suffers obstructed breathing, seizures and comas.

Chemical poisoning from inhaling poisonous fumes such as carbon monoxide.

Shock where a victim develops abnormal heart rhythm and becomes unconscious.

Prevention of fire outbreaks in a work environment.

Ways of preventing fire outbreak in the environment include:

Providing enough safety and security at work premises.

Keeping a work environment clean and orderly.

Being cautious when performing activities using open fire.

Having all equipment well services and maintained.

Allowing for easy access to electrical switches and fire alarm equipment.

Storing and handling flammable materials and liquids with care.

Types of fire injuries and their first aid requirements.

Different types of fire injuries require different First aid approaches.

The first aid for different fire injuries are as follows:

Performing First Aid for fire burns.

- ✓ Assess (find out) the situation to ascertain your own safety.
- ✓ Immediately get the person away from the heat sources to stop the burning.
- ✓ Cool the burn with cool or lukewarm running water for 20 minutes.
- ✓ Remove any clothing or jewellery that is near the burnt area of the skin. Do not move anything stuck to the skin.
- ✓ Make sure the person keeps warm using a warm cover such as blanket, but take care not to rub it against the burnt area.
- ✓ Cover the burn by placing a layer of cling film over it.
- ✓ If the injury is on the face, sit up as much as possible, rather than lying down. This helps to reduce swelling.

Performing First Aid for smoke choking.

- ✓ Remove casuality from smoke or toxic exposure to a safe and more ventilated open space.
- ✓ Sit casuality upright and loosen clothing around the neck and airways.
- ✓ If the casuality has breathing difficulties, call for assistance to take him or her to the hospital.

Performing First Aid for smoke poisoning.

- ✓ Move the casuality or victim to a safer place with fresh air if you can.
- ✓ Sit the person or lay them down on their side, not their back.
- ✓ If the victim has breathing difficulties, get emergency help to take him or her to hospital.

Performing First Aid for shock.

- ✓ Lay the person down, and if possible, elevate their feet about 30cm unless the head, neck or back is injured or you suspect broken hip or leg bones.
- ✓ Do not raise the person's head or turn the person on the side if they are vomiting or bleeding from the mouth.
- ✓ Keep the person warm and comfortable.
- ✓ If the victim has breathing difficulties, get emergency help o take him or her to the hospital

Fire fighting methods at work environment.

There are four fire fighting methods applicable in a work environment.

These are:

Cooling method.

> This is where the temperature of the burning materials is reduced to slow down the burning.

A suitable example is where cold water is used to put out a fire.

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  Smothering method.

  This is where the supply of oxygen to the burning object is cut out to slow down the burning process.

  An example is covering a burning object with a fire blanket or sand.

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  Starving method.

  This method involves the following activities:
  - ↳ Removing combustible items from the vicinity of the fire.
  - ↳ Removing the parts of the burning material from the mass of burning material. For example, removing a burning piece of wood from a large pile.

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  Interrupting method.

  This is the use of chemical sprays that stops burning.

  An example is the use of foam and carbon dioxide fire extinguishers

Need for observing fire safety in the work environment.

The following are reasons why or importance of observing fire safety in the work environment:

- ✧ To safeguard employee's safety by teaching them about the devices that help in fire prevention, ways of handling fires, and how to safely exit buildings during fire outbreaks.
- ✧ To keep organizations free from hazards which reduces loss of warehouse materials through fire outbreaks.
- ✧ To increase productivity because a safe workplace has lower absenteeism, higher turnover and lower employee injury.
- ✧ Protecting where items are sentimental and not easy to replace.

Data Safety in Electronic devices.

- Electronic devices users should prioritise protecting data against loss.
- Several control measures of securing data can be used.
- Specific measures are designed to deal with specific data threats when using electronic devices such as computer.

⭘ <u>Data threats in a computer.</u>

i. **Data safety**-it is protecting digital data from lose through safe storage and backing up.

ii. **Data privacy**-is protecting personal information from unauthorised access.
   It is also the ability of people to determine who can access their personal data.

iii. **Data threats**- are any potential dangers to information stored in an electronic device or computer system. They include actions that may be internal or external and that may cause stealing, destruction, denying access to or loss of data.

Data threats are commonly caused by:

- *Hackers.*
- *Malware or virus attacks.*
- *Fraudsters.*
- *Thieves.*
- *Human errors.*
- *Unauthorised access to files.*
- *Malicious access to system functions by unauthorised persons.*

Way or measures for securing data in an electronic device such as computer.

- *Installation of antivirus software*-helps to detect and delete malicious computer programs or virus that destroys data.
- *Backing up data* – data can be retrieved after creating a copy of the data on your system which you can use for recovery in case original data is lost or corrupted.
- *Use of strong passwords* -strong passwords prevents unauthorised access to data stored in electronic devices.
- *Regularly changing passwords*.
- *Limiting personal information to share*.

Control measure	What the measure protects the data against
Backing up data	Protects data from complete loss.
Installing antivirus software	Protects the data from corruption and loss.
Using strong passwords	Protects data from unauthorised access.

1.2 -Computer Hardware.

- **Computer hardware** are the physical parts of the computer that are tangible.
- The physical parts of the computer make up the computer hardware.
- Computer hardware is made up the following categories of:
  - Central processing unit.
  - Input devices that are also *subcategorized into keying, pointing, scanning, voice input, touch screen, digitizer, digital cameras.*
  - Output devices *subcategorized into softcopy output devices and hardcopy output devices.*
  - Storage devices *subcategorized into fixed and removable devices*

Categories of the computer hardware.

- The computer hardware is grouped into the following categories:
  - Input devices.
  - Output devices.
  - Storage devices.
  - Central processing unit. (CPU)

Functions of Computer hardware

Input devices are used to enter data and instructions into the computer.

They include; **mouse**, **keyboard**, **touchpad**, **joystick, scanner**, **camera**, **microphone** and **stylus**.

CPU-it processes the data entered into the computer according to the instruction given by the computer user. It is the brain of the computer and it is also called the processor.
It is made up of **Arithmetic Logic Unit. (ALU), Control Unit** and the **registers.**
It retrieves and executes instructions by coordinating and processing all the functions of a computer.

- **Output device**-they are used to give out information from the computer.
  Examples of output devices include **monitor**, **speakers**, **plotter**, **headphones**, **projectors** and **printer**.

- **Storage devices**-they are used to store data and information. They save data, information, computer softwares and running operations.
  Examples of storage devices include hard disk, memory card, flash disk and external hard disks.

Selecting Appropriate Hardware for different situations.
- Different computer hardware components are used in different situations depending on the tasks to be performed.
- *Examples.*
- ✓ For a taxi driver to communicate with his client he as to use a phone.
- ✓ To accurately capture item prices in a super market a scanner is used.
- ✓ During presentations a speaker and projector are required alongside a computer.

Input devices
- ✓ A computer works faster after receiving data.
- ✓ The data is entered in the computer system using input devices.
- ✓ Therefore, the work of input devices is to enable a computer user to enter data that needs to be processed and the instructions on how to process it.

Categories of Input device.
- ✓ Input devices are categorized according to how they are used to enter data into the computer.
- ✓ They are hardware components that help in providing data and instructions to a digital device.